DECLARATION OF MARGO OGE

I, Margo Oge, declare as follows:

Background

1. From 1994 until my retirement in 2012, I served as the Director of the Office of Transportation and Air Quality ("OTAQ") of the Environmental Protection Agency ("EPA"). In that capacity, I oversaw development of EPA's greenhouse-gas ("GHG") emission standards for light-duty vehicles. I also oversaw OTAQ's creation, development, and use of the Optimization Model for reducing Emissions of Greenhouse gases from Automobiles ("OMEGA model").

2. I hold bachelor's and master's degrees in engineering from the University of Massachusetts, Lowell. I also studied economics at George Washington University and leadership and management at Harvard University's John F. Kennedy School of Government.

3. I have received Presidential Awards from President Bill Clinton and President George W. Bush. I have also received the California Air Resources Board's Haagen-Smit Clean Air Award, given to recognize individuals' significant achievements in air quality, and I have received numerous other environmental and industry awards in recognition of my work on environmental issues.

4. I currently serve on a number of boards and committees, including Vice Chair at the International Council on Clean Transportation (ICCT), the Global Sustainability Council for Volkswagen Group, and the Union of Concerned Scientists. I also serve on the National Academy of Science (NAS) Advisory Committee on Climate Change Research, and serve as a distinguished fellow at Climate Works Foundation.

EPA's Greenhouse Gas Emission Standards for New Motor Vehicles

5. In 2009, EPA found that current and projected atmospheric concentrations of GHGs threaten public health and welfare and that GHG emissions from new motor vehicles contribute to this pollution.[1] EPA's publication of those findings triggered its duty under the Clean Air Act to establish federal standards for GHG emissions from new motor vehicles.

6. The Clean Air Act requires that such standards "take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period."[2]

7. For any given level of GHG emissions, there are a vast number of combinations of emissions-reduction technologies which could produce the GHG emissions reductions needed to bring an automobile manufacturer into compliance with that standard. Yet different technologies have different costs, and the lead time that a manufacturer needs to apply technologies into its fleet—as constrained by standard refresh and redesign cycles for vehicles—can be affected by cost feasibility. The variations mean that, in order to decide the "necessary" lead time and associated costs for an emission standard under consideration, EPA must examine how automobile manufacturers are expected to apply different emission-reduction technologies in their fleets to meet a given emission standard.

Development and History of Public Disclosure of the OMEGA Model

8. To enhance the agency's understanding of that particular factual issue, OTAQ—under my leadership—created and developed the Optimization Model for reducing Emissions of Greenhouse Gases from Automobiles ("OMEGA"), a computational tool that projects how

[1] EPA, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

[2] 42 U.S.C. § 7521(a)(2).

automobile manufacturers would apply technologies in a cost-effective way and then projects the cost of compliance to achieve greenhouse gas emissions reductions. EPA used this tool to generate data to inform the first and second phases of its GHG emission standards for light-duty vehicles (issued in 2010 and 2012, respectively), the first phase of standards for heavy-duty vehicles (issued in 2011), and the initial planning for the second phase of standards for heavy-duty vehicles (later issued in 2016).

9. Consistent with practices of good government, the development of the OMEGA model was a collaborative and open process. OTAQ staff worked with their counterparts at the National Highway Traffic Safety Administration and the California Air Resources Board, and the model was subject to a rigorous peer-review process. EPA also received and responded to comments on the OMEGA model from automobile manufacturers and other interested parties. The model's algorithms and inputs were regularly updated as technologies and their costs changed. Tear-down analyses and research were used to validate the model's outputs.

10. The inputs to OMEGA do not reflect the assessment of any single EPA employee, but rather consist of datasets of publicly available information and the collective assessments of agency experts based on the best available science and peer-reviewed research.

11. The contours of the OMEGA model itself—including its source code—do not reflect the work of any single EPA employee, but rather the collective work of many different agency experts based on the best available science and peer-reviewed research.

12. OTAQ intentionally designed the OMEGA model to be transparent and publicly accessible. The model was designed not to incorporate or rely on confidential information from manufacturers or any other businesses. The model intentionally used open-source software.

13. Beginning in 2010, with the first full version of the model used to inform EPA's analysis, the public was able to download the model itself, along with all associated files, so that interested stakeholders could inspect OTAQ's results and conduct their own modeling runs.

14. Because emissions-reduction technologies, the vehicle fleet, and the standards themselves change over time, EPA periodically updated the model. OTAQ has historically released these updates to the public—with each release including not only the current version of the OMEGA model source code but also the latest inputs, pre-processors, and outputs.

15. As is typical of OTAQ models, "OMEGA is primarily an accounting model" that does not contain or reflect subjective policy judgments, nor does it attempt or purport to balance the statutory or regulatory factors EPA must consider when establishing standards.[3] Each run of the OMEGA model generates a comprehensive, voluminous, but user-friendly data set to inform EPA's determination of the appropriate GHG emissions standards for new motor vehicles.

16. Because the OMEGA model and its outputs simply reflect the inputs fed into the model, and EPA uses different sets of inputs to reflect different scenarios, disclosing the model and associated files did not reveal internal agency deliberations during the rulemaking process, or the reasons why EPA might or might not adopt a particular standard.

17. As OTAQ Director, I was never concerned about disclosure of the OMEGA model to the public harming the agency or its deliberative process. To the contrary, I expected that the model and the files needed to use it would continue to be released to the public, so that the model could continue to be refined using public comments.

[3] EPA, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards* at 3-3, EPA-420-R-12-016 (Aug. 2012).

Mechanics of the OMEGA Model

18. The OMEGA model draws on a variety of numerical inputs to project, for each of several hypothetical standards that EPA might establish for GHG emissions from new vehicles in future model years, how manufacturers will opt to comply with those standards and the associated costs—in other words, which emissions-reducing technologies manufacturers will use, when they will incorporate those technologies into each of their vehicles, and how much those technologies will cost to apply.

19. Among the data inputs to the OMEGA model are a quantitative description of the vehicle fleet, including automobile-manufacturer sales, emissions, and existing emission-control technologies. The OMEGA model is also supplied with an externally created list of technologies (or packages thereof) to add to different vehicles; schedules of costs and effectiveness of those technologies at reducing GHG emissions, alone and in combination with other technologies; and constraints on the percentage of vehicle sales to which each technology can be added on different time scales. The OMEGA model simply combines this data with other economic inputs, like fuel prices, to project how each manufacturer will apply technologies to meet various GHG emission targets. Modeling is an efficient, rigorous way for EPA to investigate the lowest-cost technology pathway under different regulatory scenarios, and the cost to meet each specific emissions target.

20. The end product of the OMEGA model is a series of data output files. These files contain detailed information about the technologies projected to be added to each vehicle and the resultant costs and GHG emissions. The outputs do not recommend policies; they are objective data points that reflect straightforward application of the OMEGA model to the inputs provided.

21. These outputs provide a factual foundation that EPA can use to consider the options for GHG emission standards, so that EPA can set a standard compliant with the Clean

Air Act. I agree with the agency's 2010 statement that "[t]he OMEGA modeling is used by EPA to forecast potential compliance paths, not to determine the level of the standard."[4] I am not aware of any EPA official who perceived that OMEGA itself proposes agency policies.

22. *After* conducting model runs, EPA employees would analyze the raw outputs of the model, decide on the key takeaways, and summarize selected model results in decision memos and briefings for policymakers. Those policymakers would then evaluate different regulatory options before final decisions on the level and timing of the standards were made.

EPA's Recent Attempts to Withhold the OMEGA Model from the Public

23. I have reviewed the discussion in EPA's August 2018 proposed rule to revise the model year 2021-2026 GHG emission standards indicating that the agency is *not* relying on the OMEGA model to inform that rulemaking.[5] I also have reviewed a letter from EPA to an official of the California Air Resources Board stating that the OMEGA model was "not used to develop the proposed rule."[6]

24. I understand that EPA did not disclose the OMEGA model or associated files in connection with this proposed rulemaking, contrary to historical EPA practice. When I directed OTAQ, I oversaw the affirmative publication of four different iterations of the OMEGA model (v1.0.2, v1.3.1, v1.4.0, and v1.4.1), along with all supporting files needed to run each version of

[4] EPA, Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, *EPA Response to Comments Document for Joint Rulemaking* at 4-11, EPA-420-R-10-012a (Apr. 2010).

[5] EPA & NHTSA, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*, 83 Fed. Reg. 42,986, 43,000-01, 43,022 (Aug. 26, 2018).

[6] Letter from John Shoaff, Director, EPA Office of Air Policy and Program Support, to Ellen Peter, California Air Resources Board, at 2 (Oct. 23, 2018) (attached hereto).

the model.[7] The OMEGA model is intended to be public, and EPA's newfound unwillingness to release it goes against the agency's stated goals of transparency and public engagement.

25. I have reviewed EPA's letter to the Natural Resources Defense Council and the Environmental Defense Fund of March 4, 2019, in which the agency refuses to release the latest full version of the OMEGA model on the ground that it is "exempt from disclosure because it is predecisional and deliberative and would harm agency decision making if released."

26. Based upon my experience and previous Agency practice, I do not believe the release of the latest full version of the OMEGA model (including the source code) would harm the agency's decision making process. And I do not believe the release of OMEGA would disclose the content of any agency policy discussions. Disclosure of the model and associated files *improved* EPA's decision making while I was at EPA through peer review and extensive feedback from stakeholders. I also do not understand how "agency decision making" could be harmed by release of a model that the agency has stated it is not relying on to make its upcoming decision.

I declare under penalty of perjury that the foregoing is true and correct.

Margo Øge

Dated April 5, 2019

[7] *See* EPA, Optimization Model for reducing Emissions of Greenhouse Gases from Automobiles (OMEGA), https://www.epa.gov/regulations-emissions-vehicles-and-engines/optimization-model-reducing-emissions-greenhouse-gases (last accessed April 4, 2019).