May 20, 2019

Docket Number NHTSA-2019-0016
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: General Motors, LLC – Receipt of Petition for Temporary Exemption From Various Requirements of the Safety Standards for an All-Electric Vehicle With an Automated Driving System [Docket No. NHTSA-2019-0016]; 84 *Fed. Reg*. 10182 (Mar. 19, 2019)

Docket Number NHTSA-2019-0016:

Lyft, Inc. ("Lyft") submits these comments in support of General Motors, LLC's ("GM's") Petition for Temporary Exemption from Various Requirements of the Safety Standards for an All-Electric Vehicle with an Automated Driving System ("Petition"), Docket No. NHTSA-2019-0016. 84 *Fed. Reg.* 10182 (Mar. 19, 2019). Lyft appreciates the Agency's leadership with respect to Automated Driving System ("ADS") technology and welcomes this opportunity to comment on the Petition.

Introduction

Lyft's mission is to improve people's lives with the world's best transportation. In the last seven years, we have made significant progress towards that mission, and solidified our role as a powerful driver of positive change with respect to economic empowerment, enhancing the efficiency of public transportation, and connecting communities previously underserved by prior transportation options. Since our launch in 2012, Lyft has worked to reduce traffic and

congestion, increase mobility options, reduce D.U.I.s, stimulate local economies, and provide economic opportunities to our drivers. And this is only the beginning.

Looking ahead, Lyft believes that self-driving vehicles will be a critical component of improving the safety of America's roads and highways. Today, 94% of the nearly 38,000 on-road deaths per year are caused by human error and are preventable. Lyft's commitment to self-driving technology stems from our belief that we can foundationally change these statistics. But to achieve these lifesaving benefits, consumers need to trust this technology. We take pride in our loyal customer base who rely on Lyft to provide them with an affordable, convenient, and reliable experience. As we develop and deploy self-driving vehicles, our commitment to providing reliable rides will not change. To accomplish this, the technology itself must be both safe and accessible, which is why in addition to developing our own ADS technology, we have focused on democratizing access to self-driving vehicles through our platform where we partner with the world's best ADS developers.

Lyft is committed to pursuing the safe testing, development, and widespread deployment of self-driving vehicles, as ADS technology has significant potential for improving safety on our roads while providing reliable and efficient transportation. That is why Lyft is encouraged by NHTSA's action with respect to GM's Petition, which represents a major step toward real-world deployment of autonomous vehicles. Lyft fully supports granting the Petition, as we believe that GM has sufficiently demonstrated that an exemption is independently warranted under both of the exemption standards relied upon by GM.

Lyft takes this opportunity to present its views with respect to certain areas where NHTSA is seeking public comment.

Statutory Basis for the Exemptions (Response to Question 1)

GM seeks exemption from several Federal Motor Vehicle Safety Standards ("FMVSSs") on the basis that the exemption will (1) facilitate the development of new motor vehicle safety features (§ 30113(b)(3)(B)(ii)) and/or (2) facilitate the development of low-emission vehicles (§ 30113(b)(3)(B)(iii)). *See* 48 *Fed. Reg.* at 10184. Under subsection (B)(ii), a manufacturer must demonstrate that the exemption would make easier the development or field evaluation of a new motor vehicle safety feature providing a safety level at least equal to the safety level of the standard. Under subsection (B)(iii), a manufacturer must demonstrate that the exemption would make the development or field evaluation of a low-emission motor vehicle easier and would not unreasonably lower the safety level of that vehicle. In this regard, NHTSA asks which of these basis is more appropriate for the Agency to use in evaluating GM's petition. 84 *Fed. Reg*. at 10189. Lyft believes that both bases are independently appropriate for evaluating GM's petition and the subject vehicles, and that GM has provided sufficient information to enable the Agency to evaluate – and, indeed, *grant* – the Petition under both standards.

With respect to the Petition and the basis under § 30113(b)(3)(B)(ii), the subject vehicles are equipped with numerous advanced safety features that comprise the vehicle's ADS technologies. GM describes in ample detail the various safety features that will be deployed and evaluated for further development in the subject vehicles. *See generally,* GM Petition at pp. 23-32; GM Petition Appendix II. Accordingly, the Petition clearly meets or exceeds the minimum threshold criteria for a field evaluation of new motor vehicle safety features. As such, it would be appropriate for NHTSA to analyze the petition to determine whether the vehicle provides "a safety level at least equal to the safety level of the standard" under §30113(b)(3)(B)(ii). As the quoted language suggests, in making its assessment, NHTSA should focus specifically on the performance aspects

addressed in each standard for which an exemption is sought, and evaluate how the subject vehicles will perform those functions. Thus, for example, when evaluating the requested exemption under FMVSS 135, the Agency should focus on the performance of the service brake system upon activation of the service brakes regardless of whether activation is directed by the system or a human driver. In other words, the Agency need not evaluate the criteria that would trigger an automated braking event, just as the relevant safety standard does not regulate a human driver's braking decisions and responsiveness. The Agency should avoid prematurely establishing metrics that compare an ADS system to an artificially "typical" human driver. As GM posits, a vehicle's performance of these functions can be regulated under NHTSA's safety defect authority.

Evaluation of the Petition under § 30113(b)(3)(B)(iii) is equally appropriate, as GM has sufficiently demonstrated that an exemption will facilitate its field evaluation of a low-emission vehicle. As GM explains (Petition, pp. 34 -35), field deployment of the subject vehicles will enable GM to generate data and evaluate the computer system and sensors and their interaction with the vehicle's power supply for the zero-emission propulsion system, as well as to evaluate the impact of using ADS instead of human drivers on the performance of the propulsion system. As important, an exemption will allow evaluation of these vehicles *in their intended application*: a mobility-on-demand service. Lyft believes that these evaluation objectives are well suited for an exemption request under § 30113(b)(3)(B)(iii). Accordingly, under this standard, GM need only demonstrate that the exemption "would not *unreasonably lower* the safety level of that vehicle" (emphasis added). The statutory language under this basis suggests that the Agency should undertake a holistic evaluation of the safety of the vehicle (rather than a standard-by-standard

approach as under (B)(ii)), but significantly, under this approach, a manufacturer need not demonstrate *safety equivalency*.

In considering this and future exemption petitions, Lyft urges the Agency to embrace as much flexibility as possible in exercising its exemption authority under the Safety Act and in assessing the safety profile of ADS technology. As the provider of a mobility-on-demand, *Open Platform* for self-driving vehicles from a variety of companies, Lyft views a level regulatory playing field as critical to the development of a healthy marketplace for ADS technology, which in turn will increase safety benefits of this technology. In this regard, we note that NHTSA's temporary exemption regulation, 49 C.F.R. Part 555, purports to limit its application to "manufacturers of motor vehicles and passenger motor vehicles" (*see* §555.3), thereby potentially precluding other entities involved in testing, developing, manufacturing, and deploying ADS technologies from seeking exemptions. Impacted entities could include educational institutions, technology companies, vehicle modifiers and equipment manufacturers involved in developing ADS hardware and software, all of which are playing a critical role in the development and safe deployment of ADS technology. Constraining these entities' ability to conduct public road testing of their technologies will place them at a significant competitive disadvantage and will unnecessarily hinder the full realization of the safety benefits that ADS technologies provide. We further note that the exemption authority contained in 49 U.S.C. § 30113(b)(1) does not limit exemptions to vehicle manufacturers. Rather, it broadly permits NHTSA to exempt *motor vehicles* from an applicable FMVSS, and specifies that NHTSA "may begin a proceeding . . . when *a manufacturer* applies for an exemption or a renewal of an exemption" (emphasis added). Under the definition in 49 U.S.C. § 30102(a)(6), "manufacturer" would include any person "manufacturing or assembling motor vehicles or motor vehicle equipment" or "importing motor

vehicles or motor vehicle equipment for resale." Likewise, 49 U.S.C. § 30114(a) grants NHTSA broad authority to exempt vehicles and equipment for purposes of research and testing (and other specified purposes). Indeed, in seeking comment on whether the Agency can (and should) use its authority under Section 30114 to grant exemptions for "vehicles with high and full driving automation that do not meet existing standards and whose manufacturers are or seek to become engaged in research and demonstrations," the Agency noted the importance of creating a level playing field. *See* Pilot Program for Collaborative Research on Motor Vehicles With High or Full Driving Automation (Advance Notice of Proposed Rulemaking), 83 *Fed. Reg*. 50872, 50881-50882 (Nov. 26, 2018). Permitting manufacturers of all types to petition for an exemption would remove unnecessary regulatory barriers and permit entities other than traditional vehicle manufacturers to develop and deploy ADS technologies.

Limited Deployment in Evaluating Safety Equivalence (Response to Question 17)

With respect to factors that NHTSA should include in evaluating the safety equivalence of a vehicle, NHTSA asks:

17. To what extent and how should GM's contemplated limited deployment (e.g., in a petitioner-controlled rideshare program, with established ODD constraints and the ability to pull vehicles off the street to remedy, including through software updates, any potential safety issues that might arise) be considered when evaluating safety equivalence? Does GM's continuous control over the exempted vehicles and the ability to make continual improvements in vehicle safety performance through software updates argue for acceptance of a greater degree of uncertainty about safety effects than in the case of a petition for exemption of vehicles to be sold to the public?

84 *Fed. Reg*. at 10190. (*See also* NHTSA Question 18)

In evaluating safety equivalence, Lyft fully supports NHTSA considering factors such as an ADS vehicle's operational design domain (ODD)[1] and the ability of an entity to continually monitor and control ADS vehicles, including the ability of an entity to ground its ADS vehicle fleet and/or rapidly roll out safety-critical updates. Control over an ADS vehicle fleet in a ridesharing context allows a rideshare company to closely monitor and control the performance of these vehicles, including setting and controlling the ODD, customer use cases, hours of operation, vehicle maintenance, and other performance aspects. Controlling these factors over the life of an ADS vehicle will significantly constrain potential risks. A rideshare company can, for example, avoid operating ADS vehicles without safety drivers in certain types of inclement weather or on types of roads that are deemed difficult to navigate, until the ability of its ADS to operate safely in those conditions is established. Importantly, if a safety issue is identified, a rideshare company is in a position to reduce or alter the ODD of a vehicle or fleet, ground a vehicle or fleet, and/or roll out software or hardware updates at a pace and efficacy that may not be feasible or practicable with vehicles that are sold to and controlled by individual vehicle owners.

The Petition provides detailed explanations of the specific standards for which exemption is sought and the accompanying appendices provide detailed methods and strategies describing how the subject vehicles would approximate these specific performance requirements. *See, e.g.,* GM Petition at pp. 23 – 32 and Appendix II at pp. AII-13 – AII-15, AII-17 – AII-23. Based on this supporting information, Lyft believes the Petition adequately demonstrates the vehicle's safety performance with respect to each of the standards for which an exemption is sought. Moreover,

[1] The Society of Automotive Engineers defines ODD as follows: "Operating conditions under which a given *driving automation system* or *feature* thereof is specifically designed to function, including, but not limited to, environmental, geographical, and time-of-day restrictions, and/or the requisite presence or absence of certain traffic or roadway characteristics." Recommended Practice J3016 (June 2018) *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles,* Section 3.22.

control over the exempted vehicles and the ability to make continual improvements is more likely to "make easier the development or field evaluation" of ADS technology and of a low-emission vehicle by providing valuable data and experience with these technologies than exempted vehicles that are sold to private entities. A private owner may not be willing to share this valuable field information with the entity developing and improving these technologies.

As the Agency considers this specific exemption petition, we urge it to also consider developing a set of generalized safety exemptions that can be applied to all entities developing ADS technology when relevant, rather than requiring each applicant to substantiate the safety of its exemption. For example, NHTSA could determine that, when certain conditions are met, it is acceptable to remove traditional driver controls if there will be no human driver present in the vehicle, without requiring each ADS developer to provide the safety of removing traditional driver controls in its ADS vehicles.

Conclusion

Lyft appreciates the opportunity to comment on GM's exemption petition. Lyft believes that both bases under which an exemption is sought are independently appropriate and that GM has provided sufficient information to support a grant of its petition under either approach. Further, we support consideration of such factors as operational control over an ADS vehicle fleet in a ridesharing context to demonstrate mitigation of safety risks when evaluating safety equivalence or to demonstrate that an exemption would not unreasonably lower the safety level of that vehicle.

Because NHTSA's approach to evaluating the GM Petition may become a model for how the Agency addresses future petitions, we urge the Agency to adopt a flexible approach that places all entities involved in testing, developing, manufacturing, or deploying ADS technologies

on a level playing field. To instead limit the availability of exemptions to traditional vehicle manufacturers would skew the competitive landscape against other types of entities and slow the overall development and adoption of ADS technology.

For self-driving vehicles to reach their potential and for the public to capture the immense safety benefits they promise in reducing the deleterious risks of human driving, developers will need to be permitted to deploy these vehicles on public roads. Continued cooperation between NHTSA and the industry will ensure that these technologies help prevent the tens of thousands of tragedies experienced by families each year due to fatal accidents caused by human errors. Lyft looks forward to playing a pivotal role in the development and safe deployment of ADS technology.