No. 20-994

In the Supreme Court of the United States

VOLKSWAGEN GROUP OF AMERICA, INC., ET AL.,
PETITIONERS,

v.

THE ENVIRONMENTAL PROTECTION COMMISSION OF HILLSBOROUGH COUNTY, FLORIDA, AND SALT LAKE COUNTY, UTAH

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF OF *AMICI CURIAE* ALLIANCE FOR AUTOMOTIVE INNOVATION AND NATIONAL AUTOMOBILE DEALERS ASSOCIATION

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STATEMENT OF INTEREST[1]

The Alliance for Automotive Innovation ("Auto Innovators") is a nonprofit trade association representing the manufacturers and suppliers that produce nearly 99 percent of all cars and light-duty trucks sold in the United States. Auto Innovators was formed by the combination of the nation's two largest automobile associations, the Association of Global Automakers and the Alliance of Automobile Manufacturers.[2] Its mission is to protect and promote the legal and policy interests of its members that design, manufacture, and sell motor vehicles throughout the United States. Auto Innovators' members rely on the regulatory certainty provided by the Clean Air Act to implement routine, model-wide updates to vehicles in production and in the field. The decision below permits every state and locality in the United States to regulate and penalize those changes, potentially in a way that conflicts with the judgment of the U.S. Environmental Protection Agency ("EPA") about whether a change is permissible or constitutes prohibited tampering with emission controls. Left intact, the decision will jeopardize auto manufacturers' ability to make these essential updates and upset the post-sale regulatory regime that has existed for decades.

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[1] Pursuant to Rule 37.6, *amici* affirm that no counsel for a party authored this brief in whole or in part and that no person other than *amici*, their members, or their counsel made a monetary contribution to its preparation or submission. Counsel of record for both parties received notice at least 10 days prior to the due date of the intention of *amici* to file this brief and consented to its filing.

[2] Auto Innovators' automaker members include BMW Group, Ferrari North America, Ford Motor Co., General Motors Co., American Honda Motor Co., Hyundai Motor America, Isuzu Motors America, Jaguar Land Rover, Karma Automotive, Kia Motors America, Maserati North America, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Nissan North America, Inc., Porsche Cars N.A., Stellantis, Subaru of America, Suzuki Motor of America, Toyota Motor North America, Volkswagen Group of America, and Volvo Car USA.

The National Automobile Dealers Association ("NADA") represents nearly 16,500 new-car and -truck dealers and a total of nearly 32,500 franchises. Founded in 1917, NADA focuses on two main goals: first, promoting and enhancing the franchise system and effectively communicating dealer views and concerns to all branches of the federal government, to manufacturers, and to the public; and second, strengthening the financial position of members as retailers. The Ninth Circuit's decision interferes with both of those core objectives by threatening to impose "staggering liability" on dealers for routine post-sale updates, Pet. App. 45a, and by potentially chilling dealers' ability to serve the needs of their customers. The Ninth Circuit's decision is particularly injurious to the majority of dealers who are small businesses, and who therefore lack the resources to navigate the patchwork of conflicting federal, state, and local regulation that the decision is poised to create.

INTRODUCTION AND SUMMARY OF ARGUMENT

The decision below threatens to transform a uniform regulatory regime governing post-sale updates to millions of vehicles every year into a confusing and chaotic free-for-all. Absent this Court's review, the decision will have dramatic and adverse implications for the automotive industry—and, in turn, the vehicle-buying public. The decision will make it difficult (and in some cases, impossible) for the industry to implement essential updates that improve the performance and emissions of in-use vehicles. This Court's intervention is critical.

Each year, dozens of manufacturers design and thousands of dealers implement millions of physical changes and software updates to vehicles in the field. As the district court correctly recognized, the Clean Air Act ("CAA") gives EPA exclusive authority to regulate these updates. The Act broadly preempts all state and local regulation "relating to the control of emissions from new motor vehicles," 42 U.S.C. §7543(a), and establishes a

comprehensive regulatory regime to govern model-wide changes to vehicles before and after they are sold.[3] On appeal, the Ninth Circuit correctly concluded that the Act preempts state and local tampering claims arising from pre-sale conduct. Pet. App. 2a. But it then held, contrary to the decisions of multiple state appellate courts, that the Act does not preempt similar efforts to regulate post-sale, model-wide changes. Pet. App. 2a-3a; *see* Pet. 14-16. It based that mistaken conclusion on the misconception that such changes are "rare"; that Congress did not anticipate the possibility of post-sale tampering; and that it is easy to determine which changes are tampering and which are not. Pet. App. 45a, *see* Pet. App. 37a n.22.

The Ninth Circuit's decision upends the orderly, congressionally mandated regime that has governed manufacturers' and dealers' post-sale conduct for decades. By permitting *every* state and local government to apply its own prohibition on tampering to manufacturers' post-sale changes, the decision portends regulatory chaos. Manufacturers routinely update the software design and calibration of their engines and emission control technology, pursuant to a longstanding and well-understood process with EPA. These post-sale changes affect millions of cars each year, and provide important benefits for consumers and for the environment. The changes often resolve problems identified in the field and improve vehicles' overall performance, reliability, driveability, safety, and emission control.

Significantly, post-sale changes often involve complex technical justifications and tradeoffs—for example, reducing some types of emissions while increasing others, or accepting emissions increases under certain defined operating conditions to redress the potential for engine or

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[3] The CAA also permits California to promulgate its own emission standards with EPA approval. Other states may adopt standards identical to California's. 42 U.S.C. §§ 7507, 7543(b).

vehicle damage. Contrary to the Ninth Circuit's apparent assumption, it is often complicated to determine whether a given post-sale design change or update amounts to "tampering." Although one regulator might consider a post-sale change to an emission control or system to be an improvement, or to be justified to protect against damage or accident, another regulator might disagree and conclude that it constitutes prohibited emissions "tampering."

Subjecting automobile manufacturers and dealers to thousands of different regulators is untenable. If manufacturers and dealers can no longer rely on EPA's determination when making post-sale, model-wide changes that impact emission controls or systems, they will risk massive liability for every update. The effect would be to discourage *all* post-sale changes, including those that benefit consumers and the environment. This will significantly hamper EPA's congressionally mandated role of supervising post-sale emissions changes.

To be clear, *amici* do not suggest that manufacturers or dealers should be able to evade responsibility for unlawful emissions tampering. Instead, *amici* write to underscore that Congress has *already* legislated a comprehensive and orderly process for federal regulatory review and approval of design changes introduced in the field, and for enforcing prohibitions on tampering. That sensible and orderly nationwide framework would be disrupted if states and localities could penalize (and, by extension, regulate on a day-to-day basis) model-wide changes to post-sale vehicles. By holding otherwise, the Ninth Circuit's decision will inevitably produce "an anarchic patchwork of federal and state regulatory programs, … creat[ing] nightmares" for everyone. *Engine Mfrs. Ass'n v. EPA*, 88 F.3d 1075, 1079 (D.C. Cir. 1996) (internal quotation marks and citation omitted). The decision thus not only puts at risk the quality of the air and the health and welfare of the public; it also

threatens to harm the health of the auto industry, which is responsible for nearly ten million jobs in the United States and is critical to the nation's economy.

This case accordingly warrants this Court's immediate review, not only to clarify an important question of federal law that has divided courts across the country, but also to avoid the adverse consequences that will likely flow from the Ninth Circuit's erroneous decision.

ARGUMENT

I. Manufacturers and Dealers Apply Model-Wide Updates to Millions of Vehicles Every Year, Subject to Comprehensive and Effective Federal Regulation

Automobile manufacturers and dealers implement model-wide updates that potentially impact emissions from millions of vehicles every year, and these updates are often essential to vehicle performance and to protecting the environment. Numerous provisions in the CAA express Congress's clear intent to give EPA exclusive authority to regulate these changes to post-sale vehicles over the course of each vehicle's "useful life." To obtain approval for these changes and to ensure that they do not constitute prohibited emissions tampering, manufacturers work closely with EPA, which carefully weighs complex trade-offs between emissions of different pollutants, as well as the resulting performance and safety impacts. And, for decades, manufacturers and dealers have relied on EPA's exclusive regulatory authority to ensure that they can make updates without fear of being subject to limitless liability from thousands of independent regulators with competing priorities. That is what Congress intended. The Ninth Circuit reached a contrary conclusion based on multiple misunderstandings concerning how model-wide updates operate in practice and their prevalence, and based on a mistaken assumption that state and local regulators will not reach conflicting

determinations about what constitutes unlawful tampering.

A. Model-Wide Changes to In-Use Vehicles Are Necessary and Common

1. Manufacturers and dealers routinely need to modify the emission controls or systems of vehicles, including software controls, on a model-wide basis in order to address performance- or emission-related problems identified through customer experience once vehicles are operating in the field. Typically, a manufacturer first implements the model-wide change at the production stage—*i.e.*, to the vehicles that have not yet been produced and sold. *See* EPA, *Technical Report: History and Description of the EPA Motor Vehicle Fuel Economy Program* (EPA-AA-CPSB-82-02), at 11 (Sept. 1982) (recognizing that "[m]ost manufacturers make changes to their product lines during the model year," which may include "design or specification changes to existing models"). These changes are commonly referred to as "running changes" and must be submitted to EPA for approval.

Manufacturers, usually working through dealers, then typically seek to make a corresponding change to vehicles of the same model type that were already produced—*i.e.*, post-sale vehicles. These changes are commonly referred to as "field fixes." By making such changes, manufacturers preserve consistency across a vehicle model population and ensure that all vehicles of the same model type receive the benefits of the design change regardless of when they were produced. Indeed, manufacturers typically maintain a single "latest and greatest" software package for a vehicle model, so that when a vehicle in the field comes in to a dealer, the vehicle is updated to the latest software version. Similarly, manufacturers may seek to implement the design change on vehicles from *prior* model years that use the same or similar technologies. Such changes also qualify as "field fixes."

2. Significantly, over time it has become increasingly more common for manufacturers and dealers to implement model-wide changes, and those changes have become more critical. That is so for two principal reasons.

First, as emission standards have become more stringent, emission controls, systems, and software have become more complex. Most engines today use a combination of various emission control systems, which are controlled by software that is calibrated precisely for that vehicle's attributes to respond to different operating conditions (such as engine speed and load, altitude, and temperature).

For example, most modern diesel engines control emissions through some combination of (a) electronic management of fuel injection into the combustion chamber; (b) exhaust gas recirculation ("EGR"), which recirculates a portion of the engine's exhaust back into the intake air and combustion chamber to reduce emissions of nitrogen oxides ("NOx") from the engine; (c) a diesel particulate filter that is electronically managed through periodic "regeneration cycles"; (d) an oxidation catalyst exhaust aftertreatment system to reduce carbon monoxide and hydrocarbon emissions; and (e) an electronically-managed selective catalytic reduction ("SCR") exhaust aftertreatment system, which injects a urea solution onto a catalyst bed to convert NOx into inert nitrogen, water vapor, and small amounts of carbon dioxide ("CO_2").

Each of these systems has grown in complexity to match increasingly stringent emission standards. For instance, EGR emissions control systems were first introduced on diesel passenger cars in the 1990s; by the early 2000s, they were replaced by electronically-controlled "cooled" EGR systems as new emission

standards created higher demands on EGR usage.[4] Likewise, SCR systems were introduced on diesel passenger cars in the late 2000s and early 2010s to facilitate compliance with increasingly stringent emission standards for NOx.[5]

Further, each of these controls or systems has limitations; not all of them are effective in all modes of vehicle operation. As a result, they must be carefully managed in conjunction with each other to maintain compliance with emissions standards. EGR technology, for example, reduces NOx emissions but increases particulates (soot), fuel consumption (and thus CO_2 emissions), and engine wear. Similarly, SCR technology is less effective until the catalyst temperature reaches an optimum target zone, and it depends on injecting a precise amount of urea onto the catalyst at precise times in response to different operating conditions. SCR systems also are prone to damage under certain operating conditions and must be managed accordingly.

Manufacturers carefully calibrate the software controls for these devices and may adjust the calibrations throughout the model year to optimize often competing variables. Unsurprisingly, the increased computerization of emission controls has only added to the need for software updates to optimize emission control calibration and design.

Second, EPA has adopted monitoring and emissions testing compliance requirements for in-use vehicles that make it easier to detect—and for manufacturers to correct—issues in the field. For example, starting in the 1990s, EPA required onboard diagnostic software

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[4] *See, e.g.*, Hannu Jääskeläinen & Magdi K. Khair, *Exhaust Gas Recirculation*, https://www.dieselnet.com/tech/engine_egr.php (last visited Feb. 16, 2021).

[5] *See, e.g.*, W. Addy Majewski, *Diesel Catalysts*, https://www.dieselnet.com/tech/cat_diesel.php (last visited Feb. 16, 2021).

systems to monitor and generate feedback on the in-use performance of emission control components. *See* 40 C.F.R. §86.1806-17. By providing this feedback, onboard diagnostic systems help identify issues involving actual operating conditions that customers may not detect, yet would be addressed by design improvements. Some of these issues can arise years after the vehicle has been sold, meaning that some improvements will be implemented model-wide *only* on in-use vehicles.

EPA has also established "[m]anufacturer in-use verification testing requirements," which require manufacturers to evaluate whether in-use vehicles are complying with emission standards. 40 C.F.R. §86.1845-04. Like onboard diagnostic systems, these in-use emissions testing requirements can help manufacturers detect issues involving actual operating conditions that may require model-wide improvements.

As a result of these developments, model-wide changes to post-sale vehicles are more common today than ever, and that trend will likely only continue. On average, for example, over six million vehicles receive post-sale updates every year through EPA's recall program alone.[6] And the recall program accounts for only a fraction of EPA-vetted post-sale updates. One member of amicus Auto Innovators estimates that new or refreshed models require ten to twenty updates per model annually. Even older models require about five updates per year. Another member estimates that models average approximately one emissions-related update per year for the first seven years of a vehicle's life, with most changes occurring in the first three years.

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[6] EPA, *2014–2017 Progress Report: Vehicle & Engine Compliance Activities* 7 (Apr. 2019), https://tinyurl.com/EPARecallReport (2014–2017 period).

B. For Decades, EPA Has Comprehensively Regulated Model-Wide Changes to Ensure Emissions Compliance

Congress directed EPA in the CAA to prescribe the emission standards that manufacturers must design motor vehicles to meet not only at the point of initial sale, but also for their entire "useful life." 42 U.S.C. §7521(a)(1). The resulting regulatory scheme operates both pre- and post-sale.

1. First, before launch, EPA requires testing of "any new motor vehicle or new motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with [emissions] regulations." *Id.* §7525(a)(1). This includes "durability" testing that requires manufacturers to "age" pre-launch development vehicles under specified mileage accumulation protocols and then test the vehicles to demonstrate that they will comply throughout their regulatory useful lives, generally ten years or 120,000 miles (for light-duty vehicles).[7] Manufacturers interact extensively with EPA technical staff throughout this testing process to provide information and address concerns. Once all goes well, a manufacturer then applies for and obtains a "certificate of conformity" that certifies that a particular vehicle configuration will comply with applicable emissions standards for its useful life. *Id.* §§7522(a)(1), 7525(a), 7541(a)(1) & (b)(2). Only after EPA issues that certificate of conformity can manufacturers introduce a new vehicle into commerce.

Further, if a manufacturer seeks to make a running change to a certified configuration of a new model-year vehicle, it must notify EPA. Specifically, the

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[7] *See* 40 C.F.R. §§86.1823-08 (durability for exhaust emissions), 86.1824-08 (durability for evaporative emissions), 86.1825-08 (durability for refueling emissions), 86.1805-17 (regulatory useful life).

manufacturer must notify EPA of "any change or addition in production vehicles which creates a new vehicle configuration within the car lines covered in a certified test group, giving a full description of the change." 40 C.F.R. §86.1842-01(b)(1). EPA can then require additional testing to ensure that the updated vehicles will continue to meet applicable emission standards throughout their useful life. *Id.* §86.1842-01(b)(2). In addition, the manufacturer must submit updates to its applications for certificates of conformity to reflect any running changes. *Id.* §86.1842-01(b)(1).

2. But EPA's statutory duty to regulate motor vehicle emissions does not stop after new vehicles are sold; rather, it extends to regulation of a vehicle for its "useful life." As rigorous as pre-production emissions and durability testing is, manufacturers cannot account for every possible driving condition that a vehicle will face in the real world; as discussed above, updates are often necessary. Thus, EPA continues to ensure that vehicles remain in compliance with the emission standards for their full regulatory useful lives, and the agency works closely with manufacturers to achieve that goal.

EPA relies on several authorities to regulate the emissions of in-use vehicles. Its hallmark authority is to investigate and order a recall whenever "a substantial number" of a class or category of vehicles do not conform to applicable CAA requirements. *Id.* §85.1802(a). One of those requirements is that in-use vehicles conform to the emissions-related declarations that are submitted as part of an application for a certificate of conformity, including those pertaining to both software and hardware.

The CAA also requires EPA to "establish … methods and procedures" to test "whether, when in actual use," vehicles "compl[y] with … emission standards." 42 U.S.C. §7541(b). Like EPA's pre-sale testing requirements designed to ensure that vehicles are compliant when sold, these post-sale testing requirements help ensure that vehicle emissions are compliant throughout their full

useful life. *See* 40 C.F.R. §§86.1845-04 (EPA's In-Use Verification Program); 86.1846-01 (In-Use Confirmatory Program). In addition, EPA's onboard diagnostic requirements help alert unknowing drivers to malfunctioning emission-related components, leading them to seek a fix long before formal EPA testing would reveal post-sale problems. *Id.* §86.1806-17; *see* Part I.A, *supra*.

EPA also requires manufacturers to monitor, investigate, and report "[e]mission-related defect[s]" in post-sale vehicles, including in defective components and software. 40 C.F.R. §§85.1902(b)(2), 85.1903, 1068.501. EPA may decide to recall these vehicles to remedy the defect. *See id.* §1068.501.

Even though EPA has the authority to order a mandatory recall, manufacturers undertake the vast majority of recalls on a voluntary basis. EPA will strictly supervise even these voluntary recalls, however; for example, a manufacturer must submit a plan for any voluntary recall, including any modifications to be made to the vehicles at issue. *See id.* §85.1904(a). The manufacturer will also submit quarterly progress reports as the recall progresses, so that EPA may monitor the process and order additional corrective action as necessary. *Id.* §85.1904(a)-(b).

Finally, and especially relevant here, all of these authorities and tools enable EPA to enforce the CAA's tampering prohibition. The Ninth Circuit assumed that Congress "could not have … anticipated" manufacturers' "intentional tampering with post-sale vehicles." Pet. App. 45a. But that is incorrect. As enacted in 1970, the CAA's tampering prohibition was targeted *specifically* at manufacturers' (and dealers') post-sale conduct; it made it unlawful "for any manufacturer or dealer knowingly to remove or render inoperative" any emission control device or design "after such sale or delivery to the ultimate purchaser." Pub. L. No. 91-604, §7(a)(3), 84 Stat. 1676, 1693 (1970). Congress was thus not only well aware

that manufacturers (and dealers) would make post-sale changes, but it also limited such changes to prohibit unlawful tampering. Then, as today, Congress gave EPA the exclusive responsibility to enforce that prohibition.[8]

EPA also recognized, however, that as described above, the line between legitimate updates to a vehicle and those that constitute "tampering" might not always be clear. *See* Part I.C, *infra*. Indeed, some of these updates are *required* by EPA. The line is especially blurry for field fixes, which EPA defines as "[a] modification, removal or replacement of an emission-control related component by a manufacturer or dealer, or revision by a manufacturer for implementation by dealers to specifications or maintenance practices for emission-control related components on vehicles that have left the assembly line." EPA, Advisory Circular No. 2B, *Field Fixes Related to Emission Control-Related Components*, at 1 (Mar. 17, 1975) ("Field Fix Guidance") .

In 1975, in response to concerns that legitimate post-sale updates could improperly fall afoul of the tampering prohibition, EPA issued the Field Fix Guidance. The Guidance sets forth a procedure "by which manufacturers can assure themselves that EPA will not consider a field fix to be a violation of Section 203(a)(3) of the Act." Field Fix Guidance at 1. In the Guidance, EPA established that "a change to a certified vehicle … that is identical in all respects to a running change that is approved for incorporation in new vehicles by the manufacturer" does not constitute prohibited tampering. *Id.* at 2-3. In other words, it is *per se* lawful for a manufacturer to update in-use vehicles to conform to the latest design of vehicles

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[8] Today, the provision applies more broadly to "any person" who knowingly "remove[s] or render[s] inoperative" any emission control device or design "after [its] sale and delivery to the ultimate purchaser." 42 U.S.C. §7522(a)(3)(A); *id.* §7522(a)(3)(B) (making it unlawful for any person to manufacture, sell, or install a defeat device).

from the *same* model year that are still on the production line. Since all changes to vehicles on the production line must be submitted to EPA, that necessarily means that all field fixes to same-model-year vehicles are overseen by EPA.

EPA also addressed field fixes to *prior*-model-year vehicles that are no longer in production. Under the CAA, manufacturers receive a certificate of conformity only for a single model year of a vehicle, and they must obtain a new certificate of conformity for each succeeding model year even if the vehicle configuration has not changed. 42 U.S.C. §7525(a)(1). Even where changes are made to a vehicle configuration from one model year to the next, emission-control technologies most often carry over across multiple model years. The upshot is that the emission control technologies used by vehicles in production are often very similar (if not identical) to the technologies used by prior-model-year vehicles that are no longer in production. In such cases, it is common industry practice for a manufacturer to take any improvements in the emissions controls, systems, or software on its vehicles in current production and to implement those changes to prior-model-year, in-use vehicles through field fixes. Indeed, it is not uncommon for a manufacturer to engineer improvements over a period of time, such that vehicles that have already left the production line in the prior model year also need to be modified. *See* Field Fix Guidance at 2-3 (contemplating a field fix that implements "a change to a certified vehicle that is not identical in all respects to, but provides for essentially the same purpose as, a running change … that would have been incorporated if the vehicle were still in production").

EPA established in the Field Fix Guidance that a manufacturer does not violate the tampering prohibition if it implements this type of prior-model-year field fix after receiving EPA pre-approval. *See id.* Specifically, the manufacturer must present EPA with an explanation

and data demonstrating that the vehicle in its changed configuration will continue to comply with EPA's emissions regulations. This mirrors the requirements that apply to a "running change" for new vehicles, but it simply relates only to vehicles already in the field. *See* 40 C.F.R. §86.1844-01(f) (requiring that running change submissions include "[t]he effect the change will have on emissions" and "[a]ny test data that is determined to be necessary to demonstrate compliance with applicable emission standards"). If a manufacturer chooses not to seek EPA pre-approval for a prior-model-year field fix, then EPA reserves the right to "investigate" the matter further as warranted. Field Fix Guidance at 3. EPA may pursue enforcement if it concludes that the manufacturer engaged in tampering. In practice, manufacturers usually submit these types of field fixes for pre-approval in order to avoid the regulatory risk.

In short, EPA is extensively involved in the approval and regulation of not only pre-sale, but also post-sale updates to emissions control technology. If a manufacturer undertakes a recall, that process either will be instigated by EPA itself or will require the manufacturer to update EPA through a series of reports. If a manufacturer seeks to incorporate a change into *same*-model-year vehicles that are still in production, that running change will be submitted to EPA and incorporated into the applications for certificates of conformity. If a manufacturer seeks to incorporate a change to *prior*-model-year vehicles, EPA provides a path for pre-approval that, in practice, most manufacturers will take. One way or another, then, EPA oversees the implementation of post-sale updates, with processes available to manufacturers to minimize the risk of inadvertently violating the CAA's tampering prohibition. And if approval is not sought and obtained, EPA retains authority to investigate, order an appropriate fix, and penalize conduct it determines constitutes tampering.

C. Evaluating Whether Model-Wide Changes Are Unlawful Tampering Requires Judgment and Significant Expertise

Even where it is not required, manufacturers regularly wait for EPA's approval for post-sale updates because it is not always clear where the line between a lawful update and unlawful tampering lies. Contrary to the Ninth Circuit's suggestion (Pet. App. 37a n.22), evaluating whether a particular post-sale change constitutes "tampering" requires judgment and significant expertise, and different regulators could reach different conclusions.

For example, EPA regulations allow designs that reduce the effectiveness of a vehicle's emission controls where necessary to protect the vehicle against damage or accident in particular field conditions, such as high altitude, hot or cold conditions, or a sudden increase in engine load. *See, e.g.*, 40 C.F.R. §§86.1804-01, 86.1809-12. Evaluating such justifications is often technically complex, requiring balancing of competing physics-based and engineering considerations. Manufacturers work closely with EPA to balance those considerations and ensure that the regulations are applied consistently and that updates comply with the regulations.

Further, many in-use changes to emission control software may increase emissions of one pollutant while decreasing emissions of others. As just one example, measures to *reduce* a diesel vehicle's emissions of NOx—which is formed from high-temperature combustion—result in less-efficient combustion and increased fuel consumption and thus tend to *increase* emissions of CO_2 and particulates.[9]

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[9] *See, e.g.*, Hannu Jääskeläinen & Magdi K. Khair, *Exhaust Gas Recirculation*, https://www.dieselnet.com/tech/engine_egr.php (last visited Feb. 16, 2021).

Other changes may affect vehicle emissions in a way that would nevertheless normally be approved by EPA. For example, a manufacturer may determine that a calibration change is needed to respond to a complaint about a vehicle's driveability. Ordinarily, EPA would approve such a change so long as any resulting increase in emissions fell within the emission standard to which the vehicle was certified. EPA would also routinely approve the change if it realized that any apparent increase in criteria emissions was the result of normal test-to-test variation (for example, due to a different test lab or different driver conducting the test). Other regulators, however, may not have the experience to properly interpret the results of these new tests.

Similarly, EPA routinely approves changes that may slightly decrease fuel economy in a way that increases greenhouse gases. One example might be a change to a vehicle's transmissions shift schedule to improve driveability. But other, less experienced regulators may consider *any* increase in greenhouse gas emissions, no matter how small, as tampering.

EPA thus plays a critical role in collaborating with manufacturers to differentiate justified design changes that comply with emission regulations from those that risk being labeled unlawful "tampering." EPA issued the Field Fix Guidance precisely in order to "advise manufacturers on the issue of how [the tampering prohibition] potentially affects field fixes, and to set forth a procedure by which manufacturers can assure themselves that EPA will not consider a field fix to be a violation" of that provision. Field Fix Guidance at 1. This oversight process provides needed certainty and uniformity for manufacturers making updates to vehicles before and after they are sold to ultimate purchasers.

II. The Ninth Circuit's Decision Destabilizes the Congressionally Created Federal Regulatory Regime, Threatens Chaos for Manufacturers and Dealers, and Risks Depriving Consumers of Essential Updates

As Congress intended in the CAA, EPA's exclusive, nationwide jurisdiction over manufacturers' and dealers' post-sale changes is critical to assuring a uniform, functioning regulatory system that enables manufacturers and dealers to make essential improvements to their vehicles. EPA has substantial information about vehicle emissions and the nuances of vehicle powertrains and emission control technology, stemming from its deep involvement in the testing, monitoring, and certification processes across the industry for the past fifty years. And EPA has the technical expertise necessary to evaluate post-sale, model-wide changes in a manner that balances performance, emissions, and other considerations. Allowing thousands of state, county, and local regulators—who lack such expertise—to insert themselves into this process would thwart the congressionally created federal regulatory process; expose manufacturers and dealers to enormous uncertainty, potentially significant regulatory liability, and unfounded consumer litigation; and delay or prevent essential updates from reaching consumers.

The Ninth Circuit's decision forces manufacturers and dealers either to take a significant risk every time they make a change to a vehicle model that is already in the marketplace, or not to provide the essential update. Even where such a change has EPA approval, it could draw scrutiny, second-guessing, inconsistent oversight, and potential liability from any one of thousands of state and local regulators. It is simply not possible to seek approval from every potential regulator in the United States for each of the numerous post-sale updates each manufacturer makes every year. And even if seeking

such approvals were possible, if even one regulator considered an in-use change to be unlawful tampering, the manufacturer would have to redesign the change to address that regulator's concerns for that discrete jurisdiction and then restart the process of obtaining approval from EPA and other jurisdictions. If two local or state regulators had differing views about an update, manufacturers and dealers might then have to treat vehicles of the same model year differently in different jurisdictions, depending on whether the jurisdiction has approved or disapproved the proposed in-use change. That is both impractical and contrary to Congress's intent to avoid subjecting manufacturers and dealers to requirements that vary across States. And if (as is likely) manufacturers will be unable to obtain pre-change responses from every one of the thousands of county and local regulators, they will need to balance the benefits of an EPA-approved update against the risk of tampering lawsuits from a state or local regulator and from consumers taking advantage of the multitude of different regulations or regulatory interpretations.

The Ninth Circuit's decision also places dealers—the entities on the front lines of actually making the changes to vehicles in the field—in an especially difficult bind. The franchise agreements between dealers and their manufacturers specifically require that dealers conduct necessary field changes and updates, along with emissions warranty and recall work. Dealers are also regulated by EPA, are subject to the CAA's anti-tampering provisions, and take those responsibilities seriously. But the majority of franchised automobile dealers in the United State are small businesses. The typical member of amicus NADA has around 60 employees, and 35% sell fewer than 300 new cars a year. Requiring franchised dealers to second-guess the field fix instructions of their manufacturers would impose an untenable burden—they simply lack the technical and legal expertise to determine whether an update complies with multiple overlapping and potentially conflicting sets of regulations. Instead,

dealers have always and must continue to rely as a matter of contract and expertise on the directions provided by manufacturers. For example, a dealer has no ability to second-guess whether a software update provided by a manufacturer—typically contained in proprietary code—qualifies as "tampering" or not. Prior to the Ninth Circuit's decision, if a manufacturer advised a dealer that the update was approved by the EPA, the dealer could confidently implement that update. But the decision below means no dealer can ever implement an update without risking "staggering" liability from local regulators. Pet. App. 45a.

Customers could also suffer. Dealers, understandably concerned about the risks involved in implementing a post-sale update, conceivably might choose not to implement the update, thereby depriving the customer of its benefits. Some of those benefits can be important, especially when they relate to vehicle performance. A customer seeking those benefits may turn to an independent entity, who might not realize that there is a software fix to address the problem and might make unsanctioned and damaging changes to the vehicle.

The automobile industry's grave concern about the risks and burdens of multiple, potentially conflicting regulatory schemes is not theoretical. As the petition notes, the evidence indicates that local and state authorities are already moving to regulate post-sale, model-wide updates. *See* Pet. 20-22. Yet the Ninth Circuit dismissed these concerns as "inapplicable" because local anti-tampering rules are purportedly "identical" to the federal tampering prohibition. Pet. App. 37a n.22.

That reasoning is flawed. For one thing, Section 209(a) prohibits state and local governments from enforcing "*any* standard relating to the control of emissions from new motor vehicles," 42 U.S.C. §7543(a) (emphasis added), even "identical" standards. *See Sims v. Fla. Dep't of Highway Safety and Motor Vehicles*, 862

F.2d 1449, 1455 (11th Cir. 1989) (CAA preempts state regulation even if it "does not establish new or conflicting emission standards"). For another, the problem is that the word "tampering" does not define itself. The Ninth Circuit's reasoning erroneously assumes that there will be an easily achieved consensus among regulators about whether a particular change constitutes tampering. As explained, that is simply not true, including for all the reasons set forth in Part I.C. If every state and local regulator were free to evaluate in-use changes under their own criteria, it is a foregone conclusion that some would reach different conclusions from EPA. That is especially so given the immense, per-vehicle, per-day penalties at stake, which could give local regulators significant incentives to recast an update as a tampering violation.

In short, allowing state and local governments to regulate model-wide changes to in-use vehicles would create a hopelessly unmanageable patchwork of regulation. The automobile manufacturing industry raised a similar concern in its comments on the 1970 CAA amendments. There, the Automobile Manufacturers Association explained that "[t]he possibility of hundreds of different [emission] standards" was "wholly unrealistic from an economic standpoint" and would give rise to "a myriad of problems." Letter, Automobile Mfrs. Ass'n to Elliot L. Richardson, Aug. 27, 1970, *reprinted in* 1 CAA Legislative History at 724-25. The CAA addresses this concern by granting EPA exclusive authority to regulate manufacturers and dealers' model-wide emission conduct and by broadly preempting state and local attempts to regulate in this sphere. Fifty years later, as the complexity of emission regulations and emission control technology has increased significantly, the concern carries even greater weight. Allowing state and local regulators to weigh in on which design changes and software updates to in-use vehicles constitute tampering would destabilize EPA's regulatory scheme and inject unwarranted and entirely unnecessary confusion into the orderly process that Congress intended.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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