IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

CALIFORNIA AIR RESOURCES BOARD,
1001 I Street
Sacramento, CA 95814

Plaintiff,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION,
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Defendants.

Case No. 1:19-cv-965

COMPLAINT

INTRODUCTION

1. Plaintiff California Air Resources Board ("CARB") brings this action under the Freedom of Information Act ("FOIA"), 5 U.S.C. § 552, for declaratory, injunctive, and other appropriate relief against the United States Environmental Protection Agency ("EPA") and the National Highway Traffic Safety Administration ("NHTSA") for ongoing violations of Sections 552(a)(6)(A)(i), 552(a)(6)(A)(ii), and 552(a)(6)(B)(i) of FOIA, as well as the agencies' regulations implementing FOIA.

2. This case concerns information underlying sweeping federal proposals to (1) alter greenhouse gas emission and fuel economy standards for automobiles, and (2) preempt authority

held by the states to set automobile emissions standards. These proposals contradict previous, thorough technical analyses conducted by EPA, NHTSA, CARB and others. Moreover, in a stark departure from prior rulemakings, critical information underlying EPA's and NHTSA's analyses was not disclosed. As very serious flaws in the agencies' analyses and conclusions are evident – and the resulting proposals threaten public health – CARB submitted FOIA requests to both agencies for documents concerning vehicle fleet composition, new car sales, vehicle safety, battery technology, and other information that NHTSA and EPA used in proposing to roll back vehicle emission and fuel economy standards. This complaint seeks release of that critical information.

3. CARB issued identical FOIA requests to EPA and NHTSA in early September 2018. EPA has failed to issue timely determinations regarding the requests. NHTSA responded to the requests, but withheld information requested by CARB based on inadequate justifications, and in some instances without justification or explanation. Some of NHTSA's unexplained and unjustified withholdings amount to failure to make and convey determinations as required by FOIA. CARB appealed NHTSA's determinations and failure to issue determinations in mid-December 2018, and NHTSA has failed to timely respond to CARB's appeal. CARB seeks immediate release of the requested agency records from EPA and NHTSA, and other relief as set forth below.

PARTIES

4. Plaintiff CARB is a California state agency charged with "coordinating efforts to attain and maintain ambient air quality standards, to conduct research into the causes of and solution to air pollution, and to systematically attack the serious problem caused by motor vehicles, which is the major source of air pollution in many areas of the state." Cal. Health & Saf. Code, § 39003.

5. Defendant EPA is an agency of the United States federal government with responsibility for environmental protection, including adopting and enforcing motor vehicle greenhouse gas emissions standards. EPA is an agency of the United States federal government within the meaning of 5 U.S.C. § 552(f)(1). EPA has possession of and control over agency records that CARB seeks, which CARB has properly requested pursuant to FOIA and EPA's implementing regulations.

6. Defendant NHTSA is a component agency of the United States Department of Transportation responsible for, inter alia, adopting and enforcing motor vehicle fuel economy standards. NHTSA is an agency of the United States federal government within the meaning of 5 U.S.C. § 552(f)(1). NHTSA has possession of and control over agency records that CARB seeks, which CARB has properly requested pursuant to FOIA and NHTSA's implementing regulations.

JURISDICTION AND VENUE

7. This Court has subject-matter jurisdiction over this action and personal jurisdiction over the parties for purposes of this action pursuant to 5 U.S.C. § 552(a)(4)(B) and 28 U.S.C. §§ 1331 and 1361.

8. Venue is proper in this district pursuant to 5 U.S.C. § 552(a)(4)(B), which grants the district court of the United States in the District of Columbia jurisdiction to enjoin federal agencies from withholding agency records and to order the production of any agency records improperly withheld from a complainant.

9. This Court has authority to grant declaratory relief pursuant to 28 U.S.C. § 2201.

10. This Court has authority to grant injunctive relief pursuant to 28 U.S.C. § 2202 and 5 U.S.C. § 552(a)(4)(B).

STATUTORY AND REGULATORY BACKGROUND

11. FOIA requires that federal agencies release records to any person, upon request, unless one of nine statutory exemptions from disclosure applies. 5 U.S.C. § 552(a)-(b). "Any reasonably segregable portion of a record shall be provided to any person requesting such record after deletion of the portions which are exempt." 5 U.S.C. § 552(b).

12. Within twenty business days of an agency's receipt of a FOIA request, the agency must issue a determination resolving the request, and must "immediately notify" the requester of "such determination and the reasons therefor." 5 U.S.C. § 552(a)(6)(A)(i)(I); 40 C.F.R. § 2.104(a); 49 C.F.R. § 7.31(a)(2).

13. An agency may only delay its response to a request if "unusual circumstances" (as described by FOIA) exist. Even in this event, the agency's time to respond is extended by no more than ten days. 5 U.S.C. § 552(a)(6)(B)(i); 40 C.F.R. § 2.104(d); 49 C.F.R. § 7.34(a). Any such extension must be "by written notice" to the requester, "setting forth the unusual circumstances for such extension and the date on which a determination is expected." *Id*.

14. If an agency's determination as to a request is appealed, the agency must make and convey a determination with respect to the appeal within twenty business days after receipt. 5 U.S.C. § 552(a)(6)(A)(ii); 49 C.F.R. § 7.33(a)(2).

15. An agency must "promptly" release non-exempt records (or reasonably segregable portions of records) requested in accordance with FOIA. 5 U.S.C. § 552(a)(6)(C)(i).

16. If an agency fails to comply with the statutory time limits for issuing and communicating determinations as to requests and appeals, the requester is deemed to have exhausted their administrative remedies and may immediately file suit. 5 U.S.C. §§ 552(a)(4)(B), (a)(6)(C)(i).

17. FOIA grants federal district courts the authority to enjoin an agency from withholding agency records and "to order the production of any agency records improperly withheld." 5 U.S.C. § 552(a)(4)(B).

18. FOIA permits the courts to grant "reasonable attorney fees and other litigation costs reasonably incurred in any case under this section in which the complainant has substantially prevailed." 5 U.S.C. § 552(a)(4)(E)(i).

FACTS

Background

19. In August 2018, EPA and NHTSA issued a joint proposal entitled "The Safer Affordable Fuel-Efficient ('SAFE') Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks" (the "Proposal"), 83 Fed. Reg. 42,986 (Aug. 24, 2018). The Proposal departs substantially from extensive technical analyses conducted to support the existing regulatory regime, including claims that lower emission vehicle technologies are costlier than previously understood. The agencies ground these conclusions in substantial part on a series of models and analyses that have not been fully disclosed.

20. Contrary to prior commitments from EPA and NHTSA to collaborate with California on these standards, and the agencies' past practice in developing motor vehicle emission standards (see, e.g., 77 Fed. Reg. 62,624, 62,632, 62,784-62,785 (Oct. 15, 2012) [discussing coordination with CARB to develop the standards at issue and for changes to said standards]), CARB has not been materially involved in discussions developing the Proposal.

21. In the "Compliance and Enforcement" portion of the Proposal, 83 Fed. Reg. at 43,476, the agencies discuss Executive Order 13,132 ("Executive Order"), which establishes requirements for federal agencies to address federalism concerns in formulating and

implementing policies. Exec. Order No. 13,132, 64 Fed. Reg. 43,255 (Aug. 4, 1999). The Executive Order requires federal agencies, including EPA and NHTSA, to "have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." 64 Fed. Reg. 43,257. When promulgating regulations that have federalism implications or preempt state law, agencies are required to consult with State and local officials early in the process of developing the proposed regulation. *Id.* at 43,258.

22. In the Proposal, EPA and NHTSA stated that they complied with the Executive Order's requirements, but provided no details about that purported compliance or any consultations with States about the Proposal before it was issued. 83 Fed. Reg. 43,476.

23. On August 27, 2018, CARB (along with Attorneys General and agencies of more than fifteen States) requested that EPA and NHTSA extend the comment period for the Proposal by at least 60 days. This request expressly noted that some information necessary to evaluate and comment meaningfully on the Proposal was not publicly available. This request was denied by both EPA and NHTSA.

24. As part of its comments in the rulemaking docket, and also pursuant to FOIA, CARB requested information necessary to evaluate the Proposal from both EPA and NHTSA by letter sent to each agency on September 11, 2018. A true and correct copy of this letter is attached hereto as **Exhibit A**.

25. CARB's requests focused narrowly on critical models, technology analyses, and related information that are central to the federal agencies' claims. But, as described below, CARB did not receive much of the information it requested. EPA and NHTSA have withheld

this information from CARB and the public. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases.

CARB's FOIA Request Letter to Agencies

26. CARB sent a letter dated September 11, 2018, to both EPA and NHTSA, which contained 12 requests for records, with subparts elaborating on some of the requests. The requests stated as follows:

> 1. Information about the models and data used to estimate battery costs for electrified vehicles.
>
> > a. The proposal and the Preliminary Regulatory Impact Analysis (PRIA), NHTSA-2018-0067-1972, reference the Argonne National Laboratories' (ANL) website for the BatPaC model for estimating battery costs for vehicles, and state that the agencies used "an up-to-date version" of the model, but do not identify the version. *(See*, e.g., 83 Fed.Reg. 42,985, 43,002 (August 24, 2018).) U.S. EPA and NHTSA have posted to the dockets for this action a document describing how BatPaC was developed, but this document appears to be from 2012. It does not state which version of BatPaC NHTSA and U.S. EPA used to estimate battery costs. See "Modeling the Performance and Cost of Lithium-Ion Batteries for Electric-Drive Vehicles, Argonne National Laboratory, ANL-12/55," NHTSA Docket ID#: NHTSA-2018-0067-1692; EPA Docket ID#: EPA-HQ-OAR-2018-0283-0764.
>
> > b. U.S. EPA and NHTSA should make available the information specifying the full battery sizes, in kilowatt-hours (kWh), battery pack configuration, and costs used for each vehicle iteration in the CAFE model. See PRIA, Electrification Technologies, Technology Overview, section 6.3.8.1, p. 357. The PRIA states that NHTSA posted ANL vehicle files that have battery pack sizes and costs for each vehicle, but there is no additional information about battery pack configuration (e.g., the number of cells, and the electrical topology of how those cells are arranged in the battery pack), nor do they directly reference where the files are posted. NHTSA and U.S. EPA have not posted the BatPaC model file(s) that were used. ANL cost and battery size data referenced in the PRIA, p. 358, footnote 325, but the footnote refers to a docket identification number that is not available. Previously, in support of the draft Technical Assessment Report and Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Proposed Determination), EPA-420-R-16-020, November 2016, U.S. EPA posted the BatPaC files that it used.

c. The proposal and PRIA provide conflicting information about which battery chemistries the agencies considered. For instance, the proposal and PRIA refer to NMC441-Gr chemistry for both plug-in hybrid-electric vehicles and battery-electric vehicles, but the ANL summary refers to NMC333. See, e.g., PRJA, pp. 372, Table 6-27, 373 ["We selected NMC441 as choice of chemistry for PHEVs and BEVs. NMC441 more suitable for high energy batteries capable of discharge rates."]. The Excel file titled "ANL-Summary of Main Component Performance Assumptions NPRM" has a tab labeled 'Description - BatPac' with the same table listed as in the PRIA, except the chemistry listed for PHEVs and BEVs is NMC333-G instead of NMC441-Gr. See Docket ID Nos. EPA-HQ-OAR-201 8-02 83-0054 and NHTSA-2018-0067-0003. The proposal and PRIA do not directly reference this file.

This information is required to replicate and evaluate whether the modeling underlying the proposal is appropriate, considering the various vehicle and technology types.

2. The PRIA references Polk registration data, including survival rates aggregated by model year, calendar year, and body style. These data are needed to verify the coefficients of the new model predictions for vehicle retirement (scrappage), but have not been made available. See, e.g., PRIA at pp. 1008, 1014, 1023, fig. 8-23, 1025, fig. 8-24, and 1027, fig. 8-25.

3. New vehicle sales and price data referenced in the proposal. This includes:

a. Data provided by the National Automobile Dealers Association (NADA) and others. See 83 Fed.Reg. at 43,095; PRIA, pp. 1017 -1018.

b. Data describing historical transaction prices, and quarterly new vehicle sales data used to develop the dynamic new sales model. See PRIA, pp. 954-961.

c. Economic data used to develop the autoregressive distributed-lag (ARDL) model that predicts new vehicle sales and is used in the CAFE model. See 83 Fed.Reg. at 43,074.

This data is necessary to evaluate the proposal's predictions for fleet population, sales, and fatalities.

4. Report of analysis of the standard errors and significance of the ARDL sales model coefficients, F-statistic and R^2 of the overall model, and variable stationarity and co-integration indicators. This information is needed to verify the statistical significance and errors of the coefficients used in the Volpe model. The coefficients for the ADRL sales model listed on p. 957, Table 8-1 of the PRIA,

are not consistent with those implemented in the model. See CAFE Model Documentation, PRIA, p. 78, Table 17, available at: https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system ["2018 NPRM for Model Years 2021-2026 Passenger Cars and Light Trucks," Model Documentation].

5. The coefficients for the dynamic fleet share equation described in the CAFE Model Documentation on p. 79. These are not listed anywhere. Additionally, according to the PRIA on p. 955, the model was based on EIA's National Energy Modeling System (NEMS), but no reference is provided for the NEMS model. This information is necessary to evaluate the equation used in the model.

6. Cited reference Anders Lie, Swedish Transport Administration, Peer Review of NHTSA's November 2011 Preliminary Report "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 2000-2007 Passenger Cars and LTVs." This document reviews the 2011 study by Kahane that NHTSA relies upon, regarding the effects of mass reduction on fatality risk. See 83 Fed.Reg. at 43,112, n. 307. It is also item 0035 in the NHTSA-2010-0152 docket. However, attempting to access the document on the docket website results in a server error. See https://www.regulations.gov/document?D=NHTSA-2010-0152-0 035, attempted August 28, 2018.

7. CAFE model output file Annual Societal Effects Report. See CAFE Model Documentation, *infra.* This data describes predicted fatalities by regulatory class, body style, and weight threshold of vehicle. This detailed information is necessary to evaluate the fatalities computation in the CAFE model.

8. The agencies' detailed explanation and derivation of their point estimates for the increase in fatalities per hundred pounds of mass reduction over a constant footprint based on historical crash data, for model years 2004-2011 and calendar years 2006-2012. Previously, these details were provided in a separate report such as the "2016 Puckett and Kindelberger report." No such report is available this time. The PRIA only provides a summary table of the results of this analysis, yet states an "updated analysis" exists. See PRIA, p. 1357, section 11.4.

9. Data used by the agencies to derive the new statistical model that predicts fatality rates by vehicle age. See PRIA Table 11-21, p. 1397. The coefficients of the model are provided, but without the data it is not possible to evaluate whether the coefficients were properly derived. Additionally, the coefficients provided in the PRIA are different (significant digits and sign changes) than those identified in the actual model source code (which are also commented out such that they are nonfunctional) and are different from the model year based coefficients used in the input files. This renders unclear what coefficients the analysis in the NPRM is based upon.

10. So-called "off model" analytical tools the agencies used to summarize and tabulate the results of the CAFE model. See 83 Fed.Reg. at 43,256, n. 595. These tools and calculations analyzed various components of social and private costs and benefits, as well as other factors. These analytical tools are supposedly available on NHTSA's website but we have not located them.

11. Input files used for the Autonomie model for various engine technologies that U.S. EPA and NHTSA rely on to calculate the efficiency improvements of various technologies, such as turbocharging and high-compression-ratio (Atkinson) engines. The input and output files are required to be able to understand what U.S. EPA and NHTSA relied on as representative of these engine technologies, and to confirm correct efficiency levels were calculated for the various technologies, considering the current state of the art.

12. Modeling tools developed by U.S. EPA including:

a. All files necessary to utilize - with the Advanced Light-Duty Powertrain and Hybrid Analysis (ALPHA) and the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles (OMEGA) - the response surface equations developed by U.S. EPA as identified or referenced in: "Peer Review of EPA's Response Surface Equation Report" (Docket ID No. EPA-HQ-OAR-2018-0283 -0025); and SAE paper 2018-01-1273 authored by U.S. EPA (Docket ID No. EPA-HQ-OAR-2018-0283-0028).

b. All new or modified input files, source code, and executable files for U.S. EPA's OMEGA model developed since the release of the Proposed Determination in late 2016.

c. All current and new input files, source code, and executable files for ALPHA used for the Proposed Determination in late 2016 and/or modified since then.

d. All current and new pre-processors and their inputs used for the Proposed Determination in late 2016 or modified since then to categorize, sort, and rank technology packages and costs for use with OMEGA.

27. CARB’s letters to EPA and NHTSA properly requested waiver of searching and copying fees for CARB’s requests.

28. CARB's FOIA requests to EPA and NHTSA complied in all respects with all applicable laws and agency regulations, including but not limited to 5 U.S.C. § 552 and EPA's and NHTSA's regulations implementing FOIA.

EPA's Response

29. By letter dated October 23, 2018, EPA acknowledged receipt of CARB's request letter of September 11, 2018, and assigned it FOIA tracking number EPA-HQ-2018-011521. A true and correct copy of this letter is attached hereto as **Exhibit B**.

30. EPA declined to make any determination as to CARB's requests numbers 1 through 11, stating only EPA's belief that NHTSA would provide its own responses to these requests.

31. As to CARB's request number 12, EPA stated that it "is reviewing records that may be responsive to this request to determine whether they are appropriate for production, or whether they should be withheld pursuant to statutory exemptions to disclosure. . . . Once EPA makes a determination under FOIA number EPA-HQ-2018-011521, you will be provided appeal rights accordingly." (See Exhibit B.)

32. EPA is in possession of records responsive to each of CARB's twelve requests, and each subpart of each request.

NHTSA's Response

33. By letter dated October 23, 2018, NHTSA responded to CARB's request letter and assigned it FOIA tracking number ES18-003395. A true and correct copy of this letter is attached hereto as **Exhibit C**.

34. While NHTSA provided some of the information CARB requested, its responses to many of CARB's requests were inadequate and many of the records sought were not provided.

35. NHTSA withheld the records sought by requests numbers 1(a), 1(c), 4, and 12 without explanation or justification.

36. NHTSA determined that it would withhold the records sought by requests numbers 2 and 9 based on FOIA Exemption 4 (trade secrets and commercial or financial information), and the records sought by request number 8 based on FOIA Exemption 5 (pre-decisional agency deliberation, opinions or recommendations). These determinations are not supported by the factual record.

37. NHTSA's deficient responses are addressed in detail in the following sections.

CARB's Request No. 1

38. CARB's first request in its FOIA letter to EPA and NHTSA sought information pertaining to BatPaC—a Battery Pack and Costing tool developed by Argonne National Laboratory ("ANL"). The tool is critical to estimating the costs of electric vehicle technologies – a consideration that is central to the overall set of vehicle standards. Neither EPA nor NHTSA properly replied to the request.

39. The BatPaC modeling tool simulates the performance and cost of batteries; because that technology is rapidly evolving, the precise specifications of the model and its inputs are of considerable importance to its results. BatPaC is contained within an Excel workbook, in which the user inputs various data. The input data include: established battery chemistries, often denoted by the letters "NMC" followed by several numbers (e.g., NMC441, NMC622, etc.); battery pack requirements or configurations, including the number of cells in the battery pack, the energy capacity of each cell, the voltage of each cell, the fade over the battery's lifetime, and so on; various key constraints, such as the maximum electrode thickness; and costs of materials, such as lithium or nickel. Battery pack configurations and materials costs can be adjusted by the

user as desired, so it is especially important for this data to be provided. Based on the inputs provided, BatPaC calculates manufacturing requirements at scale, cost, and other physical and electrical parameters for a particular battery pack configuration.

40. EPA and NHTSA used BatPaC in the modeling they did to develop the Proposal. The battery cost information BatPaC produces is one consideration of many in assessing the cost-effectiveness of vehicle standards and can have important effects on that determination.

41. Subparts (a) and (c) of CARB's first request sought records reflecting the version of BatPaC and the battery chemistries that were used by the agencies to develop the Proposal.

42. ANL updates BatPaC periodically.

43. Each new version of BatPaC includes new developments in vehicle battery technology and costs, among other possible updates. Thus, the version used is of real importance to the public in evaluating EPA's and NHTSA's conclusions in the Proposal.

44. In its response to subparts (a) and (c) of CARB's first request, NHTSA asserted that BatPaC version 3.0 had been used in developing the Proposal. This assertion is inconsistent with statements and documentation provided by NHTSA and EPA in the Proposal and its rulemaking docket.

45. EPA and NHTSA stated that they used "an updated version" of BatPaC in developing the Proposal, but did not identify the version used. *See, e.g.*, 83 Fed. Reg. 42,986, 43,002 (Aug. 24, 2018).

46. In an April 2018 interagency review of NHTSA's draft of the Proposal, EPA indicated that it could not discern which version of BatPaC NHTSA had used. EPA-HQ-OAR-2018-0283-0453 (see "Email 5 – Email from William Charmley to Chandana Achanta – June 18, 2018").

47. EPA and NHTSA posted a document describing how BatPaC was developed to the rulemaking dockets for the Proposal. This document was from 2012 and did not identify which version of BatPaC was used in developing the Proposal. Argonne National Laboratory, ANL-12/55, *Modeling the Performance and Cost of Lithium-Ion Batteries for Electric-Drive Vehicles* (2012), EPA-HQ-OAR-2018-0283-0764, NHTSA-2018-0067-1692.

48. At the time that the notice of proposed rulemaking ("NPRM") for the Proposal was published, the 2012 version of BatPaC was not available to the public on ANL's website.

49. ANL updated BatPaC several times between 2012 and the release of the Proposal on August 24, 2018.

50. ANL released BatPaC version 3.0 on December 25, 2015.

51. ANL released BatPaC version 3.1 on October 9, 2017.

52. NHTSA and EPA did not complete their battery modeling for the Proposal before October 9, 2017.

53. Different battery chemistries correlate to different versions of the BatPaC model.

54. In the Preliminary Regulatory Impact Analysis ("PRIA") for the Proposal, NHTSA and EPA stated that they used battery chemistry NMC441 for electric vehicles and some plug-in hybrid electric vehicles in their modeling for the NPRM (see p. 373 table 6-27, and p. 374).

55. However, in one document (an Excel file) included in the rulemaking docket for the Proposal, a tab states that NHTSA and EPA used battery chemistry NMC333 for electric vehicles and some plug-in hybrid electric vehicles in their modeling for the NPRM. *ANL-Summary of Main Component Performance Assumptions NPRM*, EPA-HQ-OAR-2018-0283-0054, NHTSA-2018-0067-0003.

56. There is no version of BatPaC (or, at a minimum, no version released to the public) that uses both NMC441 and NMC333 as battery chemistries.

57. Battery chemistry NMC441 is not an option in BatPaC versions 3.0 or 3.1 but is an option in BatPaC versions 2.0 and 2.1.

58. ANL dropped battery chemistry NMC441 from BatPaC after version 2.1 in response to statements by companies in the auto industry that no company in the auto industry would use battery chemistry NMC441.

59. Battery chemistry NMC333 is an option in BatPaC versions 3.0 and 3.1 but is not an option in BatPaC versions 2.0 and 2.1.

60. Documents in the rulemaking dockets thus referred to battery chemistries available in different versions of BatPaC, making it impossible for CARB (or the public) to determine which version of BatPaC the agencies used. These documents suggest that the agencies used different versions of BatPaC or made their own modifications to a version of BatPaC, but nothing in the rulemaking docket expressly says this is so, identifies the versions used or modifications made, or explains how or why different versions were used or modifications made.

61. NHTSA also did not clarify why documents in the rulemaking dockets reference battery chemistry NMC441, which is not available in version 3.0.

62. Battery chemistry has significant impact on the cost of the battery in a vehicle. Without providing the battery chemistry the agencies actually used, neither CARB nor the public can fully evaluate the cost estimates of the Proposal.

63. As described above in paragraphs 54-55 and in CARB's FOIA request (Exh. A, p. 3), NHTSA and EPA have not clearly specified which battery chemistry they used in developing the Proposal.

64. Moreover, the version of BatPaC appears to have varied throughout the regulatory process. For instance, EPA used battery chemistry NMC622 in its modeling for the 2017 Final Determination under EPA's Midterm Evaluation regulations. EPA, *Proposed Determination of the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation: Technical Support Document* 2-108 (2016); EPA, NHTSA, & CARB, *Draft Technical Assessment Report* 5-104 to 5-105 (2016).

65. Yet, NHTSA and EPA did not use battery chemistry NMC622 in developing the Proposal.

66. Nor do EPA and NHTSA appear to have considered more advanced battery chemistries, although this cannot be determined with certainty without the records sought by CARB's request number 1. For instance, NHTSA and EPA did not use battery chemistry NMC811, which is an advancement from NMC622, in developing the Proposal.

67. NHTSA and EPA did not consider incorporating battery chemistry NMC811 into the BatPaC version the agencies used for the Proposal.

68. NHTSA and EPA did not request ANL incorporate battery chemistry NMC811 into the BatPaC version the agencies used for the Proposal.

69. NHTSA and EPA also have not disclosed the BatPaC cost inputs they used in developing the Proposal. Because these costs are a variable input subject to change by the user, CARB and the public cannot know upon what cost assumptions the Proposal is based unless the agencies produce that information.

70. The records sought by subparts (a) and (c) of CARB's first request were relied upon by NHTSA and EPA in developing the Proposal. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases. NHTSA's failure to

address CARB's request for this information constitutes a failure to make and convey a determination as required by FOIA.

71. Subpart (b) of CARB's request sought inputs EPA and NHTSA used to run BatPaC for the Proposal, including "the full battery sizes, in kilowatt-hours (kWh), battery pack configuration, and costs used for each vehicle iteration in the CAFE model." CARB's request explained that battery pack configuration would include the number of cells and the electrical topology of how those cells are arranged in the battery pack.

72. As indicated in CARB's request, EPA had made its BatPaC input files publicly available in at least one previous analysis of GHG emissions standards.

73. In responding to subpart (b) of CARB's first request, NHTSA failed to provide all the files or data the agencies input into BatPaC, and failed to provide any legal basis for withholding them or to address the withholding in any way. NHTSA's failure to address CARB's request for this information constitutes a failure to make and convey a determination as required by FOIA.

74. In responding to subpart (b) of CARB's first request, NHTSA also failed to provide battery pack configurations, stating that "there are no battery pack configurations." Exh. C, p. 2. This statement cannot be correct, as battery pack configurations are a critical input for BatPaC; the model cannot produce battery cost estimates without inputting battery pack configurations.

75. The records sought by subpart (b) of CARB's first request were relied upon by NHTSA and EPA in developing the Proposal. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases.

CARB's Request No. 2

76. The records known to be related to CARB's second request are vehicle registration data obtained from IHS Markit (formerly R.L. Polk & Company) as well as aggregations and

modifications of this data prepared by NHTSA. In essence, these records concern which vehicles are present within the national auto market; they are critical to understand and forecast how the national vehicle fleet composition changes with emissions and fuel economy standards.

77. The records actually sought by CARB pursuant to its second request are the aforementioned aggregations and modifications of vehicle registration data obtained from IHS Markit that were prepared by NHTSA.

78. Despite having relied on the records sought by CARB's second request in developing the Proposal, NHTSA and EPA have not included them in the rulemaking docket or otherwise made them available to the public.

79. In responding to CARB's request number 2, NHTSA determined that it would not provide the requested records on the asserted basis that they are "related to trade secrets and commercial or financial information pursuant to FOIA Exemption 4. 49 U.S.C. § 552(b)(4)." Exh. C, p. 2.

80. IHS Markit permits aggregations of its data to be published, provided the purchaser of the data has also acquired publication rights.

81. NHTSA purchased data related to CARB's second request from IHS Markit.

82. NHTSA could acquire the right to release the data related to CARB's second request to the public, at least in aggregated form, if it has not already acquired the right to do so.

83. EPA purchased data related to CARB's second request from IHS Markit.

84. EPA could acquire the right to release the data related to CARB's second request to the public, at least in aggregated form, if it has not already acquired the right to do so.

85. Neither NHTSA nor EPA have made any attempt to segregate and produce non-exempt records responsive to CARB's second request.

86. Neither NHTSA nor EPA have notified IHS Markit (or any other submitter) of CARB's request number 2 for aggregations and modifications of IHS Markit's data prepared by NHTSA.

87. Neither NHTSA nor EPA have sought or obtained any written objections to release of its aggregations and modifications of IHS Markit's data that are responsive to CARB's second request.

88. The records sought by CARB's second request were relied upon by NHTSA and EPA in developing the Proposal. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases.

CARB's Request No. 4

89. CARB's fourth request sought a report of analysis of statistical significance (including standard errors) concerning the sales model NHTSA developed, and on which the EPA and NHTSA relied, for the Proposal. This sales model is critical because it projects how newer, cleaner vehicles will enter the market and the pace at which consumers buy them (or retain older vehicles). The model has not, however, been fully tested, and the agencies did not document critical statistical values accompanying the model, which are necessary to fully evaluate the model and its robustness.

90. In responding to CARB's request number 4, NHTSA failed to provide the requested report, including the variable stationarity and co-integration indicators. NHTSA failed to provide any legal basis for withholding it or address the withholding in any way, instead referring CARB to a table of data related to the report.

91. Without the requested records, the model's ability to provide reasonable and realistic predictions cannot be fully validated.

92. NHTSA's failure to address CARB's request number 4 for this record constitutes a failure to make and convey a determination as required by FOIA.

93. The records sought by CARB's fourth request were relied upon by NHTSA and EPA in developing the Proposal. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases.

CARB's Request No. 8

94. CARB's request number 8 sought records pertaining to relative impacts – including fatalities – the agencies claimed would occur under the existing federal standards and under the Proposal. The agencies relied heavily on their fatality projections in setting these standards and frequently discussed them in the Proposal, so a full understanding of this information is of considerable importance to the public.

95. In responding to CARB's request number 8, NHTSA determined that it would not provide the requested records on the asserted basis that they are "related to pre-decisional agency deliberation, opinions or recommendations pursuant to FOIA Exemption 5. 5 U.S.C. § 552(b)(5)." Exh. C., p. 6.

96. The records sought by CARB pursuant to its eighth request that NHTSA has withheld are a detailed statistical analysis, including a logistic regression derivation, of NHTSA's point estimates for the increase in fatalities per hundred pounds of mass reduction over a constant footprint based on historical crash data, for model years 2004-2011 and calendar years 2006-2012.

97. The decision to which the records sought by CARB pursuant to its eighth request are relevant (the Proposal) has already been made by NHTSA, as the Proposal has been noticed and

presented for public comment. NHTSA has not identified any other contemplated decision to which these records are relevant.

98. The records sought by CARB pursuant to its eighth request are factual in nature, and do not contain suggestions or recommendations.

99. In developing the regulations that NHTSA and EPA have proposed to replace with the Proposal, the agencies made publicly available data equivalent to that sought by CARB's eighth request as part of the rulemaking docket.

100. Neither NHTSA nor EPA have made any attempt to segregate and produce non-exempt records responsive to CARB's eighth request.

101. The records sought by CARB's eighth request were relied upon by NHTSA and EPA in developing the Proposal. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases.

CARB's Request No. 9

102. The records known to be related to CARB's ninth request are data used by NHTSA and EPA, including data obtained from IHS Markit and aggregations and modifications of this data prepared by NHTSA, to derive a statistical model that predicts fatality rates by vehicle age and model year. This data is needed so that CARB and the public can determine whether the agencies correctly derived fatality estimates and verify that those estimates are well-supported.

103. The records actually sought by CARB pursuant to its ninth request are NHTSA's aforementioned aggregations and modifications of the data obtained from IHS Markit as well as any other data used to derive the agencies' estimated fatality rates.

104. Despite having relied on the records sought by CARB's ninth request in developing the Proposal, NHTSA and EPA have not included these records in the rulemaking docket or otherwise made them available to the public.

105. In responding to CARB's request number 9, NHTSA determined that it would not provide the requested records on the asserted basis that they are "related to trade secrets and commercial or financial information pursuant to FOIA Exemption 4. 49 U.S.C. § 552(b)(4)." Exh. C, p. 6.

106. NHTSA purchased data related to CARB's ninth request from IHS Markit.

107. NHTSA could acquire the right to release the data related to CARB's ninth request to the public, at least in aggregated form, if it has not already acquired the right to do so.

108. EPA purchased data related to CARB's ninth request from IHS Markit.

109. EPA could acquire the right to release the data related to CARB's ninth request to the public, at least in aggregated form, if it has not already acquired the right to do so.

110. Neither NHTSA nor EPA have made any attempt to segregate and produce non-exempt records responsive to CARB's ninth request.

111. Neither NHTSA nor EPA have notified IHS Markit (or any other submitter) of CARB's request number 9 for aggregations and modifications of IHS Markit's data prepared by NHTSA.

112. Neither NHTSA nor EPA have sought or obtained any written objections to release of its aggregations and modifications of IHS Markit's data that are responsive to CARB's ninth request.

113. The records sought by CARB's ninth request were relied upon by NHTSA and EPA in developing the Proposal. Without this information, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases.

CARB's Request No. 12

114. CARBS's twelfth request sought records comprising and pertaining to the Advanced Light-Duty Powertrain and Hybrid Analysis ("ALPHA") and the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles ("OMEGA"), which are analytical models developed by EPA specifically to forecast automaker response to and compliance with emissions standards. EPA used ALPHA and OMEGA in developing the existing regulations that EPA has now proposed to replace. These models thus are of great value to the public in testing and understanding the Proposal.

115. In a departure from prior practice, the Proposal was not developed using either ALPHA or OMEGA.

116. Neither EPA nor NHTSA is presently using ALPHA in developing regulatory proposals.

117. Neither EPA nor NHTSA is presently using OMEGA in developing regulatory proposals.

118. In responding to CARB's request number 12, NHTSA failed to provide the requested records and failed to provide any legal basis for withholding them, instead improperly referring the request to EPA and declining to make and convey a determination as required by FOIA. EPA has also failed to make a determination and provide its current modelling systems to the public.

119. EPA intermittently revises OMEGA source code.

120. EPA intermittently revises OMEGA input data.

121. EPA last publicly released the OMEGA source code in July 2016.

122. EPA has revised the OMEGA source code since the July 2016 public release.

123. The current OMEGA source code is not publicly available.

124. EPA last publicly released significant OMEGA input data in November 2016. EPA released a limited set of input files in April 2017 and October 2018, but it did not release a complete set of input data at those times.

125. Since the November 2016 public release of input data, EPA revised some OMEGA input data in addition to the data released in April 2017 and October 2018.

126. EPA utilized OMEGA in preparing an April 2018 presentation for OIRA regarding NHTSA's draft of the Proposal.

127. The OMEGA version that EPA utilized to prepare this April 2018 presentation was not the same version as the OMEGA model publicly released in July 2016.

128. EPA intermittently revises ALPHA source code.

129. EPA intermittently revises ALPHA input data.

130. EPA last publicly released the ALPHA source code in January 2017.

131. EPA has revised the ALPHA source code since the January 2017 public release.

132. The current ALPHA source code is not publicly available.

133. EPA utilized ALPHA in preparing an April 2018 presentation for OIRA regarding NHTSA's draft of the Proposal.

134. The ALPHA version that EPA utilized to prepare this April 2018 presentation was not the same version as the ALPHA model publicly released in January 2017.

135. EPA's April 2018 presentation for OIRA included EPA's critique of NHTSA's CAFE model.

136. EPA has previously stated that it could not conclude that the CAFE model reflects the conclusions of "research performed by EPA over the last five years."

137. "Research performed by EPA over the last five years" includes updates made to the ALPHA and OMEGA models since 2016.

138. Without the records sought by CARB's twelfth request, CARB was unable to fully evaluate and comment on the Proposal and its asserted bases or to fully understand EPA's April 2018 critique of NHTSA's modeling.

CARB Has Exhausted All Administrative Remedies

EPA Exhaustion

139. In a letter sent on December 19, 2018, CARB notified EPA that it had failed to comply with the time limit under FOIA for making and conveying determinations as to CARB's requests.

140. As of the date that this complaint was filed, CARB has not received a determination from EPA regarding any of CARB's FOIA requests.

141. As of the date that this complaint was filed, EPA has not made or conveyed a determination regarding any of CARB's FOIA requests.

142. CARB has exhausted all administrative remedies as to its requests to EPA because EPA has failed to comply with the time limit under FOIA for making and conveying determinations as to CARB's requests.

NHTSA Exhaustion

143. As of the date that this complaint was filed, CARB has not received a determination from NHTSA regarding CARB's FOIA requests numbers 1(b), 4, and 12.

144. As of the date that this complaint was filed, NHTSA has not made or conveyed a determination regarding CARB's FOIA requests numbers 1(b), 4, and 12.

145. By letter dated December 19, 2018, CARB administratively appealed NHTSA's responses to CARB's request numbers 1, 2, 4, 8, 9, and 12. A true and correct copy of this letter is attached hereto as **Exhibit D**.

146. CARB's appeal to NHTSA complied in all respects with all applicable laws and agency regulations, including but not limited to 5 U.S.C. § 552 and NHTSA's regulations implementing FOIA.

147. As of the date that this complaint was filed, CARB has not received a response from NHTSA regarding CARB's appeal.

148. CARB has exhausted all administrative remedies as to its requests to NHTSA because NHTSA has failed to comply with the time limit under FOIA for making and conveying determinations as to some of CARB's requests, and has failed to comply with the time limit under FOIA for responding to CARB's appeal.

149. EPA and NHTSA continue to move ahead to finalize the Proposal, even though the public has not been provided critical information required to evaluate it fully.

CLAIMS FOR RELIEF

First Claim – EPA's Violation of FOIA

150. Paragraphs 1-149, inclusive, are realleged and incorporated herein by reference.

151. EPA's failure to make and convey determinations as to CARB's September 11, 2018 requests for records violates FOIA (5 U.S.C. §§ 552(a)(6)(A)(i) and 552(a)(6)(B)(i)) and EPA's own corresponding regulations (40 C.F.R. § 2.104(a) and (d)).

152. CARB has a statutory right to have EPA process its requests in a manner that complies with FOIA. 5 U.S.C. § 552(a)(3). EPA violated CARB's rights in this regard when it unlawfully failed to undertake a search that is reasonably calculated to locate all records that are responsive to CARB's September 11, 2018 requests for records numbers 1-11.

153. EPA's failure to produce all non-exempt records (or reasonably segregable non-exempt portions of any responsive records deemed to be exempt) responsive to CARB's September 11, 2018 requests for records violates FOIA (5 U.S.C. § 552(a)(3)(A)).

Second Claim – NHTSA's Violation of FOIA

154. Paragraphs 1-153, inclusive, are realleged and incorporated herein by reference.

155. NHTSA's failure to make and convey determinations as to CARB's September 11, 2018 requests for records numbers 1(b), 4, and 12 violates FOIA (5 U.S.C. §§ 552(a)(6)(A)(i) and 552(a)(6)(B)(i)), and NHTSA's own corresponding regulations (49 C.F.R. § 7.31(a)(2)).

156. NHTSA's failure to respond to CARB's December 19, 2018 appeal of NHTSA's October 23, 2018 response to CARB's September 11, 2018 letter requesting records violates FOIA (5 U.S.C. §§ 552(a)(6)(A)(ii) and 552(a)(6)(B)(i)), and NHTSA's own corresponding regulations (49 C.F.R. § 7.33(a)(2)).

157. CARB has a statutory right to have NHTSA process its requests in a manner that complies with FOIA. 5 U.S.C. § 552(a)(3). NHTSA violated CARB's rights in this regard when it unlawfully failed to undertake a search that is reasonably calculated to locate all records that are responsive to CARB's September 11, 2018 requests for records numbers 1(b), 4, and 12.

158. NHTSA's failure to produce all non-exempt records (or reasonably segregable non-exempt portions of any responsive records deemed to be exempt) responsive to CARB's September 11, 2018 requests for records numbers 1(a), 1(c), and 4 violates FOIA (5 U.S.C. § 552(a)(3)(A) and NHTSA's own corresponding regulations (49 C.F.R. § 7.23(b), (d)).

159. NHTSA's withholding of records responsive to CARB's September 11, 2018 requests numbers 2, 8, and 9 based on Exemptions 4 and 5 was improper and violates FOIA (5 U.S.C. §§ 552(a)(3)(A) and 552(b), and NHTSA's own corresponding regulations (49 C.F.R. § 7.23(b), (d)).

PRAYER FOR RELIEF

WHEREFORE, CARB respectfully requests that the Court grant relief as follows:

1. Declare that EPA's and NHTSA's failures to timely make and convey determinations regarding CARB's respective FOIA requests are unlawful;

2. Declare that NHTSA's failure to timely respond to CARB's appeal is unlawful;

3. Declare that EPA's and NHTSA's failures to produce non-exempt records (and reasonably segregable non-exempt portions of any responsive records deemed to be exempt) responsive to CARB's respective FOIA requests are unlawful;

4. Order EPA and NHTSA to each immediately conduct searches that are reasonably calculated to locate all records responsive to CARB's requests;

5. Order EPA and NHTSA to each make available to CARB all non-exempt agency records that are responsive to CARB's requests, as well as all reasonably segregable non-exempt portions of any responsive records deemed to be exempt, on a rolling basis as the records are located, without charging search or copying fees;

6. Order EPA and NHTSA to each complete their respective productions of records to CARB by a date certain;

7. Order EPA and NHTSA to each produce indexes identifying any responsive agency records (or portions thereof) being withheld as exempt from disclosure, and the basis for the withholding, promptly upon determining to withhold such records;

8. Retain jurisdiction over this action to rule on any assertions by EPA or NHTSA that any responsive records, in whole or in part, are exempt from disclosure;

9. Award CARB its costs and reasonable attorneys' fees in this action as provided by 5 U.S.C. § 552(a)(4)(E); and

10. For such other relief as the Court may deem just and proper.

Dated: April 5, 2019

Respectfully submitted,

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/s/ Ryan R. Hoffman

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INDEX TO EXHIBITS

Exhibit A – CARB's September 11, 2018 FOIA request letter to EPA and NHTSA

Exhibit B – EPA's October 23, 2018 response letter to CARB

Exhibit C – NHTSA's October 23, 2018 response letter to CARB

Exhibit D – CARB's December 19, 2018 appeal letter to NHTSA

Exhibit A

CALIFORNIA
AIR RESOURCES BOARD

Mary D. Nichols, Chair
Matthew Rodriquez, CalEPA Secretary
Edmund G. Brown Jr., Governor

September 11, 2018

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Office of the Administrator
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Heidi King
Deputy Administrator
National Highway Traffic Safety Administration
United States Department of Transportation
1200 New Jersey Avenue, SE
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RE: REQUEST FOR DOCUMENTS IN SUPPORT OF:

REQUEST FOR EXTENSION OF COMMENT PERIOD AND ADDITIONAL PUBLIC HEARINGS REGARDING JOINT PROPOSED RULE TO ROLL BACK VEHICLE GREENHOUSE GAS EMISSIONS AND CORPORATE AVERAGE FUEL ECONOMY STANDARDS FOR MODEL YEARS 2021-2026 LIGHT-DUTY VEHICLES

Docket IDs: NHTSA-2018-0067 / EPA-HQ-OAR-2018-0283

Dear Acting Administrator Wheeler and Deputy Administrator King:

On August 27, 2018, the California Air Resources Board (CARB), along with the Attorneys General of the State of California and several other states, and several state agencies, requested that the United States Environmental Protection Agency (U.S. EPA) and the National Highway Traffic Safety Administration (NHTSA) extend the comment periods for the joint proposed rule referenced above,[1] and the associated draft Environmental Impact Statement. The proposal departs from legal precedent and from the factual record as CARB understands it, and needs careful evaluation. CARB writes separately in its capacity as a co-regulator with U.S. EPA, specifically recognized in the Clean Air Act to protect public health from motor vehicle air pollution and engines, to request information necessary to evaluate the proposal.

[1] Published at 83 Fed.Reg. 42,986 (August 24, 2018).

NHTSA and U.S. EPA must identify and make available the technical studies and data on which it is relying to propose these rules.[2] As we wrote in the request for a reasonable comment period, the modeling, assumptions, and analysis underlying these proposals are dramatically different from that of previous, similar rulemakings. The explanation for this proposal, despite encompassing hundreds of pages, is not clearly presented or adequately supported, as elaborated on below. Further, unlike previous federal proposals for regulations of emissions from motor vehicles, CARB has not been involved in discussions developing the proposal, contrary to prior commitments from U.S. EPA and NHTSA to collaborate with California on these standards, and past practice developing motor vehicle emission standards.[3] Thus, CARB is unable fully to evaluate the federal proposal based on the information made available to date and other stakeholders are likely to encounter similar difficulties.

Under the Freedom of Information Act (FOIA) as well as the Administrative Procedures Act, CARB requests U.S. EPA and NHTSA make the information identified below publicly available in the dockets for the proposed rule within 20 days of your receipt of this letter. Please make the requested information available on a rolling basis as soon as it is identified, without awaiting identification or production of other requested information. Absent the requested information, along with the requested extensions to the comment periods for the proposal and associated draft Environmental Impact Statement, neither CARB nor other interested persons are being provided a reasonable opportunity to evaluate the proposed rule and its asserted basis.

If any of the requested information is asserted to be exempt from disclosure, please provide an index of those records as required by *Vaughn v. Rosen*, 484 F.2d 820 (D.C. Cir. 1973). This index should describe each document claimed as exempt from disclosure with sufficient information to allow a reasoned judgment as to whether it is properly exempt under FOIA.[4]

1. Information about the models and data used to estimate battery costs for electrified vehicles.

    a. The proposal and the Preliminary Regulatory Impact Analysis (PRIA), NHTSA-2018-0067-1972, reference the Argonne National Laboratories' (ANL) website for the BatPaC model for estimating battery costs for vehicles, and state that the agencies used "an up-to-date version" of the model, but do not identify the version. (*See*, e.g., 83 Fed.Reg. 42, 985,43,002 (August 24,

[2] *Connecticut Light & Power Co. v. Nuclear Regulatory Com.*, 673 F.2d 525, 530-531 (D.C. Cir. 1982); 42 U.S.C. § 7607(d)(3) [notice of proposed rulemaking "shall be accompanied by a statement of its basis and purpose" including "the factual data on which the proposed rule is based; the methodology used in obtaining and in analyzing the data; and the major legal interpretations and policy considerations underlying the proposed rule."].

[3] See, e.g., 77 Fed.Reg. 62,624, 62,632, 62,784-62,785 (Oct. 15, 2012) [discussing coordination with CARB to develop the standards at issue and for changes to standards].

[4] *Founding Church of Scientology of Washington, D.C. v. Bell*, 603 F.2d 945, 949 (D.C. Cir. 1979).

2018).) U.S. EPA and NHTSA have posted to the dockets for this action a document describing how BatPaC was developed, but this document appears to be from 2012. It does not state which version of BatPaC NHTSA and U.S. EPA used to estimate battery costs. See "Modeling the Performance and Cost of Lithium-Ion Batteries for Electric-Drive Vehicles, Argonne National Laboratory, ANL-12/55," NHTSA Docket ID #: NHTSA-2018-0067-1692; EPA Docket ID#: EPA-HQ-OAR-2018-0283-0764.

b. U.S. EPA and NHTSA should make available the information specifying the full battery sizes, in kilowatt-hours (kWh), battery pack configuration, and costs used for each vehicle iteration in the CAFE model. See PRIA, Electrification Technologies, Technology Overview, section 6.3.8.1, p. 357. The PRIA states that NHTSA posted ANL vehicle files that have battery pack sizes and costs for each vehicle, but there is no additional information about battery pack configuration (e.g., the number of cells, and the electrical topology of how those cells are arranged in the battery pack), nor do they directly reference where the files are posted. NHTSA and U.S. EPA have not posted the BatPaC model file(s) that were used. ANL cost and battery size data referenced in the PRIA, p. 358, footnote 325, but the footnote refers to a docket identification number that is not available. Previously, in support of the draft Technical Assessment Report and Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Proposed Determination), EPA-420-R-16-020, November 2016, U.S. EPA posted the BatPaC files that it used.

c. The proposal and PRIA provide conflicting information about which battery chemistries the agencies considered. For instance, the proposal and PRIA refer to NMC441-Gr chemistry for both plug-in hybrid-electric vehicles and battery-electric vehicles, but the ANL summary refers to NMC333. See, e.g., PRIA, pp. 372, Table 6-27, 373 ["We selected NMC441 as choice of chemistry for PHEVs and BEVs. NMC441 more suitable for high energy batteries capable of discharge rates."]. The Excel file titled "ANL-Summary of Main Component Performance Assumptions NPRM" has a tab labeled 'Description – BatPac' with the same table listed as in the PRIA, except the chemistry listed for PHEVs and BEVs is NMC333-G instead of NMC441-Gr. See Docket ID Nos. EPA-HQ-OAR-2018-0283-0054 and NHTSA-2018-0067-0003. The proposal and PRIA do not directly reference this file.

This information is required to replicate and evaluate whether the modeling underlying the proposal is appropriate, considering the various vehicle and technology types.

2. The PRIA references Polk registration data, including survival rates aggregated by model year, calendar year, and body style. These data are needed to verify the

coefficients of the new model predictions for vehicle retirement (scrappage), but have not been made available. See, e.g., PRIA at pp. 1008, 1014, 1023, fig. 8-23, 1025, fig. 8-24, and 1027, fig. 8-25.

3. New vehicle sales and price data referenced in the proposal. This includes:

    a. Data provided by the National Automobile Dealers Association (NADA) and others. See 83 Fed.Reg. at 43,095; PRIA, pp. 1017-1018.

    b. Data describing historical transaction prices, and quarterly new vehicle sales data used to develop the dynamic new sales model. See PRIA, pp. 954-961.

    c. Economic data used to develop the autoregressive distributed-lag (ARDL) model that predicts new vehicle sales and is used in the CAFE model. See 83 Fed.Reg. at 43,074.

This data is necessary to evaluate the proposal's predictions for fleet population, sales, and fatalities.

4. Report of analysis of the standard errors and significance of the ARDL sales model coefficients, F-statistic and R^2 of the overall model, and variable stationarity and co-integration indicators. This information is needed to verify the statistical significance and errors of the coefficients used in the Volpe model. The coefficients for the ADRL sales model listed on p. 957, Table 8-1 of the PRIA, are not consistent with those implemented in the model. See CAFE Model Documentation, PRIA, p. 78, Table 17, available at: https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system ["2018 NPRM for Model Years 2021-2026 Passenger Cars and Light Trucks," Model Documentation].

5. The coefficients for the dynamic fleet share equation described in the CAFE Model Documentation on p. 79. These are not listed anywhere. Additionally, according to the PRIA on p. 955, the model was based on EIA's National Energy Modeling System (NEMS), but no reference is provided for the NEMS model. This information is necessary to evaluate the equation used in the model.

6. Cited reference Anders Lie, Swedish Transport Administration, Peer Review of NHTSA's November 2011 Preliminary Report "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 2000-2007 Passenger Cars and LTVs." This document reviews the 2011 study by Kahane that NHTSA relies upon, regarding the effects of mass reduction on fatality risk. See 83 Fed.Reg. at 43,112, n. 307. It is also item 0035 in the NHTSA-2010-0152 docket. However, attempting to access the document on the docket website results in a server error. See https://www.regulations.gov/document?D=NHTSA-2010-0152-0035, attempted August 28, 2018.

7. CAFE model output file Annual Societal Effects Report. See CAFE Model Documentation, *infra*. This data describes predicted fatalities by regulatory class, body style, and weight threshold of vehicle. This detailed information is necessary to evaluate the fatalities computation in the CAFE model.

8. The agencies' detailed explanation and derivation of their point estimates for the increase in fatalities per hundred pounds of mass reduction over a constant footprint based on historical crash data, for model years 2004-2011 and calendar years 2006-2012. Previously, these details were provided in a separate report such as the "2016 Puckett and Kindelberger report." No such report is available this time. The PRIA only provides a summary table of the results of this analysis, yet states an "updated analysis" exists. See PRIA, p. 1357, section 11.4.

9. Data used by the agencies to derive the new statistical model that predicts fatality rates by vehicle age. See PRIA Table 11-21, p. 1397. The coefficients of the model are provided, but without the data it is not possible to evaluate whether the coefficients were properly derived. Additionally, the coefficients provided in the PRIA are different (significant digits and sign changes) than those identified in the actual model source code (which are also commented out such that they are non-functional) and are different from the model year based coefficients used in the input files. This renders unclear what coefficients the analysis in the NPRM is based upon.

10. So-called "off model" analytical tools the agencies used to summarize and tabulate the results of the CAFE model. See 83 Fed.Reg. at 43,256, n. 595. These tools and calculations analyzed various components of social and private costs and benefits, as well as other factors. These analytical tools are supposedly available on NHTSA's website but we have not located them.

11. Input files used for the Autonomie model for various engine technologies that U.S. EPA and NHTSA rely on to calculate the efficiency improvements of various technologies, such as turbocharging and high-compression-ratio (Atkinson) engines. The input and output files are required to be able to understand what U.S. EPA and NHTSA relied on as representative of these engine technologies, and to confirm correct efficiency levels were calculated for the various technologies, considering the current state of the art.

12. Modeling tools developed by U.S. EPA including:

    a. All files necessary to utilize - with the Advanced Light-Duty Powertrain and Hybrid Analysis (ALPHA) and the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles (OMEGA) - the response surface equations developed by U.S. EPA as identified or referenced in: "Peer Review of EPA's Response Surface Equation Report" (Docket ID No. EPA-HQ-OAR-2018-0283-0025); and SAE paper 2018-01-1273 authored by U.S.

EPA (Docket ID No. EPA-HQ-OAR-2018-0283-0028).

b. All new or modified input files, source code, and executable files for U.S. EPA's OMEGA model developed since the release of the Proposed Determination in late 2016.

c. All current and new input files, source code, and executable files for ALPHA used for the Proposed Determination in late 2016 and/or modified since then.

d. All current and new pre-processors and their inputs used for the Proposed Determination in late 2016 or modified since then to categorize, sort, and rank technology packages and costs for use with OMEGA.

We understand that these models evaluate the cost and effectiveness of available technologies to meet greenhouse gas emissions targets. We also understand that NHTSA and U.S. EPA have previously relied on these models. These files and data are thus necessary for CARB and the public to be able to verify the agencies' claims that that the CAFE model has advantages to the U.S. EPA models and to consider the relevance and make sense of the docketed materials, including the peer review and SAE paper identified above.

It is unreasonable for U.S. EPA and NHTSA to expect interested persons to evaluate the massive changes in outcomes, models, approaches, inputs, and analyses in a 60-day comment period (and in even less time for the draft environmental impact statement). This is especially apparent when not even CARB, despite its considerable expertise in these matters, is able to perform a complete review.

CARB also requests a waiver of searching and copying fees for this request. CARB is a non-commercial, governmental organization, and should not be subject to fees for this request. The information requested is likely to significantly contribute to public understanding of NHTSA and U.S. EPA's proposed rules. CARB is a co-regulator of motor vehicle emissions with U.S. EPA, and has coordinated with U.S. EPA and NHTSA on the regulations that the agencies are proposing to change. CARB has a significant interest in the proposed action, and the requested information will enable CARB to evaluate the potential impacts of the proposed rule.

Under FOIA, agencies must waive such fees in instances like this where disclosure is likely to contribute to public understanding of the operations and activities of the government and disclosure is not primarily in the commercial interest of the requester.[5]

You may contact me at (916) 323-9608 or ellen.peter@arb.ca.gov, or Senior Attorney Pippin C. Brehler at (916) 445-8239 or pippin.brehler@arb.ca.gov, to discuss any of these issues. If this request for a fee waiver is denied, please contact Mr. Brehler before

[5] *See* 5 U.S.C. § 552(a)(4)(A)(iii); 40 C.F.R. §2.107(1)(1) [U.S. EPA adoption of these requirements].

incurring any costs in responding to this request. We look forward to receiving your response to these requests within twenty business days, as required by FOIA.

Sincerely,

Ellen M. Peter
Chief Counsel
Executive Office
California Air Resources Board

CC:

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National Freedom of Information Officer
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1200 Pennsylvania Ave., NW (2822T)
Washington, D.C. 20460

James Tamm
Office of Rulemaking,
Fuel Economy Division
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE
Washington, D.C. 20590

Freedom of Information Act Public Liaison
National Highway Traffic Safety Administration
1200 New Jersey Ave., SE
West Building, 41-304
Washington, D.C. 20590

Exhibit B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

October 23, 2018

OFFICE OF
AIR AND RADIATION

Ms. Ellen Peter
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Re: Freedom of Information Act (FOIA) Request EPA-HQ-2018-011521

Dear Ms. Peter:

The Environmental Protection Agency (EPA) is responding to your September 11, 2018, FOIA request that was submitted to FOIAonline. Your request seeks records from both EPA and the National Highway Traffic Safety Administration (NHTSA) related to the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule that amends the existing Corporate Average Fuel Economy (CAFE) standards. NHTSA will respond to parts one though 11 of your request under FOIA ES18-003395. EPA is responding to part 12 of your request under FOIA number EPA-HQ-2018-011521. Part 12 of your request sought:

12. *Modeling tools developed by the EPA including:*

    a. *All files necessary to utilize – with the Advanced Light Duty Powertrain and Hybrid Analysis (ALPHA) and the Optimization Model for reducing Emission of Greenhouse gases from Automobiles (OMEGA) – the response surface equations developed by the EPA as identified or referenced in "Peer Review of EPA's Response Surface Equation Report" and SAE paper 2018-01-1273.*

    b. *All new or modified input files, source code, and executable files for the EPA's OMEGA model developed since the release of the Proposed Determination in late 2016.*

    c. *All current and new input files, source code, and executable files for ALPHA used for the Proposed Determination in late 2016 and/or modified since then.*

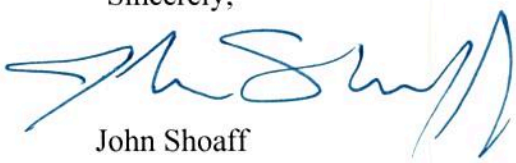
    d. *All current and new pre-processors and their inputs used for the Proposed Determination in late 2016 or modified since then to categorize, sort, and rank technology packages and costs for use with OMEGA.*

Response: EPA's last publicly available version of the ALPHA and OMEGA model is on the EPA web site (and MTE docket) and dated November 2016 (released as part of the Proposed Determination). While EPA has draft updates to the OMEGA and ALPHA models since November 2016, these updates have not been made available to the public. In any event, the ALPHA and OMEGA models were not used to develop the proposed rule.

EPA is reviewing records that may be responsive to this request to determine whether they are appropriate for production, or whether they should be withheld pursuant to statutory exemptions to disclosure. EPA will respond to this portion of the request under FOIA number EPA-HQ-2018-011521.

Once EPA makes a determination under FOIA number EPA-HQ-2018-011521, you will be provided appeal rights accordingly. If you have questions regarding the status of this request, please contact Jonathan Lubetsky at lubetsky.jonathan@epa.gov.

Sincerely,



John Shoaff
Director
Office of Air Policy and Program Support

Exhibit C

U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

October 23, 2018

Ms. Ellen Peter
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Via email to: ellen.peter@arb.ca.gov

Re: Freedom of Information Act (FOIA) Request ES18-003395

Dear Ms. Peter:

This responds to your September 11, 2018 FOIA request that was submitted to www.regulations.gov. Your request seeks records related to the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule that amends the existing Corporate Average Fuel Economy (CAFE) standards.

Information related to your FOIA request concerning the SAFE Vehicles Rule is publicly available on NHTSA's website at https://www.nhtsa.gov/corporate-average-fuel-economy/safe. The website and links available there have data related to the 2018 Notice of Proposed Rulemaking for Model Years 2021-2026 Passenger Cars and Light Trucks (proposal) that are responsive to your request. To assist you in locating the publicly available records that you seek, please see the responses to the twelve items listed in your request below:

1. Models and data used to estimate battery costs for electrified vehicles:

    a. Information regarding the BatPaC that the NTHSA and EPA used to estimate battery costs.

    Response: The BatPaC version 3.0 model was used to estimate battery costs. NHTSA does not maintain the BatPaC model. The model is maintained by the U.S. Department of Energy's Argonne National Laboratories (ANL). To obtain a copy of the BatPaC version 3.0 model, please contact ANL directly.

    b. Information specifying the full battery sizes, in kilowatt-hours (kWh), battery pack configuration, and costs used for each vehicle iteration in the CAFE model.

    Response: The full battery sizes in kWh and costs are available in files in the docket for each "tech class." Information for peak battery power, battery total energy in kWh, and battery pack direct manufacturing cost can be found in

columns AN-AR for each of the files listed below. Please note that there are no battery pack configurations.

ANL Compact Non Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1855

ANL Compact Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1856

ANL Small SUV NonPerfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1486

ANL Small SUV Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1485

ANL Pickup NonPerfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1661

ANL Pickup Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1487

ANL Midsize SUV Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1662

ANL Midsize SUV NonPerfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1492

ANL Midsize NonPerfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1494

ANL Midsize Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1663

c. Information regarding the battery chemistries referenced in the proposal and Preliminary Regulatory Impact Analysis.

Response: NHTSA and EPA used the battery chemistries associated with the BatPaC version 3.0 model.

2. Polk registration data, including survival rates aggregated by model year, calendar year, and body style.

Response: The Polk registration data is proprietary information and is being withheld in its entirety from disclosure because it is related to trade secrets and commercial or financial information pursuant to FOIA Exemption 4. 49 U.S.C. § 552(b)(4). To

purchase the series of National Vehicle Population Profile (NVPP) datasets, please contact IHS Markit (formerly R.L. Polk & Company) directly.

3. New vehicle sales and price data referenced in the proposal that includes:

   a. Data provided by the National Automobile Dealers Association and others.

      Response: The data provided by the National Automobile Dealers Association is enclosed as Attachment A.

   b. Data describing historical transaction prices, and quarterly new vehicle sales data used to develop the dynamic new sales model.

      Response: The data is provided in the chart below.

Series	Source	Description
GDP.Growth.Rate	FRED	Series: A191RL1Q225SBEA, Real GDP, percent change from preceding period, quarterly, SAAR.
LD.Sales.Adj	FRED/BEA	Light Weight Vehicle Sales: Autos and Light Trucks (ALTSALES), millions of units, quarterly (average) SAAR, available at: https://fred.stlouisfed.org/series/ALTSALES#0; years prior to 1976 developed manually from BEA data using BEA_Sales_gap_hist, available at: https://www.bea.gov/national/xls/gap_hist.xlsx
NADA.Price.Adj	NADA/BEA	Annual (real dollar) transaction price, 1967 - 2016, transformed to quarterly price by using average per-vehicle expenditure variation from BEA to introduce quarterly variation into the NADA average annual price, normalized by quarterly sales to ensure annual average matched NADA annual series.
Labor.Participation	BLS	Derived from BLS series ID: LNS12500000, monthly data averaged by quarter to produce quarterly average full-time employed persons (in thousands) age 16 and over.

c. Economic data used to develop the autoregressive distributed-lag (ARDL) model that predicts new vehicle sales and is used in the CAFE model.

Response: Please see Attachment B.

4. Report of analysis of the standard errors and significance of the ARDL sales model coefficients, F-statistic and R^2 of the overall model, and variable stationarity and cointegration indicators. The coefficients for the ADRL sales model listed on page 957, Table 8-1 of the PRIA, are not consistent with those implemented in the model.

Response: NHTSA has identified an error in Table 8-1. The agency published a revised PRIA correcting the error in Table 8-1, which is reproduced below and available on page 949 of the revised PRIA at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ld_cafe_co2_nhtsa_2127-al76_epa_pria_181016.pdf.

Table 8-1 - Coefficient estimates for sales model

Coefficients	Estimate	Std.Error	Significance
Intercept	0.509100	0.3221	
LD.Sales, lag1	0.611700	0.0627	0
LD.Sales, lag2	0.204800	0.05755	0
GDP.Growth.Rate	0.148800	0.01738	0
Delta.Transaction.Price	-0.000172	0.00002794	0
Labor.Force.Participation	0.000246	0.0001001	0.05
Labor.Force.Participation, lag1	-0.000229	0.00009896	0.05
F-statistic	363.2		
Adjusted R-squared	0.9184		

5. The coefficients for the dynamic fleet share equation described in the CAFE model documentation on page 79.

Response: Records for the dynamic fleet share equation is provided in the Energy Information Administration's 2016 National Energy Modeling System (NEMS) documentation beginning on page 48 and can be found at https://www.eia.gov/outlooks/aeo/nems/documentation/transportation/pdf/m070(2016).pdf.

A copy of the Fortran code for the NEMS implementation is detailed below. The NEMS implementation in the CAFE model is available in the public source code and described in the CAFE Model Documentation on page 78 at ftp://ftp.nhtsa.dot.gov/CAFE/2021-2026_CAFE_NPRM/CAFE_Model/CAFE_Model/CAFE_Model_Documentation_NPRM_2018.pdf.

```
!...Estimate percent of total light vehicles <8,500 GVW that are
cars
!...coefficients used to determine new car sales
    CCONSTANT =  3.4468
    CRHO      =  0.8903
    CINC      =  0.0     ! disposable income
    CFUEL     =  0.1441  ! fuel cost
    CHP       = -0.4436  ! vehicle horsepower
    CWGT      = -0.0994  ! vehicle weight
    CMPG      = -0.5452  ! vehicle fuel economy
    CDUMM     = -0.1174  ! dummy variable

!...coefficients used to determine new light truck sales
    TCONSTANT =  7.8932
    TRHO      =  0.3482
    TINC      =  0.0     ! disposable income
    TFUEL     = -0.4690  ! fuel cost
    THP       =  1.3607  ! vehicle horsepower
    TWGT      = -1.5664  ! vehicle weight
    TMPG      =  0.0813  ! vehicle fuel economy
    TDUMM     =  0.6192  ! dummy variable

    if(n.le.25)then
      CARSHARE(N) = CARLTSHR(N)
      TRKSHARE(N) = 1.0-CARLTSHR(N)
    else
      CARSHRT(N) = EXP(CCONSTANT*(1-CRHO)+(CRHO*LOG(CARSHARE(N-
1))) +        &
                   CINC *(LOG(INC00$16(11,N))-
(CRHO*LOG(INC00$16(11,N-1)))) + &
                   CFUEL*(LOG(PMGTR00$C(N))  -
(CRHO*LOG(PMGTR00$C(N-1))) +   &
                   CHP  *(LOG(AHPCAR(N-1))   -
(CRHO*LOG(AHPCAR(N-2)))) +    &
                   CWGT *(LOG(AWTCAR(N-1))   -
(CRHO*LOG(AWTCAR(N-2)))) +    &
                   CMPG *(LOG(TRUEMPG(1,N-1)) -
(CRHO*LOG(TRUEMPG(1,N-2))) +    &
                   CDUMM*(log(DUMM(N)) - (CRHO*log(DUMM(N-1)))))

      TRKSHRT(N) = EXP(TCONSTANT*(1-TRHO)+(TRHO*LOG(TRKSHARE(N-
1))) +        &
```

6. Cited reference to Anders Lie, Swedish Transport Administration, Peer Review of NTHSA's November 2011 Preliminary Report "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 2000-2007 Passenger Cars and LTVs."

   Response: The link located on www.regulations.gov appears to be functioning. The Swedish Transport Administration's peer review is available at https://www.regulations.gov/document?D=NHTSA-2010-0152-0035.

7. CAFE model output file Annual Societal Effects Report.

   Response: The CAFE model does not use output societal effects by regulatory class, body style, or weight threshold of vehicle. The basis and coefficients for the calculations are provided in Section II.F of the 2018 NPRM beginning on page 43106 and can be found at https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf. The exact equations used for the computations are in Section 6 of the NPRM's CAFE Model Documentation and can be found at ftp://ftp.nhtsa.dot.gov/CAFE/2021-2026_CAFE_NPRM/CAFE_Model/CAFE_Model/CAFE_Model_Documentation_NPRM_2018.pdf.

8. The agencies' detailed explanation and derivation of their point estimates for the increase in fatalities per hundred pounds of mass reduction over a constant footprint based on historical crash data, for model years 2004-2011 and calendar years 2006-2012.

   Response: The "updated analysis" referenced in the PRIA at p. 1357, refers to information available in the PRIA in Section 11.4, pps 1345-51. NHTSA intends to publish a technical summary of the logistic regression analysis and its results in the near future. In addition, NHTSA intends to publish a report similar to the "2016 Puckett and Kindelberger report" that will describe the methodological process by which the results were derived. Accordingly, I am withholding these records as exempt from the statutory disclosure requirement that contains information related to pre-decisional agency deliberation, opinions or recommendations pursuant to FOIA Exemption 5. 5 U.S.C. § 552(b)(5).

9. Data used by the agencies to derive the new statistical model that predicts fatality rates by vehicle age.

   Response: The data used to derive the new statistical model for fatality rates was obtained from IHS Markit (formerly R.L. Polk & Company) is proprietary information. Thus, I am withholding the data in its entirety from disclosure because it is related to trade secrets and commercial or financial information pursuant to FOIA Exemption 4. 49 U.S.C. § 552(b)(4). To request a copy of the data, please contact IHS Markit directly.

10. "Off model" analytical tools the agencies used to summarize and tabulate the results of the CAFE model.

    Response: The Supplementary R scripts for table calculations was used to summarize and tabulate the results of the CAFE model and can be found at https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system.

11. Input files used for the Autonomie model for various engine technologies that the EPA and NTHSA rely on to calculate the efficient improvements of various technologies, such as turbocharging and high-compression-ratio (Atkinson) engines.

    Response: The Autonomie simulation results and assumptions files are available in the docket in the supporting document section at https://www.regulations.gov/docket?D=NHTSA-2018-0067. An overview of the Autonomie model is described in detail in section 6.1 of the PRIA on page 188.

    ANL – All Assumptions Summary
    https://www.regulations.gov/document?D=NHTSA-2018-0067-0005

    ANL – Data Dictionary for Input Files
    https://www.regulations.gov/document?D=NHTSA-2018-0067-0004
    ANL – Model Documentation
    https://www.regulations.gov/document?D=NHTSA-2018-0067-1490

    ANL – Summary of Main Component Performance Assumption
    https://www.regulations.gov/document?D=NHTSA-2018-0067-0003

    Output files:
    ANL Compact NonPerfo
    https://www.regulations.gov/document?D=NHTSA-2018-0067-1855

    ANL Compact Perfo
    https://www.regulations.gov/document?D=NHTSA-2018-0067-1856

    ANL Small SUV NonPerfo
    https://www.regulations.gov/document?D=NHTSA-2018-0067-1486

    ANL Small SUV Perfo
    https://www.regulations.gov/document?D=NHTSA-2018-0067-1485

    ANL Pickup NonPerfo
    https://www.regulations.gov/document?D=NHTSA-2018-0067-1661

ANL Pickup Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1487

ANL Midsize SUV Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1662

ANL Midsize SUV Non Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1492

ANL Midsize NonPerfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1494

ANL Midsize Perfo
https://www.regulations.gov/document?D=NHTSA-2018-0067-1663

12. Modeling tools developed by the EPA including:

    a. All files necessary to utilize – with the Advanced Light Duty Powertrain and Hybrid Analysis (ALPHA) and the Optimization Model for reducing Emission of Greenhouse gases from Automobiles (OMEGA) – the response surface equations developed by the EPA as identified or referenced in "Peer Review of EPA's Response Surface Equation Report" and SAE paper 2018-01-1273.

    b. All new or modified input files, source code, and executable files for the EPA's OMEGA model developed since the release of the Proposed Determination in late 2016.

    c. All current and new input files, source code, and executable files for ALPHA used for the Proposed Determination in late 2016 and/or modified since then.

    d. All current and new pre-processors and their inputs used for the Proposed Determination in late 2016 or modified since then to categorize, sort, and rank technology packages and costs for use with OMEGA.

    Response: Records related to the EPA's modeling tools fall under that agency's jurisdiction and must be requested from the EPA directly.

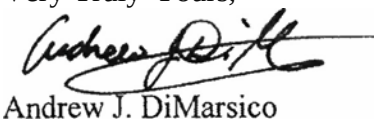
In your letter, you requested a waiver (or reduction) of fees associated with processing of the request. However, the fees to process your request did not exceed $20.00, which is the minimum amount that NHTSA assesses fees. Pursuant to the provisions of 49 CFR Part 7, there is no charge for this response.

I am the person responsible for this determination. If you wish to appeal this decision, you may do so by writing to the Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., West Building, W41-227, Washington, DC 20590, pursuant to 49 C.F.R. §

7.32(d). Alternatively, you may submit your appeal via electronic mail to nhtsa.foia.appeal@dot.gov. An appeal must be submitted within 90 days from the date of this determination. It should contain any information and argument upon which you rely. The decision of the Chief Counsel will be administratively final.

You also have the right to seek dispute resolution services from NHTSA's FOIA Public Liaison, Mary Sprague, who may be contacted at (202) 366-3564 or by electronic mail at Mary.Sprague@dot.gov. Further dispute resolution is available through the Office of Government Information Services (OGIS). You may contact OGIS on (202) 741-5770 or by electronic mail at ogis@nara.gov.

Very Truly Yours,



Andrew J. DiMarsico
Senior Attorney

Attachments

Exhibit D

CALIFORNIA
AIR RESOURCES BOARD

Mary D. Nichols, Chair
Matthew Rodriquez, CalEPA Secretary
Edmund G. Brown Jr., Governor

Sent via Overnight Delivery

December 19, 2018

Christopher Lieske
U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC),
EPA West Room B102
1301 Constitution Avenue NW
Washington, D.C. 20460

James Tamm
National Highway Traffic Safety Administration
U.S. Department of Transportation
West Building, Ground Floor, Room W12–140,
1200 New Jersey Avenue SE
Washington, D.C. 20590

Attention: NHTSA Docket ID Nos. NHTSA-2018-0067 and NHTSA-2017-0069
U.S. EPA Docket ID No. EPA–HQ–OAR–2018–0283
Freedom of Information Act (FOIA) Request Nos. ES18-003395, EPA-HQ-2018-011521; FOIA Appeal

Re: Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks

Dear Mr. Lieske and Mr. Tamm:

The California Air Resources Board (CARB) is writing to identify substantial procedural deficiencies regarding information used to support proposed federal relaxations in the existing passenger car and light-duty truck greenhouse gas (GHG) emissions and corporate average fuel economy (CAFE) standards in the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks.[1] This letter follows our substantive comments on the proposed rules, filed in October,[2] and our information request letter (submitted in part under the Freedom of Information

[1] 83 Fed.Reg. 42,986 (August 24, 2018).
[2] Please also see our detailed comments on the SAFE Vehicles Rule, Docket No. EPA-HQ-OAR-2018-0283-5054 (CARB Detailed Comments), and our comments filed on the Draft Environmental Impact Statement (DEIS) for the proposal, Docket No. NHTSA-2017-0069-0625 ("DEIS Comments").

Act (FOIA)) of September 11, 2018.[3] The information we requested has not been fully provided, even though the National Highway Transportation Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (U.S. EPA), collectively referred to here as the Agencies, assert their proposals are based on this information. Moreover, the Agencies may be considering relying upon inaccurate information provided by some commenters. This letter highlights these deficiencies, and includes an appeal of several of NHTSA's initial FOIA determinations.[4]

The proposed SAFE Vehicles Rule is confounding, substantively and procedurally. As explained in our previously submitted comments (and the comments of many others), the proposal cannot be justified based on the information made available by the Agencies and, in fact, appears to be unjustifiable.[5] Further, the opportunity to evaluate the proposal remains unreasonable and inadequate. We reiterate that additional information and additional opportunity for public comment are necessary to consider this proposal.

As an initial matter, U.S. EPA's and NHTSA's responses to our request for additional information were received just three days before the end of the comment period, which was brought to a close quickly despite requests to extend the comment period from many diverse parties. This late response compounds the failure to provide a reasonable opportunity to comment on the proposal itself with a failure to provide a reasonable opportunity to consider and comment on the Agencies' response. The Agencies' decision to revise the preliminary regulatory impact analysis supporting the proposal during the same period worsened the information gap.

We note that the Agencies would further exacerbate their failures to provide adequate information and comment opportunities if, in the final rule or supporting documents (including, but not limited to, NHTSA's final environmental impact statement), they rely on new or supplemental information or analysis not fully disclosed with an opportunity for public comment. In this regard, we note that the comments of the Auto Alliance ask the Agencies to consider an alternative analysis of the proposal that was prepared by its consultants, NERA Economic Consulting and Trinity Consultants (collectively "NERA-Trinity"). As discussed below, the information provided about this alternative analysis is woefully inadequate to permit review by CARB or the public and, accordingly, the Agencies may not rely on it without first providing public notice of their intent to do so, substantial additional information so that the public may understand it, and an

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[3] California Air Resources Board, *Request for Extension Of Comment Period and Additional Public Hearings Regarding Joint Proposed Rule to Roll Back Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards for Model Years 2021-2026 Light-Duty Vehicles*, September 11, 2018, Docket No. EPA-HQ-OAR-2018-0283-0883.

[4] We have copied appropriate FOIA staff, as well as agency officials.

[5] We further note that, after the close of the comment period, additional analyses have been published, including in peer-reviewed journals, highlighting deficiencies in the Agencies' rushed analysis. *See, e.g.,* Bento, et al., *Flawed analyses of U.S. auto fuel economy standards* (December 7, 2018) Science, v. 362, iss. 6419, p. 1119.

opportunity to comment. This would, of course, be true of any alternative analytical paths the Agencies might use to justify or support any final rule.

Below, we summarize the information that the Agencies still have not made available about their own analyses, the information that would prevent meaningful consideration of the NERA-Trinity alternative analysis, and the patent deficiencies in the NERA-Trinity analysis that can be discerned from the limited information provided. Please place this letter in the dockets for both rules, correct the inadequate disclosures and comment periods, and ensure appropriate steps are taken by your FOIA officers.

I. NHTSA and U.S. EPA Continue to Fail to Provide Requested, Relevant Information Necessary to Meaningful Public Comment; CARB Appeals Certain FOIA Responses

The Agencies' responses to CARB's request for additional information concerning the proposed rollback were inadequate under the laws that govern these rulemakings and under FOIA. U.S. EPA flatly declined to share information requested, or even to make a timely FOIA determination. NHTSA shared a limited amount of information, while withholding materials critical to the public's evaluation of the proposed rules. Neither response was proper and both are contrary to law. In this portion of the letter, we discuss these deficiencies with regard to each of CARB's relevant data requests.[6] We look forward to a prompt written response to our appeal, as well as to additional disclosures and further opportunities to comment.

1. CARB's Request: Information about the models and data used to estimate battery costs for electrified vehicles. [This request comprised three categories of information, identified below.] This information is required to replicate and evaluate whether the modeling underlying the proposal is appropriate, considering the various vehicle and technology types.

CARB's Request

a. The proposal and the Preliminary Regulatory Impact Analysis (PRIA), NHTSA-2018-0067-1972, reference the Argonne National Laboratories' (ANL) website for the BatPaC model for estimating battery costs for vehicles, and state that the agencies used "an up-to-date version" of the model, but do not identify the version. (*See*, e.g., 83 Fed.Reg. 42,985, 43,002 (August 24, 2018).) U.S. EPA and NHTSA have posted to the dockets for this action a document describing how BatPaC was developed, but this document appears to be from 2012. It does not state which

[6] Requests are numbered as they are in CARB's September 11, 2018 letter. We omit further discussion of CARB data requests 6, 7, 10, and 11. Although this information should have been made available in the docket initially, and was provided far too late to CARB, CARB is not appealing NHTSA's responses at this time (though CARB reserves the right to file an additional appeal).

version of BatPaC NHTSA and U.S. EPA used to estimate battery costs. See "Modeling the Performance and Cost of Lithium-Ion Batteries for Electric-Drive Vehicles, Argonne National Laboratory, ANL-12/55," NHTSA Docket ID #: NHTSA-2018-0067-1692; EPA Docket ID#: EPA-HQ-OAR-2018-0283-0764.

NHTSA's Response: *The BatPaC version 3.0 model was used to estimate battery costs. NHTSA does not maintain the BatPaC model. The model is maintained by the U.S. Department of Energy's Argonne National Laboratories (ANL). To obtain a copy of the BatPaC version 3.0 model, please contact ANL directly.*

CARB's Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)). As NHTSA is aware, FOIA requires it make its records "promptly available" to any person. (5 U.S.C. § 552(a)(3)). NHTSA recognizes its statutory duty (*see* 49 C.F.R. § 7.23(b)) and has a standard policy to make records available to the "greatest extent possible" (49 C.F.R. § 7.23(a)). NHTSA should provide the full model used to evaluate battery costs. NHTSA has not cited any relevant FOIA exemption to justify withholding the model as NHTSA used it. Indeed, NHTSA concedes it used a particular version of the BatPaC model, and that version must be in NHTSA's possession. Explicitly providing the model version that the agencies used enables review to determine whether the agencies modified it in any way.

Contrary to NHTSA's assertion it used the latest version of BatPaC, ANL released a revision, version 3.1, in October 2017, as noted in our previous comments.[7] Since releasing that version, ANL has not made the prior version 3.0 available on its website.

It is unreasonable to fail to make available the modeling tools used in support of the proposal, and to compel the public without notice or instruction to seek information from third parties. In doing so, U.S. EPA and NHTSA fail to make clear what they are relying in support of their proposal.

CARB's Request:

b. U.S. EPA and NHTSA should make available the information specifying the full battery sizes, in kilowatt-hours (kWh), battery pack configuration, and costs used for each vehicle iteration in the CAFE model. See PRIA,

[7] See CARB, Analysis in Support of Comments of the California Air Resources Board on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (CARB Detailed Comments), October 26, 2018, Docket Nos. NHTSA-2018-0067-11873, EPA-HQ-OAR-2018-0283-5054, p. 140.

Electrification Technologies, Technology Overview, section 6.3.8.1, p. 357. The PRIA states that NHTSA posted ANL vehicle files that have battery pack sizes and costs for each vehicle, but there is no additional information about battery pack configuration (e.g., the number of cells, and the electrical topology of how those cells are arranged in the battery pack), nor do they directly reference where the files are posted. NHTSA and U.S. EPA have not posted the BatPaC model file(s) that were used. ANL cost and battery size data referenced in the PRIA, p. 358, footnote 325, but the footnote refers to a docket identification number that is not available. Previously, in support of the draft Technical Assessment Report and Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Proposed Determination), EPA-420-R-16-020, November 2016, U.S. EPA posted the BatPaC files that it used.

NHTSA's Response: *The full battery sizes in kWh and costs are available in files in the docket for each "tech class." Information for peak battery power, battery total energy in kWh, and battery pack direct manufacturing cost can be found in columns AN-AR for each of the files listed below. Please note that there are no battery pack configurations.* [Specific links offered are omitted from this CARB letter for brevity.]

CARB's Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)). All information responsive to this request has not been provided, and no relevant exemption has been cited. In this request, CARB requested information "required to replicate and evaluate whether the modeling underlying the proposal is appropriate" but NHTSA did not provide all relevant records. After reviewing the files provided, NHTSA appears to provide only a small part of the Agencies' analysis. CARB was therefore unable to use BatPaC v3.0 to replicate the federal agencies' results.

This information is important because the precise modeling files used go to critical questions in this rulemaking. We requested the model inputs and results and the battery pack configurations (number of cells, cells in parallel, nominal pack voltages, etc.) for each unique battery pack because they are essential to understanding how the Agencies used the model to reach their conclusions.

Specifically:

(1) Very few of the inputs that are needed to run the BatPaC model were disclosed. We discuss below the inputs that the Agencies provided in support of the SAFE Vehicles Rule, and contrast them with the degree of information

provided in previous analyses by the Agencies. The information provided in this proceeding is not sufficient even to ascertain whether the inputs that were used are reasonable.

(2) There is no electrical configuration information about the battery packs for any technology combination. The electrical configuration encompasses several physical parameters about a battery pack that are essential to understanding if the battery packs are being modeled appropriately and reflective of reality. Examples of electrical configuration information include, but are not limited to, the following:

- Total number of cells in the battery pack
- Total number of battery cells in wired in series
- Total number of cells in wired in parallel'
- Nominal voltage of each cell
- Energy capacity, in kilowatt-hours (kWh), of each cell
- Number of cells in each module
- Number of modules in each battery pack
- Energy capacity, in kWh, of each module
- Battery pack nominal voltage
- Battery pack energy capacity, in amp-hours (Ah)
- Number of finished battery packs in a single vehicle, because BatPaC allows for multiple packs per vehicle

Without the above information, we cannot determine whether the Agencies' modeling was reasonable or if it contained mistakes, because electrical configurations drive cell design in the BatPaC model. The one example in the Preliminary Regulatory Impact Analysis (PRIA) indicated that the analysis may have used configurations with low nominal pack voltages. These voltages may have been unreasonably low, leading to unreasonable results.

Both these pieces of information were reasonably included in CARB's initial request and should have been provided as part of the rulemaking record available for public comment and as part of the response to our FOIA request. Without this information, CARB was unable to meaningfully comment on the modeling of electric vehicle battery packs and their costs for the SAFE Vehicles Rule. The files cited by NHTSA provide only one input for the BatPaC model, and only two pieces of output information from the BatPaC modeling runs. In its analyses reflected in the midterm evaluation and Proposed Determination, U.S. EPA provided the BatPaC modeling and battery size files. Those disclosures enabled meaningful comment and participation in the midterm evaluation process.

These failures and omissions are illustrated by the two figures below. Figure 1 is a screenshot of one of the ANL files that NHTSA pointed to, specifically 'ANL_CompactNonPerfo_07202017.xlsb', that were provided in the public record for the SAFE Vehicles Rule. All other ANL files that NHTSA pointed to are structured the same, but for different vehicle classes. Each row in the file represents a different technology combination and the resulting Autonomie and BatPaC output data. The arrows point to the only three BatPaC related pieces of information that are provided in the files. All other information listed in the other columns for the files do not connect to information needed to understand input or output information for either the BatPaC model, or other critical information about the modeled battery packs for the modeled vehicles.

Figure 1

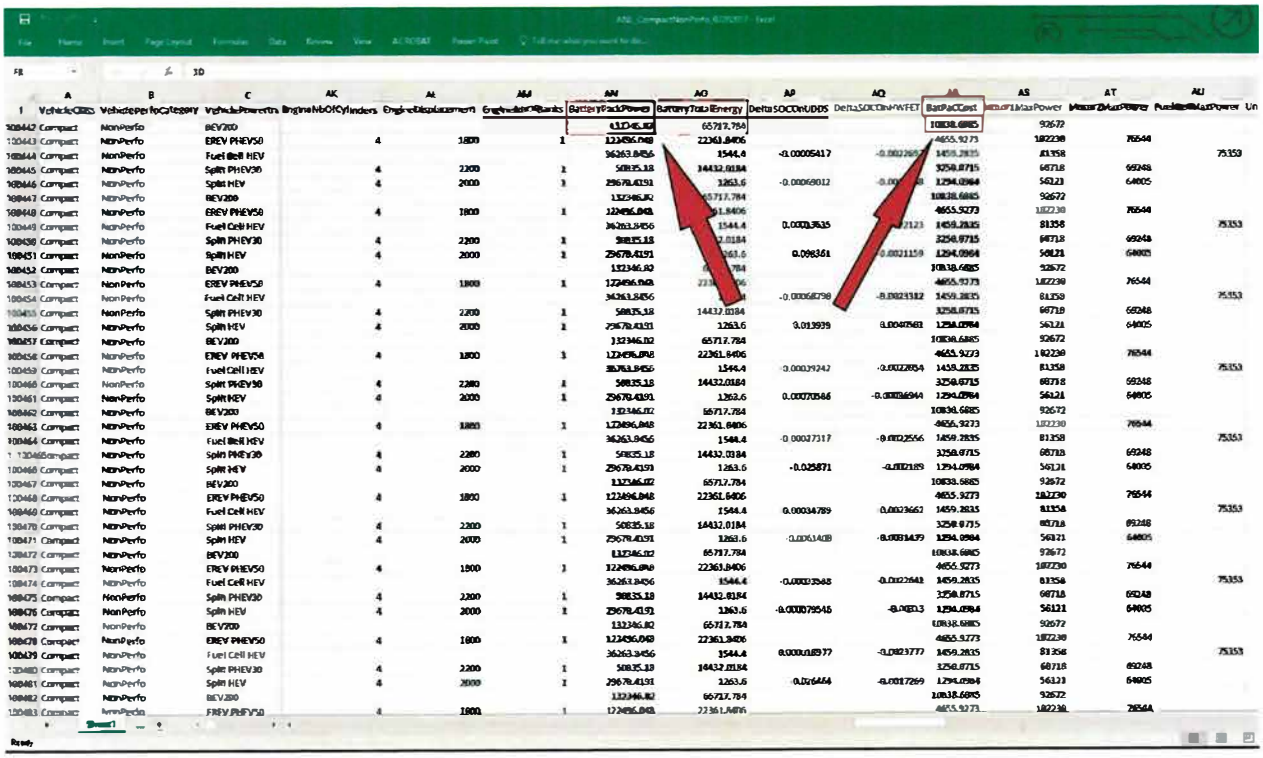

Figure 2, below, is a screenshot of one of the files, 'Battery_Sizer_PD_NMC_0WR.xlsx', that U.S. EPA provided as part of the Mid-Term Evaluation process that led to the 2017 Final Determination and is representative of what the Agencies released as part of that earlier process regarding these same standards. The file contains both the iterative battery solver used to find an optimized battery size for different electrified vehicle technology combinations for a given chemistry and targeted mass reduction, and the BatPaC model used to model battery

costs for those optimized battery packs from the battery sizer. Each column of data represents a single optimized battery solution and the resulting data associated with that solution. The arrows point to the same three pieces of information that would be used to populate the three columns in the file referenced for Figure 1.

Figure 2

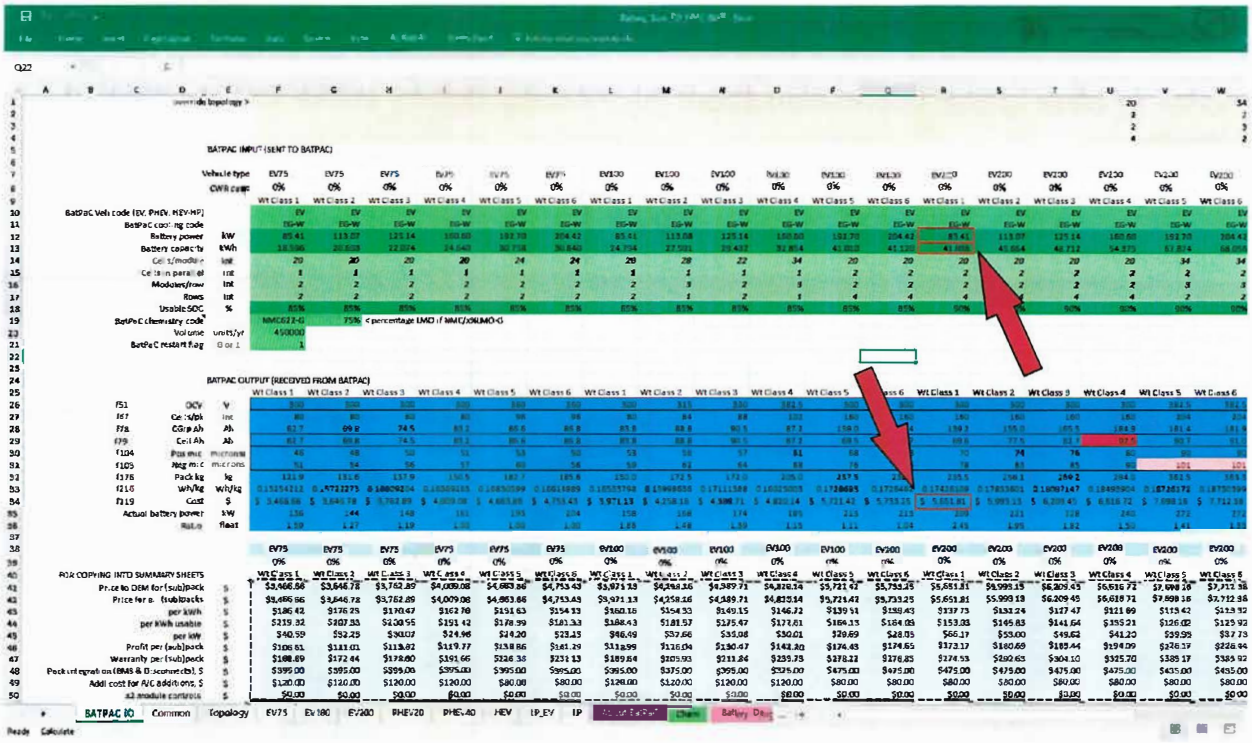

Figure 3, on the next page, is the same screenshot as in Figure 2, above, but the information that has not been made available for the SAFE Vehicles Rule has been covered up. The file has several other tabs of battery model information where the entire worksheet would have to be covered to align with what was provided for the SAFE Vehicles Rule.

Figure 3

As can be seen in the difference between the three figures, the data supplied by the Agencies for the SAFE Vehicles Rule does not provide the level of detail required to comment on the appropriateness of the battery cost modeling. The data previously provided as shown in Figure 2, and the set of files it represents, contain much more detail of the inputs to, and outputs from, the BatPaC model that are critical to the modeling of the battery packs for evaluating the compliance costs of vehicle regulations.

Because the information is complex, we continue to evaluate it in the event additional conclusions may be drawn relevant to the proposed rule. We reiterate our objection that this information should have been made available to all interested persons in a timely manner and with adequate time for review.

CARB's Request:

c. The proposal and PRIA provide conflicting information about which battery chemistries the agencies considered. For instance, the proposal and PRIA refer to NMC441-Gr chemistry for both plug-in hybrid-electric vehicles and battery-electric vehicles, but the ANL summary refers to NMC333. See, e.g., PRIA, pp. 372, Table 6-27, 373 ["We selected NMC441 as choice of

chemistry for PHEVs and BEVs. NMC441 more suitable for high energy batteries capable of discharge rates."]. The Excel file titled "ANL-Summary of Main Component Performance Assumptions NPRM" has a tab labeled 'Description – BatPac' with the same table listed as in the PRIA, except the chemistry listed for PHEVs and BEVs is NMC333-G instead of NMC441-Gr. See Docket ID Nos. EPA-HQ-OAR-2018-0283-0054 and NHTSA-2018-0067-0003. The proposal and PRIA do not directly reference this file.

NHTSA's Response: *NHTSA and EPA used the battery chemistries associated with the BatPaC version 3.0 model.*

CARB's Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)) because it does not appear to reflect the record, and so indicates that records in NHTSA's possession were responsive but have not been provided. The chemistry of NMC441 is not available in version 3.0 (or even the recently-released version 3.1) of the BatPaC model, even though the SAFE Vehicles Rule and supporting regulatory impact analysis refer to this chemistry. The Agencies have either incorrectly stated which version of BatPaC was used, identified the incorrect chemistry when disclosing what was used for modeling batteries for some of the vehicle technologies, modified BatPaC without providing the requested documents describing the modifications, or used inputs without identifying them – despite repeated requests for this information.

Additionally, the files that NHTSA cites in its response are Autonomie model outputs. They contain only battery pack energy capacities, battery pack power capability, and battery pack cost for a reference year. As U.S. EPA and NHTSA stated, they did not disclose any information about the battery pack configurations or provide other BatPaC input information. This precludes meaningful analysis and comment, as U.S. EPA's interagency review made clear.[8]. Several pieces of information would be needed to analyze how BatPaC was used and if the results were appropriate and reflective of reality. Some of that information would include, but is not limited to, the following:

- Basic battery pack information for each unique battery pack
    - Total number of cells in the battery pack
    - Total number of battery cells in wired in series
    - Total number of cells in wired in parallel
    - Number of cells in each module
    - Number of modules in each battery pack

[8] *See* CARB Detailed Comments, pp. 139-140, *citing* EO 12866 Review: NHTSA responses to interagency comments sent to OMB, Docket ID: EPA-HQ-OAR-2018-0283-0453.

  - Battery pack nominal voltage
  - Battery pack mass, in kilo-grams (kg)
- Cell specifications
  - Electrode thicknesses and any applied limits
  - Resultant cell capacity, in kWh
  - Nominal cell voltage
  - Mass of constituent materials used in each unique cell, particularly for the cell's anode and cathode
  - Cell mass, in grams (g)
- Material cost inputs, yields, and assembly costs
  - Cost of cell constituent materials, like $/kg of nickel or cobalt
  - % yield of each manufactured cell component
  - Unit cell hardware costs, like the positive and negative battery terminals
  - Electrode processing costs
- Manufacturing volume, in number of battery packs per year

Batteries are large cost drivers for electrification technologies, and the public cannot meaningfully comment on the battery sizing and cost development methodologies without the requested information.[9] Effectively, it is impossible to replicate what the Agencies did with BatPaC. NHTSA and U.S. EPA must provide sufficient responsive records to satisfy CARB's request. The Agencies have not offered any relevant FOIA exemptions to support their non-response. The appeals officers at the Agencies should direct a full search for records and promptly supply them to CARB.

2. CARB's Request: The PRIA references Polk registration data, including survival rates aggregated by model year, calendar year, and body style. These data are needed to verify the coefficients of the new model predictions for vehicle retirement (scrappage), but have not been made available. See, e.g., PRIA at pp. 1008, 1014, 1023, fig. 8-23, 1025, fig. 8-24, and 1027, fig. 8-25.

NHTSA's Response: *The Polk registration data is proprietary information and is being withheld in its entirety from disclosure because it is related to trade secrets and commercial or financial information pursuant to FOIA Exemption 4. 49 U.S.C. § 552(b)(4). To purchase the series of National Vehicle Population Profile (NVPP) datasets, please contact IHS Markit (formerly R.L. Polk & Company) directly.*

CARB's Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)).

[9] See CARB Detailed Comments, pp. 139-140, fn. 261.

The FOIA response appears to have erred in two related regards. First, FOIA itself directs "partial disclosure of information" where possible, and specifies that agencies must take "reasonable steps necessary to segregate and release nonexempt information." (5 U.S.C. 552(a)(8)(A)(ii).) NHTSA does not appear to have made any attempt to segregate and produce responsive information. Nor does it appear to have followed its FOIA regulations in making this trade secret determination. Those regulations require NHTSA to notify the submitter of the data "expeditiously" and ask for any written objections to release. Notably, "[t]he burden is on the submitter to identify with specificity all information for which exempt treatment is sought and to persuade the agency that the information should not be disclosed." (49 C.F.R. 7.29(a).) NHTSA has not demonstrated that *all* relevant information is trade secret under FOIA in the first instance, that the submitter (here, likely, IHS Markit) objects to their release, or even that NHTSA has sought IHS Markit's views.[10]

Moreover, CARB specifically requested "aggregated" data. Such aggregated data protects individual manufacturers' information and so obviates trade secret concerns. We note that such data, as a critical basis for a rulemaking, would be improper to withhold from public review. Indeed, IHS Markit does allow for publication of aggregate data, provided that publication rights have been purchased. Given the Agencies' choices to purchase and rely on this information, the Agencies should have purchased those rights or should do so now.

NHTSA and U.S. EPA should provide the data aggregated to the same degree as used for developing (or "estimating" as it is also described) the CAFE Model so that CARB and the public have a reasonable opportunity to evaluate and comment on the Model's scrappage coefficients. The burden is on the Agencies, not the public, to provide the necessary factual information upon which the Agencies' proposal is based so that the public can meaningfully participate in the rulemaking. The failure to provide this data and information, which are critical components of the Agencies' analysis and are necessary in order to analyze the Agencies' modeling, deprives the public of their right to participate in the rulemaking.[11]

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[10] To the degree 49 C.F.R. Part 512's trade secret rules for NHTSA apply (which NHTSA has not asserted), it is unclear whether any final determinations have been made under those provisions

[11] *See Allina Health Services v. Sebelius*, 746 F.3d 1102, 1110 (D.C. Cir. 2014) ("Still, we have held for many years that an agency's failure to disclose *critical* material, on which it relies, deprives commenters of a right under § 553 [of the Administrative Procedure Act] to participate in rulemaking." (internal quotations omitted)); *Air Transport Ass'n of Am. v. FAA*, 169 F.3d 1, 7 (1999) ("[W]e have cautioned that the most critical factual material that is used to support the agency's position on review must have been made public *in the proceeding* and exposed to refutation."); *Ass'n of Data Processing Service Orgs., Inc. v. Bd. of Governors of Fed. Reserve System*, 745 F.2d 677, 684 (D.C. Cir. 1984) ("[A]t least the most critical factual material that is used to support the agency's position on review must have been made public in the proceeding and exposed to refutation.").

3. CARB's Request: New vehicle sales and price data referenced in the proposal. This includes:

a. Data provided by the National Automobile Dealers Association (NADA) and others. See 83 Fed. Reg. at 43,095; PRIA, pp. 1017-1018.
b. Data describing historical transaction prices, and quarterly new vehicle sales data used to develop the dynamic new sales model. See PRIA, pp. 954-961.
c. Economic data used to develop the autoregressive distributed-lag (ARDL) model that predicts new vehicle sales and is used in the CAFE model. See 83 Fed. Reg. at 43,074.

CARB's Rebuttal to 3.a. – 3.c.: NHTSA's response is omitted for brevity in this letter, but is under CARB review. This data is necessary to evaluate the proposal's predictions for fleet population, sales, and fatalities. We continue to object that the Agencies have not fully explained how they manipulated and used the NADA data.[12] Because the information is complex, we continue to evaluate it in the event additional conclusions may be drawn relevant to the proposed rule.

Data were provided to CARB only four days prior to the close of the comment period, which did not allow for sufficient time for review and analysis. Separately, NHTSA also provided identical data to Professors James Stock and Kenneth Gillingham, who found numerous errors in the estimation of the new sales model as discussed in their comment letter.[13] Moreover, though NHTSA provided this data to CARB and Professors Stock and Gillingham, NHTSA did not make this data public for all stakeholders to review. The failure to provide this data and information – critical components of the Agencies' modeling and necessary in order to analyze and refute the Agencies' modeling – to the public generally and meaningfully during the proceeding (not four days before the close of the comment period) deprives the public of their right to participate in the rulemaking.[14]

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[12] *See* Stock, J., Gillingham, K., and Davis, W., Comments on Notice of Proposed Rulemaking for [the SAFE Vehicles Rule], EPA-HQ-OAR-2018-0283-6220, pp. 5-6.
[13] *See* EPA Docket ID: EPA-HQ-OAR-2018-0283-6220.
[14] *See Allina Health Services v. Sebelius*, 746 F.3d 1102, 1110 (D.C. Cir. 2014) ("Still, we have held for many years that an agency's failure to disclose *critical* material, on which it relies, deprives commenters of a right under § 553 [of the Administrative Procedure Act] to participate in rulemaking." (internal quotations omitted)); *Air Transport Ass'n of Am. v. FAA*, 169 F.3d 1, 7 (1999) ("[W]e have cautioned that the most critical factual material that is used to support the agency's position on review must have been made public *in the proceeding* and exposed to refutation."); *Ass'n of Data Processing Service Orgs., Inc. v. Bd. of Governors of Fed. Reserve System*, 745 F.2d 677, 684 (D.C. Cir. 1984) ("[A]t least the most critical factual material that is used to support the agency's position on review must have been made public in the proceeding and exposed to refutation.").

4. CARB's Request: Report of analysis of the standard errors and significance of the ARDL [autoregressive distributed lag] sales model coefficients, F-statistic and R^2 of the overall model, and variable stationarity and co-integration indicators. This information is needed to verify the statistical significance and errors of the coefficients used in the Volpe model. The coefficients for the ADRL sales model listed on p. 957, Table 8-1 of the PRIA, are not consistent with those implemented in the model. See CAFE Model Documentation, PRIA, p. 78, Table 17, available at: https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system ["2018 NPRM for Model Years 2021-2026 Passenger Cars and Light Trucks," Model Documentation].

NHTSA's Response: *NHTSA has identified an error in Table 8-1. The agency published a revised PRIA correcting the error in Table 8-1, which is reproduced below and available on page 949 of the revised PRIA at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ld cafe co2 nhtsa 2127-al76_epa_pria_181016.pdf.*

Table 8-1 - Coefficient estimates for sales model

Coefficients	Estimate	Std.Error	Significance
Intercept	0.509100	0.3221	
LD Sales, lag1	0.611700	0.0627	0
LD Sales, lag2	0.204800	0.05755	0
GDP Growth Rate	0.148800	0.01738	0
Delta Transaction Price	-0.000172	0.00002794	0
Labor Force Participation	0.008246	0.001101	0.05
Labor Force Participation, lag1	-0.000229	0.00009896	0.05
F-statistic	3632		
Adjusted R-squared	0.9184		

CARB's Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)). All information requested has not been provided, and NHTSA has offered no valid exemption to justify withholding records. Although NHTSA provided a revised Table 8-1, the requested variable stationarity and co-integration indicators were not provided. Using the corrected coefficients, the outputs from CARB's run of the CAFE model do not match the output values published in PRIA Table-8-2.[15] CARB continues to request these records both pursuant to its FOIA request and pursuant to the Agencies' responsibilities to disclose the bases for their proposed actions and to allow comment on those bases.

5. CARB's Request: The coefficients for the dynamic fleet share equation described in the CAFE Model Documentation on p. 79. These are not listed

[15] See CARB Detailed Comments, pp. 218-219, Table VI-4 showing discrepancy between CARB and Agency outputs.

anywhere. Additionally, according to the PRIA on p. 955, the model was based on EIA's National Energy Modeling System (NEMS), but no reference is provided for the NEMS model. This information is necessary to evaluate the equation used in the model.

NHTSA's Response: *Records for the dynamic fleet share equation is provided in the Energy Information Administration's 2016 National Energy Modeling System (NEMS) documentation beginning on page 48 and can be found at https://www.eia.gov/outlooks/aeo/nems/documentation/transportation/pdf/m070(2016).pdf.*

A copy of the Fortran code for the NEMS implementation is detailed below. The NEMS implementation in the CAFE model is available in the public source code and described in the CAFE Model Documentation on page 78 at ftp://ftp.nhtsa.dot.gov/CAFE/2021-2026_CAFE_NPRM/CAFE_Model/CAFE_Model/CAFE_Model_Documentation_NPRM_2018.pdf. [NHTSA's image of relevant code is omitted from this CARB letter for brevity.]

CARB Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)). All information requested has not been provided, and NHTSA has offered no valid exemption to justify withholding records.

It is unreasonable and improper to direct the public to extrinsic sources of information, when the Agencies themselves have the information and provide no reason it should not be disclosed. It is also unreasonable and improper for the Agencies to vaguely reference, as they do in the Vehicles Rule and the PRIA, the "NEMS model" without citing the version used, when there are many versions of this model available. The public should not be required to guess which version the Agencies used. The exact model used for this rulemaking should be provided and accurately cited. This is especially pertinent where the Agencies do not consistently use the most recent version of available models, such as with the BatPaC model. The Agencies' errors remain where the instructions and information have not been made publicly available.

Further, the information supplied by NHTSA referencing the CAFE Model Documentation does not include the dynamic fleet share coefficient values. Footnote 52 in the CAFE Model Documentation states: "Refer to Section A.3.10 of Appendix A for more information regarding the input parameters used for the Dynamic Fleet Share model." However, Section A.3.10 refers to ZEV Credit Values:

A.3.10ZEV Credit Values

The ZEV Credit Values worksheet contains parameters allowing the modeling system to target the ZEV requirements of CA+S177 states during compliance simulation. Presently, usage of ZEV credits within the CAFE Model should be considered as experimental.

Table 39. ZEV Credit Values Worksheet

Category	Model Characteristic	Units	Definition/Notes
ZEV Credit Values	ZEV Requirement (%)	percentage	Minimum percentage of zero emission vehicle (ZEV) credits that a manufacturer must generate in order to meet the ZEV requirement in each specified model year.
	Max Credits from PHEV (%)	percentage	Maximum percentage of ZEV credits that a manufacturer may generate from PHEVs in order to meet the ZEV requirement in each specified model year.

Presumably, the correct reference is Section A.3.11, but, while this table does describe the coefficients, the values themselves are not present. Without these coefficient values, it is not possible to understand the extent to which the different variables (fuel price, fuel economy, curb weight, horsepower) affect the model's estimate of production volumes and fleet shares in future model years, and whether those effects are reasonable predictions. In turn, without a proper understanding of the fleet share model, it is not possible to evaluate whether this model's interaction with the other components of the CAFE Model is sound and reasonable.

A.3.11DFS Model Values

The DFS Model Values worksheet contains fine tuning parameters for utilizing the Dynamic Fleet Share and Sales Response model (DFS/SR) within the CAFE modeling system. When enabled, the DFS/SR model adjusts the production volumes and fleet shares in future model years as a response to increasing fuel economies and costs of vehicle models.

Table 40. DFS Model Values Worksheet

Category	Model Characteristic	Units	Definition/Notes
DFS Model Values	*Seed Values (per Model Year)*	*various*	Fleet-specific seed values for the Dynamic Fleet Share and Sales Response model, specified for LDV and LDT1/2 fleets and for model years 2014 and 2015.
	Share of Total Fleet	percentage	Observed share of either LDV or LDT1/2 fleets versus the total light duty fleet, during a specific model year.
	Fuel Economy	mpg	Average fuel economy for a specific fleet, during a specific model year.
	Horsepower	hp	Average horsepower for a specific fleet, during a specific model year.
	Curb Weight	lbs.	Average curb weight for a specific fleet, during a specific model year.
	Coefficients	number	Fleet-specific coefficients for the Dynamic Fleet Share and Sales Response model, specified for LDV and LDT1/2 fleets.
	Constant	number	Specifies the NEMS "constant" coefficient.
	Rho	number	Specifies the NEMS "rho" coefficient.
	FP	number	Specifies the NEMS "fuel price" coefficient.
	HP	number	Specifies the NEMS "horsepower" coefficient.
	CW	number	Specifies the NEMS "curb weight" coefficient.
	MPG	number	Specifies the NEMS "mpg" coefficient.
	Dummy	number	Specifies the NEMS "dummy" coefficient.

Finally, the CAFE Model documentation lacks any justification or elaboration on how the NEMS coefficients were "applied at a different level" and why it is appropriate to repurpose coefficients developed for vehicle categories for body styles instead.[16] CARB continues to maintain that the information provided, both in the rulemaking record and in response to its FOIA request, was entirely insufficient.

8. CARB's Request: The agencies' detailed explanation and derivation of their point estimates for the increase in fatalities per hundred pounds of mass reduction over a constant footprint based on historical crash data, for model years 2004-2011 and calendar years 2006-2012. Previously, these details were provided in a separate report such as the "2016 Puckett and Kindelberger report." No such report is available this time. The PRIA only provides a summary table of the results of this analysis, yet states an "updated analysis" exists. See PRIA, p. 1357, section 11.4.

NHTSA's Response: *The "updated analysis" referenced in the PRIA at p. 1357, refers to information available in the PRIA in Section 11.4, pps 1345-51. NHTSA intends to publish a technical summary of the logistic regression analysis and its results in the near future. In addition, NHTSA intends to publish a report similar to the "2016 Puckett and Kindelberger report" that will describe the methodological process by which the results were derived. Accordingly, I am withholding these records as*

[16] See CARB Detailed Comments, pp. 222-223.

exempt from the statutory disclosure requirement that contains information related to pre-decisional agency deliberation, opinions or recommendations pursuant to FOIA Exemption 5. 5 U.S.C. § 552(b)(5).

CARB's Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)). CARB also objects that the Agencies continue to withhold information necessary for meaningful public comment on its proposed action.

First, even if technical summaries and methodological reports are still being drafted, NHTSA's response ignores that NHTSA already made the relevant decisions here—to propose the SAFE Vehicles Rule, relying on certain data and analysis. NHTSA cannot, therefore, assert that the data and analysis it relied on for the proposal are protected from disclosure as pre-decisional. Rather, it must make those available for public review. This includes information and analysis on how the point estimates for the increase in fatalities from mass reduction were derived. This information is needed in order to justify the Agencies' point estimates – even more critically here, where all of these point estimates are not statistically significant at the 95 percent confidence level (and three are not even statistically significant at an 85 percent confidence level, and no explanation is provided why these estimates as reasonable in light of such statistical uncertainty). Without the detailed regression analysis, the use of these point estimates is not justifiable and the Agencies' analysis in the proposed rule remains opaque and improperly insulated from meaningful public review and critique, contrary to law.

9. CARB's Request: Data used by the agencies to derive the new statistical model that predicts fatality rates by vehicle age. See PRIA Table 11-21, p. 1397. The coefficients of the model are provided, but without the data it is not possible to evaluate whether the coefficients were properly derived. Additionally, the coefficients provided in the PRIA are different (significant digits and sign changes) than those identified in the actual model source code (which are also commented out such that they are non-functional[17]), and are different from the model year based coefficients used in the input files. This renders unclear what coefficients the analysis in the NPRM is based upon.

NHTSA's Response: *The data used to derive the new statistical model for fatality rates was obtained from IHS Markit (formerly R.L. Polk & Company) is proprietary information. Thus, I am withholding the data in its entirety from disclosure because it is related to trade secrets and commercial or financial information pursuant to FOIA*

[17] Code that is "commented out" is a programming technique that instructs the computer to skip the calculations or other instructions in those lines of code.

Exemption 4. 49 U.S.C. § 552(b)(4). To request a copy of the data, please contact IHS Markit directly.

CARB Rebuttal: CARB appeals this response, pursuant to FOIA (5 U.S.C. § 552) and Department of Transportation FOIA regulations (*see, e.g.*, 49 C.F.R. § 7.32(d)).

Again, FOIA itself directs "partial disclosure of information" where possible, and specifies that agencies must take "reasonable steps necessary to segregate and release nonexempt information." (5 U.S.C. 552(a)(8)(A)(ii).) Yet, NHTSA has denied all information without making this determination, and again does not appear to have followed its FOIA regulations in making this trade secret determination. Those regulations require NHTSA to notify the submitter of the data "expeditiously" and ask for any written objections to release. Notably, "[t]he burden is on the submitter to identify with specificity all information for which exempt treatment is sought and to persuade the agency that the information should not be disclosed." (49 C.F.R. 7.29(a).) NHTSA has not demonstrated that *all* relevant information is trade secret under FOIA in the first instance, that the submitter (here, likely, IHS Markit) objects to their release, or even that NHTSA has sought IHS Markit's views.[18]

Further, CARB requested all information used to derive the new modeling coefficients. Even if some of the data is truly proprietary, NHTSA has not demonstrated that *all* information or relevant records based upon it are confidential. Further, aggregated data is very unlikely to be proprietary. We again note that aggregated data may be in the Agencies' possession and must be produced.

As described in the request for information, different sets of coefficients are referenced in the SAFE Vehicles Rule and supporting documents. The Agencies have failed to acknowledge or clarify which coefficients the Vehicles Rule is actually based upon; that is, whether it was the coefficients provided in the PRIA or those identified in the actual model source code. When using the different coefficients to attempt to understand the Agencies' analysis, the model irrationally predicts negative fleet populations.[19] CARB appeals the response for this reason as well. CARB further notes, as we have discussed in more detail above, that failing to provide information upon which proposed rules are based is contrary to core principles of administrative law.

[18] To the degree 49 C.F.R. Part 512's trade secret rules for NHTSA apply (which NHTSA has not asserted), it is unclear whether any final determinations have been made under those provisions
[19] *See* CARB Detailed Comments, pp. 217-218.

12. CARB's Request:[20] Modeling tools developed by U.S. EPA including:

a. All files necessary to utilize - with the Advanced Light-Duty Powertrain and Hybrid Analysis (ALPHA) and the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles (OMEGA) - the response surface equations developed by U.S. EPA as identified or referenced in: "Peer Review of EPA's Response Surface Equation Report" (Docket ID No. EPA-HQ-OAR-2018-0283-0025); and SAE paper 2018-01-1273 authored by U.S. EPA (Docket ID No. EPA-HQ-OAR-2018-0283-0028).
b. All new or modified input files, source code, and executable files for U.S. EPA's OMEGA model developed since the release of the Proposed Determination in late 2016.
c. All current and new input files, source code, and executable files for ALPHA used for the Proposed Determination in late 2016 and/or modified since then.
d. All current and new pre-processors and their inputs used for the Proposed Determination in late 2016 or modified since then to categorize, sort, and rank technology packages and costs for use with OMEGA.

NHTSA's Response: *Records related to the EPA's modeling tools fall under that agency's jurisdiction and must be requested from the EPA directly.*

U.S. EPA's Response: *EPA's last publicly available version of the ALPHA and OMEGA model is on the EPA web site (and MTE docket) and dated November 2016 (released as part of the Proposed Determination). While EPA has draft updates to the OMEGA and ALPHA models since November 2016, these updates have not been made available to the public. In any event, the ALPHA and OMEGA models were not used to develop the proposed rule.*

CARB's Rebuttal: This response is improper and fails to meet U.S. EPA's FOIA obligations. FOIA obligates the agency to promptly provide records (5 U.S.C. § 552). U.S. EPA has failed to meet its statutory obligations. Moreover, U.S. EPA created the OMEGA model to assist in the analysis of technology costs when developing its greenhouse gas emissions standards.[21] The results of the OMEGA and ALPHA models are relevant for comparison to the CAFE model for checking its reliability. Even if these versions of the models were not used to develop the proposed rule,

[20] CARB's Requests nos. 10 and 11 are omitted.
[21] *See* Proposed Rulemaking To Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 74 Fed.Reg. 49,454, 49,545 (September 29, 2009).

there is no justification provided for withholding them from public review. Please provide the draft updates.

II. Reliance on the NERA-Trinity Analysis, in Whole or in Part, Would Compound the Procedural and Substantive Errors in the

As our substantive comments outlined, in the areas for which sufficient information was provided to allow for public review the SAFE proposal is rife with errors. The failure to provide meaningful information upon which the Agencies' relied for public review as outlined above and in other public comments increases the risk that a final rule will be similarly flawed. During the Agencies' review, it is important, therefore, that they rely upon only accurate information, and that – if they seek to rely upon new information – the public be given access to the information and sufficient opportunity for notice and comment.

The NERA-Trinity analyses provided by the Auto Alliance[22] purport to attempt to resolve some of the substantive problems with the Agencies' analyses, but it would be improper for U.S. EPA and NHTSA to rely upon them in a final rule—because the public is unable to fully understand and provide comment on the Alliance analyses, because critical information and modeling tools have been withheld (compounding similar procedural errors and informational gaps by the Agencies), because there has been inadequate opportunity to comment upon these analyses, and because even with inadequate information it is clear that the analyses are deeply flawed.[23] We highlight some of these obvious and critical flaws here to demonstrate the critical importance of a further public access to and review of this information, if it were to form the basis of any regulatory decision.

The information provided by the Auto Alliance and NERA-Trinity in support of its analysis is limited and inadequate to provide a reasonable opportunity for meaningful review. Should the Agencies adopt or rely on it, at minimum the following data and information would need to be made public for review:

- The NERA-Trinity models of the "New Vehicle Market" for new sales, scrappage, fleet composition, and vehicle miles traveled (VMT) and their underlying equations, coefficients, parameters, data and inputs, results, sensitivity tests, and justifications.
- The explanation and justifications for NERA-Trinity's calculation of consumers' willingness-to-pay for fuel economy, including any assumptions or data used or

[22] NHTSA-2018-0067-12073.

[23] Likewise, for all the reasons stated herein, it would be improper for NHTSA to rely upon the flawed NERA-Trinity Analyses in its final environmental impact statement. Any introduction of data that lacks scientific integrity would entirely undermine and distort the analysis of alternatives and environmental impacts in the final environmental impact statement, thereby depriving the document of any legitimacy. See DEIS Comments, Section II, B.

relied upon.
- The explanation and justifications for NERA-Trinity's calculation of "Petroleum Market Externalities," including any assumptions or data used or relied upon.

The NERA-Trinity models have not been subject to peer review. For the Agencies to adopt or rely upon the NERA-Trinity analysis, the Agencies would need to subject these models to the peer review process and make appropriate improvements based upon that review.

What review can be performed shows the analysis is fundamentally flawed and does not support relaxing the existing standards. The NERA-Trinity analyses expressly adopts many of the same fundamentally-flawed assumptions and approaches employed by the Agencies in the proposal, including assumptions and approaches concerning the costs of vehicle technology, the rebound effect, and that fleet size, rather than demand for transportation, determines total vehicle miles traveled.[24]

Our review of the limited information provided by NERA-Trinity and the Auto Alliance suggests that the underlying data has been aggregated, but we are unable to determine how or to what extent. For example, the final list of vehicle models used in the analysis, the nesting structure, and method for developing the coefficients used in the sales model to make its predictions are not provided. Without complete information, we have been unable to evaluate the soundness of the model's design, reproduce the analysis to confirm it reaches the results described, or perform any additional statistical tests. Such analysis is necessary to be able to determine whether the results are significant, unbiased, or reasonable and reliable.

A more troubling component of the analysis, which is equally, if not more, difficult to disentangle without more details or interim model outputs, is the scrappage model. As discussed in the enclosed memo from Professor Gillingham, the purportedly more reasonable fleet sizes produced in the Auto Alliance's analysis may be the result of one error masking another. The on-road fleet population is a combination of both new vehicle sales and used vehicle scrappage. Simply put:

The Total On-Road Fleet (this year) =	Total On-Road Fleet (last year) + New Sales (this year) – Scrapped Vehicles (this year).

In its analysis for the Auto Alliance, NERA-Trinity use a price elasticity for new vehicles of -1.0,[25] which apparently was selected based on a study from nearly two decades ago and is potentially an over-estimate of current and future elasticities. The NERA-Trinity

[24] *See*, e.g., Comment by the Institute for Policy Integrity at New York University School of Law (Policy Integrity), Docket #EPA-HQ-OAR-2018-0283-5083; NHTSA-2018-0067-12213, at 79-86.
[25] A price elasticity of -1.0 means that the percent increase in new vehicle prices will result in an equivalent percent decrease in new vehicle sales (all other attributes remaining constant), e.g. 5% increase in prices results in a 5% decrease in sales.

elasticity therefore predicts a greater decline in new vehicle sales under the existing standards (or conversely, a greater increase in new sales under the rollback standards) than a smaller elasticity, such as -0.2 that was derived by the Agencies' new sales model. As a result, even if the NERA-Trinity scrappage model were producing results inconsistent with economic theory as the Agencies' model does, i.e. greater demand of used vehicles at a higher price, then the elasticity of -1.0 would obscure that effect and paint the overall fleet size as being more stable. The predicted new vehicle sales would offset any economically inconsistent prediction of the number of vehicles scrapped. However, both the underlying components (i.e., the new sales estimate and the scrappage estimate) may be incorrect. Without additional information about the NERA-Trinity scrappage model, we cannot assess what is actually happening within the model to check for consistency with economic theory, but it seems possible that NERA-Trinity have simply masked, rather than corrected, the fundamental flaws in the Agencies' scrappage modeling.

Even without the information above, the analysis is patently flawed due to two major decisions made by NERA-Trinity that bias the analysis to ensure that it predicts benefits from a rollback. First, like the Agencies, the NERA-Trinity analysis assumes that automakers will install, without any regulations, available fuel-saving technology that will pay for itself within a specified time. As noted in CARB's Detailed Comments, there is no historical evidence for the assumption that automakers will systematically do so in the absence of standards requiring this technology.[26] In addition, the Auto Alliance provides no evidence in support of its assumption.[27] This has the subsequent effect of significantly, but erroneously, diminishing the increase in fuel consumption caused by a rollback. In other words, this assumption makes the rollback appear more beneficial, or at least less costly, than it would be by minimizing the increase in fuel consumption that would result from the rollback.

The NERA-Trinity analysis assumes manufacturers would install all technologies with a 60-month payback period, which is twice the 30-month payback period the Agencies used in the SAFE Vehicles Rule and further reduces the harm created by rolling back the standards. NERA-Trinity's 60-month payback period appears to be based on the willingness-to-pay calculation for fuel economy derived from its new sales model. However, this value represents the purported *consumer's* willingness-to-pay, which does not necessarily measure or capture a *manufacturer's* decision-making process. It is inappropriate to substitute, without reason, a consumer's valuation into an auto manufacturer's decision-making process, and NERA-Trinity and the Auto Alliance fail to

[26] *See* CARB Detailed Comments, p. 164, et seq.
[27] However, as noted in CARB's Detailed Comments pp. 164-66, such "over-compliance" has historically never occurred and average new fuel economy tracks very closely to the standards, while vehicles improve along other dimensions such as performance or size.

provide any justification for doing so. While consumer preferences may be important considerations for automakers' vehicle design decisions, other factors may also be relevant, related to engineering limitations, manufacturing capability, supplier constraints, or other financial and market conditions that may necessitate some compromises such that demand and supply for fuel efficiency will not be aligned perfectly. Even if it were appropriate to substitute a consumer's valuation, NERA-Trinity's 60-month willingness-to-pay estimate falls within a wide range of other estimates in the economic literature (as discussed in the Vehicles Rule) and they provide no justification as to why their value is superior to others, aside from circular consistency with the New Vehicle Market Model.

The Auto Alliance's suggested analysis uses an improper methodology for calculating the societal benefits from fuel economy improvements. The analysis relied solely on the CAFE Model as developed by the Agencies for technology costs and effectiveness, thereby incorporating the errors in that analysis.[28] However, NERA-Trinity considered only *some* of the fuel savings produced by the existing standards or, to put it more precisely, only *some* of the lost fuel savings that would be produced by the proposed rollback.

Specifically, the analysis includes only 60-months' worth of fuel savings rather than all of the savings that actually accrue over the life of a vehicle. While consumers may not value all future fuel savings at the time of a new vehicle purchase, there is no justification provided by the analysis for why *society* should not account for the benefit from all the actual fuel savings that actually occur—savings that leave money in the consumer's pocket and thus produce a real benefit, whether or not the consumer factored those savings into the initial purchase.

As Professor Gillingham noted, this is not supported in the relevant economic literature.[29] To not include the post-payback period fuel savings, all of which will be realized by the consumer and by society regardless of whether or not the individual consumer values them *at the time of making a vehicle purchase*, is wholly inconsistent with proper regulatory impact analysis. The amount a consumer is "willing to pay" for fuel savings when purchasing a vehicle—the consumer's *ex ante* valuation of fuel savings—is not relevant to the question of what costs and benefits actually accrue to society under emission and fuel economy standards. When undertaking cost benefit analysis, it is the costs and benefits that will actually accrue—*ex post*—that are relevant. NERA-Trinity provide no explanation of why consumers (or a society) would fail to fully value the money saved by driving more fuel efficient vehicles, even if consumers did not fully value these savings when making decisions about which vehicles to purchase.

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[28] *See* CARB Detailed Comments at p. 93, et seq.

[29] See enclosed comments from Professor Ken Gillingham, p. 5.

NERA-Trinity's analysis here is internally inconsistent. It accounts for *all* of the mobility and refueling benefits associated with improved fuel economy over the *full lifetime* of vehicles, as opposed to accounting for only some of these benefits as with the approach taken for fuel savings. NERA-Trinity provides no explanation for why two different methodologies are used for related benefits.

The analysis appears to calculate the increase in fuel tax revenue from more than the first five years of vehicle usage; this is also inconsistent with the approach taken for fuel savings. Moreover, the fuel tax revenue is not appropriate to include as a societal benefit because, as the Agencies note, fuel taxes are transfer payments and thus should be excluded.[30]

As noted above, the Auto Alliance's analysis perpetuates some of the Agencies' erroneous assumptions and thus cannot support a rollback. Regardless of what payback period is selected, by relying on the Agencies' CAFE Model and inputs used to support the proposal, the technology costs remain overstated due to the reasons previously discussed in CARB's comment letter. These include, but are by no means limited to, invalid input assumptions, algorithms that do not function correctly, and a failure to maintain performance neutrality with the addition of new fuel-saving/emission-reducing technologies.

The NERA-Trinity analysis uses the same exaggerated rebound effect of 20 percent based on a selective review of the literature as well as the Agencies' dramatically undervalued domestic social cost of carbon. NERA-Trinity also adopts the Agencies' incorrect assumptions regarding the sources of crude oil and where it will be refined – dramatically limiting the upstream emissions impacts of the increased fuel consumption under the rollback. Like the Agencies' analysis, the NERA-Trinity analysis fails to interact fleet size and total vehicle miles traveled, assuming that, regardless of the number of vehicles in operation, vehicles will each be driven a fixed, age-specific number of miles, which leads to unsupportably large VMT estimates under the original standards and therefore falsely inflates the benefits of the rollback.

Given the limited information provided by the Auto Alliance, it is impossible to recreate NERA-Trinity's analysis and correct all of the errors described here (or identify any others that may exist). However, these errors alone illustrate that any reliance on the NERA-Trinity analysis, in whole or in part, would be entirely arbitrary. In comparison, CARB's prior critique of the SAFE Vehicles Rule analysis, the previous analyses by the Agencies and CARB that concluded that existing standards remain appropriate, and the

[30] 83 Fed.Reg. at 43,088.

underlying TAR demonstrate that the NERA-Trinity conclusions are likely wrong and that the rollback would result in significant net societal costs.[31]

III. Conclusion.

Having failed to meet their obligations under the law, NHTSA and U.S. EPA must withdraw the SAFE Vehicles Rule. CARB continues to evaluate progress towards reducing motor vehicle emissions and remains willing to discuss sensible, supported adjustments to ensure the emissions are reduced while promoting a sustainable economy, clean transportation system, and an innovative, competitive manufacturing capability.

If you have any questions regarding the enclosed materials, please contact Mr. Pippin C. Brehler, Senior Attorney, at Pippin.Brehler@arb.ca.gov or by phone at (916) 445-8239.

Sincerely,

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[31] *See* CARB's Detailed Comments at 330-336.

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