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By regulations.gov

National Highway Traffic Safety Administration (NHTSA)
Docket Management Facility (M-30)
West Building, Ground Floor, Room W12-140
1200 New Jersey Avenue S.E.
Washington, DC 20590

Re: Ford Motor Company (Ford) - Petition for Temporary Exemption from Various Requirements of the Federal Motor Vehicle Safety Standards (FMVSS) for an Automated Driving System (ADS)-Equipped Vehicle; Doc. No. NHTSA-2022-0066

Ladies and Gentlemen:

The National Automobile Dealers Association (NADA) represents more than 16,000 franchised automobile and truck dealers who sell new and used motor vehicles and engage in service, repair, and parts sales. Together they employ over 1,100,000 people nationwide, yet most are small businesses as defined by the Small Business Administration.

Last July, NHTSA requested comment on a Ford petition for a two-year exemption from various FMVSS for an ADS-equipped Escape platform vehicle (ADS Escape)¹ Designed to provide on-demand mobility and delivery services in Ford-controlled fleets, the ADS Escape will lack traditional manually-operated driving controls, like steering wheels, but will be capable of being operated manually with non-traditional controls by trained operators only.² Ford specifically seeks exemption from portions of FMVSS Nos. 101 (Controls and Displays), 102 (Transmission Shift Position Sequence), 108 (Lamps, Reflective Devices, and Associated Equipment), 111 (Rear Visibility), 135 (Light Vehicle Brake Systems), and 138 (Tire Pressure Monitoring Systems). In response, NADA offers the following comments and suggestions.

I. Introduction

Ford is availing itself of a process set out in the National Traffic and Motor Vehicle Safety Act (the Act) which enables manufacturers to request temporary exemptions from otherwise applicable FMVSS requirements for certain noncompliant vehicles they seek to manufacture for distribution and use in commerce.³ Temporary exemptions, if granted, are from the Act's

¹ 87 Fed. Reg. 43602, *et seq.* (July 21, 2022).

² 87 Fed. Reg. at 43604. Exemptions for ADS-equipped vehicles from FMVSS requirements for steering wheels and foot pedals for braking and accelerating are no longer necessary by virtue of a final rule entitled Occupant Protection for Vehicles with Automated Driving Systems. See 87 Fed. Reg. 18650, *et seq.* (March 30, 2022).

³ 49 U.S.C. §30113(b).

general mandate that persons may not manufacture for sale, sell, offer for sale, introduce or deliver for introduction in interstate commerce, or import new vehicles unless they comply with applicable FMVSS requirements.⁴ Notably, Ford does not seek application to noncompliant Escape vehicles of an alternative section of the Act designed for limited testing and evaluation.⁵

Any exemption granted by NHTSA for the ADS Escape must be consistent with both the public interest⁶ and the purposes and goals of the Act.⁷ Thus, evaluation of Ford's petition requires NHTSA to determine whether (i) the safety purpose of each FMVSS at issue will still be met, and (ii) the ADS Escape will operate in at least as safe a manner as a human driver. This latter criterion requires that the ADS Escape be subject to a full and rigorous safety testing, evaluation, and verification protocol.

II. Statutory and Regulatory Grounds for Exemption

Ford submitted its petition pursuant to 49 U.S.C. §30113(b)(3)(B)(iv) which governs exemption requests premised on the assertion that an applicant is otherwise unable to sell a motor vehicle with an overall safety level or impact protection at least equal to the safety level of non-exempt vehicles.⁸ The regulation implementing this statutory section requires Ford to provide:

- (i) An analysis of how the vehicle provides the overall level of safety or impact protection at least equal to that of nonexempted vehicles;
- (ii) Substantiation that compliance would prevent the sale of the vehicle;
- (iii) A statement whether, at the end of the exemption period, the manufacturer intends to comply with the standard;
- (iv) A statement that not more than 2,500 exempted vehicles will be sold in the United States in any 12-month period for which an exemption may be granted.⁹

Ford's petition describes the ADS Escape's safety features and provides analysis in support of its claim that the vehicle will provide a level of safety that is at least equal to that established by each of the FMVSS requirements for which an exemption is sought. It also includes statements indicating that not more than 2,500 ADS Escapes per year will be introduced into a captive fleet, and that during the two-year exemption period Ford will work with NHTSA and other stakeholders on regulatory changes to the FMVSS and on ADS standards designed to address ADS-operated vehicles.

⁴ 49 U.S.C. §30112(a)(1)

⁵ 49 U.S.C. §30112(b)(10). The limitation of this provision to testing and evaluating vehicles only, apparently would not extend to Ford's plan to commercially use its ADS vehicle in controlled fleets.

⁶ 49 U.S.C. §30113(b)(3)(A).

⁷ See 49 U.S.C. §30101 ("The purpose of this chapter is to reduce traffic accidents and deaths and injuries resulting from traffic accidents. Therefore, it is necessary...to prescribe motor vehicle safety standards for motor vehicles and motor vehicle equipment in interstate commerce....").

⁸ See 87 Fed. Reg. at 43603-04.

⁹ 49 CFR § 555.6(d).

Ford further contends that compliance with the FMVSS would prevent the sale of its ADS Escape because “having active driving controls and communications would introduce an unacceptable risk to safety” when the vehicle is operated by the ADS.¹⁰ Ford also states that it does not intend to sell its ADS Escapes. Instead, Ford intends to operate them in captive fleets and will continue to do so at the end of the two-year exemption period for up to their normal service lives.¹¹ Ford does not intend to comply with the FMVSS at the end of the exemption period and states that it intends to apply for an exemption renewal unless new regulations governing ADS operation are promulgated by that time. NHTSA should carefully analyze whether Ford has satisfied the requirements for the requested exemptions.

III. Safety Analyses

Prior to granting any temporary exemption for the ADS Escape, NHTSA should thoroughly evaluate Ford’s “equal or better” safety claims. Moreover, an exemption should only be granted upon a conclusive determination that the ADS Escapes will be operated subject to full and rigorous safety testing, evaluation, and verification protocols designed to demonstrate, among other things, that the Escape’s ADS will perform in a manner that is at least as safe as a human driver. And while NHTSA need not consider protections for human drivers during ADS operation, it must focus its attention on prospective ADS Escape passengers and on other road users ranging from human drivers and passengers in other motor vehicles to pedestrians.

Given that this is one of only two FMVSS exemption petitions under consideration by NHTSA for SAE Level 4 ADS-operated vehicles, the agency should take care to evaluate the potential impact on the public’s perception of, and confidence in, such vehicles. To encourage the marketplace acceptance of ADS-operated vehicles, the public needs to know that the ADS Escape will compare favorably to similar FMVSS-compliant, human-controlled Ford vehicles, and that its ADS will operate at a safety level equal to or greater than an average human driver. SAE Level 4 ADS-operated vehicles that cannot match the safety record of the average human driver will, by definition, have a negative impact on road safety and, as such, will undermine the future sale, operation, and use of such vehicles.

Moreover, granting FMVSS exemptions for the ADS Escape should be the start, not the end, of NHTSA’s involvement. For example, an ongoing sharing and analysis of critical safety data will

¹⁰ Ford does not proffer any substantiation for this assertion other than to state that if certain FMVSS-mandated driver controls, displays, indicators, warnings, and telltales were available during ADS operation of the ADS Escape, passengers might act contradictory to that of the ADS and interfere with the driving task. NHTSA must carefully evaluate this assertion given, as discussed below, the safety function these controls, displays, indicators, warnings, and telltales serve, and that Ford’s petition indicates that its ADS Escapes will be equipped with these features and that they will be functional when they are operated in manual mode.

¹¹ Although it may be easier to collect and evaluate operational data when ADS Escapes are in Ford controlled fleets, the requested FMVSS exemptions do not appear to turn on who could own or operate the vehicles in question, i.e., such exemptions conceivably could apply to ADS Escapes sold through Ford dealerships for operation by independent fleets.

be key to evaluating the relative safety performance of the Escape and its ADS. Ongoing safety data analysis also will help NHTSA determine how to modify existing FMVSS to accommodate future ADS-operated vehicles without jeopardizing intended safety benefits. For any documented crash incidents that occur during the exemption period, NHTSA should analyze how a similar human driven vehicle would have performed.

When comparing ADS-operated Escapes with human-operated vehicles, NHTSA should not limit itself to metrics such as accidents-per-mile. For example, Ford and NHTSA should collect and analyze data on how well the ADS Escape operates mechanically and how it complies with local traffic laws and established road customs. Among other things, mechanical failures and traffic law noncompliance can indicate whether an ADS (or human driver) operated vehicle is likely to become involved in future accidents. Ford also should commit to an appropriate level of computer simulation modeling of the Escape's ADS-operated safety performance.

Ford and NHTSA should also carefully analyze any instance where the ADS Escape is put into a minimal risk condition. Such conditions typically reflect a vehicle or ADS malfunction and possibly potential safety or design defects. Moreover, given public concerns regarding the ability of SAE Level 4 ADS vehicles to attain minimal risk conditions without causing other passenger or traffic safety concerns, any approval of the Ford petition should involve a detailed discussion of how and under what conditions the ADS Escape will achieve minimal risk conditions, and how passengers are to be cared for once such conditions occur. The petition does not provide sufficient information about how Ford will communicate with passengers, necessary support services, or local authorities and emergency responders if the vehicle achieves a minimal risk condition. For example, it may be helpful to know if Ford will arrange for a dispatch from the nearest Ford dealership to assist both passengers and the Escape itself, and what specific types of circumstances will prompt Ford to contact local authorities or emergency responders.

In addition, NHTSA should also carefully consider the potential benefits of enabling ADS Escape passengers to monitor its performance under ADS operation as they may be the first to recognize when an ADS is behaving erratically, or when a serious, but rare, road safety hazard is developing. As with emergency brakes on transit vehicles, Ford and NHTSA must analyze and balance the potential safety benefits associated with enabling passengers to override an ADS Escape using emergency brakes or "kill switches" against the potential misuse of such devices.

NHTSA must closely evaluate Ford's requested exemption from existing FMVSS-mandated driver controls, displays, indicators, warnings, and telltales to determine the extent to which they offer safety benefits beyond those associated with human operation. To what degree would warning lights, turn signal indicators and other displays, indicators, and telltales provide passengers with critical situational awareness that might help them assess a vehicle's operation and make informed decisions about whether (and how) to begin, continue, alter, or terminate a ride (or even to abandon a vehicle)? For example, passengers should know prior to or soon after entering an ADS Escape, if it is operating on a low battery charge that could prevent it

from completing a trip and even lead to a safety incident. As alluded to above, a critical public interest is the need for passengers and other road users to have the information they need to trust in the safety performance of ADS-operated vehicles.

Ford's petition recognizes the importance of passenger awareness and involvement and indicates that select telltales, indicators, and controls will be presented to passengers, including those related to restraints and occupant protection, but not those related to the driving task. NHTSA must carefully evaluate Ford's exemption requests in this regard given the important safety function the controls, displays, indicators, warnings, and telltales serve, particularly given that Ford's petition indicates its ADS vehicles will be equipped with these features and that they will be functional when the vehicles are operated in manual mode.

IV. Public Interest

The public interests at issue with respect to Ford's petition relate to road safety alone. Whether an ADS-only operated vehicle, be it a BEV or not, may result in an increase in other societal benefits (e.g., environmental, equity, mobility, etc.) versus a comparable human operated vehicle if deployed in commerce simply is not relevant to NHTSA's petition review. Simply put, any evaluation of such potential benefits is irrelevant to the Ford petition, which does not suggest how, if at all, ADS Escapes will directly displace human driven vehicles in ride-hail service, or otherwise. Consequently, NHTSA need not assess and evaluate the potential non-safety benefits (or concerns) associated with Ford's intended use of the ADS Escape. In short, the petition stands on its own and is limited to the time-period, number of ADS Escapes, and the specific FMVSS requirements at issue.¹²

As noted above, while the "public interest" involves the relative safety performance of exempt ADS Escapes, NHTSA should evaluate the relative risks posed to other road users in addition to those involving ADS Escape passengers. For example, a concern is whether Ford's petition adequately demonstrates that the ADS Escape will offer internal and external signaling and communication functionality sufficient to enable passengers, other road users, and emergency responders to understand the vehicle's operating characteristics and how to safely interact with it. For each FMVSS at issue, NHTSA should evaluate whether there are any benefits that extend beyond the human driver.¹³

V. Terms and Conditions

The operation of ADS Escapes in ride-hail fleets should result in the collection and analysis of data useful for making FMVSS revisions and for creating ADS performance standards. Thus, if

¹²NHTSA need not even compare the marginal safety benefits (if any) of exempt ADS-operated ADS Escapes versus comparable human-operated Escapes significantly equipped with Advanced Driver Assistance Systems (ADAS).

¹³For example, whether operational windshield wipers, mirrors, or sun visors provide any safety benefits to passengers or other road users?

NHTSA grants Ford's petition, it should include a condition requiring Ford to collect and share with NHTSA any such data for as long as each ADS Escape is kept in operation. This is particularly important given that Ford likely will be making changes to ADS-related software and hardware that could impact the ADS Escape's safety performance over time.

NHTSA also should condition any approval of the Ford petition on appropriate requirements governing cybersecurity and passenger privacy, to help ensure both appropriate vehicle safety performance the public acceptance of ADS-operated vehicles. With respect to privacy, any data gathered by Ford and shared with NHTSA should be scrubbed of personal information and compiled in aggregated data sets to help ensure passenger anonymity.

Conditions set out in any temporary exemption should, at the very least, clearly state operational design domain restrictions and well-defined minimal risk condition criteria. In addition, conditions should cover external vehicle identification, signaling, and warning, appropriate speed limiter and emergency braking capability, data and video recording, vehicle-to-passenger and vehicle-to-emergency responder communication

Conditions set out in any ADS Escape exemption should also clearly state operational design domain restrictions and well-defined minimal risk condition criteria. Conditions should specify the importance of recognizing and complying with all applicable (and permissible) state and local motor vehicle safety-related requirements, and those specifically applicable to the operation of commercial ride-hail vehicles. Conditions also should cover appropriate incident, law violation, and mechanical failure reporting, external vehicle identification, signaling, and warning, speed limiter and emergency braking functions, data collection and reporting, video recording, and vehicle- to-passenger and vehicle-to-emergency responder communication. Lastly, NHTSA should limit any grant of Ford's petition to a requirement that the Escapes in question be operated directly or indirectly under Ford's control.

As noted above, the petition indicates that, if granted, Ford will work with NHTSA and industry stakeholders on an FMVSS rulemaking to address modifications designed to accommodate and foster safe and reliable ADS operations. As an interested stakeholder, NADA looks forward to working with NHTSA as it moves forward with these important regulatory initiatives.

On behalf of NADA, I thank NHTSA for the opportunity to comment on this matter.

Respectfully submitted,



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