



February 11, 2025

Dear Chairman Solomon and other Honorable Members of the Rhode Island House Corporations Committee,

The Engine Technology Forum, is a not-for profit educational organization headquartered for over 20 years in Frederick MD. We represent manufacturers of advanced engines, components, vehicles and equipment, petroleum, and renewable biofuel producers. A list of our members follows

The Engine Technology Forum is **opposed** to **House Bill 5159**. This legislation is not needed and if enacted, we are concerned it will facilitate the tampering of emissions control systems on engines and equipment used in farming applications farm equipment, a practice likely in violation of the federal Clean Air Act, and one that will surely make Rhode Island's air dirtier and ports and watersheds less healthy.

As a matter of background, ETF is a national, not-for profit educational organization based in the Maryland suburbs of Washington, DC. We represent manufacturers of internal combustion engines such as gasoline and diesel engines and equipment, components, petroleum, and renewable biofuel producers.

Through original research, education, and fact-based outreach, we seek to expand the broader understanding about the benefits and advancements in diesel engines, technologies, and fuels as well as their significance to our economy and how they help achieve clean air and climate goals. You can learn more about us on our website enginetechnologyforum.org.

I. Introduction

Diesel engines power nearly all farm tractors and machines thanks to their unique combination of efficiency, power, durability, and reliability. Over the last two decades, manufacturers of diesel engines and equipment have invested billions of dollars to reduce emissions to near zero levels and meet federal clean air requirements, as you can see in the attached chart. Across the country, all of us – including Rhode Islanders – benefit from these advanced technological innovations in the form of cleaner air.

Why would someone knowingly modify or tamper with emissions controls? The act of tampering is linked most often to the desire to save time, money or improve performance.

- Improving performance might mean accessing the engine computer to adjust or disable engine speed limiters to enable tractors to travel at faster ground speeds, perhaps beyond the safe design of steering and braking systems.
- Getting more power through tweaking the system to get higher fuel injection rates or pressures or adjustments in engine timing.
- The motivation to save money can result in anything from the physical removal of particulate filters or catalysts to overtly overriding emissions computer control systems, thereby avoiding

the need to fill up with diesel exhaust fluid – a critical component for assuring emissions compliance.

Even those seeking to legitimately repair a machine or equipment could inadvertently alter engine and emissions control systems. The results are all the same - emissions control systems that ensure clean air compliance are violated and emissions increase, and there are likely safety concerns as well.

Right to Repair legislation if enacted would likely contribute to the degradation of air quality in Missouri through higher emissions of particulate matter and nitrogen oxide emissions, a precursor to ozone formation. There is no simpler way to state this fact: ***Tampering with emissions controls is directly linked to higher emissions.*** Engine computers control, measure and monitor on a real time basis tractor and machine fueling rates, air flows, exhaust pressures and temperatures, diesel exhaust fluid levels and many other parameters that affect emissions and overall machine performance. As evidenced in a recent publication of data in *Farm Equipment Dealer: Business and Trends* report (referenced below), the problem is **not** uncommon.

II. Diesel Powered Farm Equipment Achieves Near-zero emissions thanks to Advanced Emissions Control Systems

Since 2014, manufacturers have met US EPA’s stringent emissions requirements that have resulted in achieving near zero emissions from diesel engines in farm tractors and machines. (see chart at end).

This is accomplished by a highly integrated system of computers and controllers that control the combustion process and treat the exhaust emissions on a real-time basis through sophisticated systems like selective catalytic reduction (SCR) and diesel particulate filters.

Since 2014, most farm tractors and machines utilize advanced SCR systems. These are active emissions scrubbers on the machine – one where in a specialized catalyst, exhaust gases are treated by carefully calibrated sprays of Diesel Exhaust Fluid (“DEF;” aqueous urea) resulting in a chemical reaction that virtually eliminates nitrogen oxide emissions. Because it is an active system, DEF fluid must be refilled periodically based on fuel consumption, and that costs money. On average, nationwide today’s DEF costs about \$25 dollars for a 2.5-gallon jug. Row crop tractors can typically hold 4-6 gallons.

Unfortunately, some creative individuals and repair shops have illegally accessed the engine computer and software and reprogramming to “trick” the engine into thinking that the SCR systems are dosing and operating properly, and diesel exhaust fluid levels are full, when in fact they are not operating at all or at very diminished levels. This is perceived as saving the operator the cost of refilling DEF fluid and avoiding expensive maintenance on particulate filters. SCR-equipped engines rely on routine end-user action (e.g., filling the DEF tank) to ensure proper operation of the SCR system. If the end-user doesn’t take that action, the regulations require engine manufacturers to inhibit operation of the engine, going into a limp mode and then shutting it down until repaired.

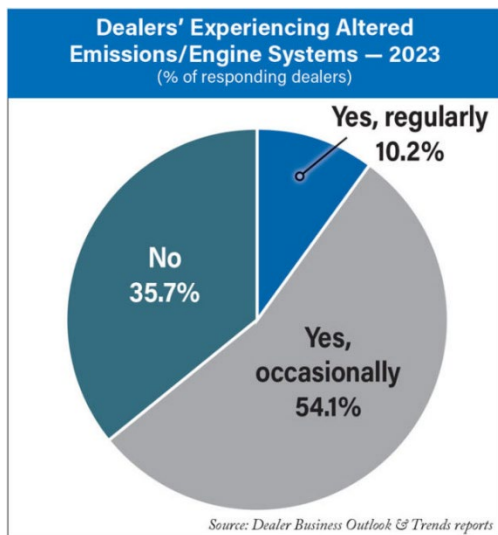
Sometimes called chipping, tuning, or ECU remapping, this service is offered to farmers by a variety of individuals and companies. Right to Repair legislation will further facilitate this practice by providing unrestricted access to engine emissions control software, which is why we are opposed. Making changes to engine control units (ECU’s) – computers and their controllers– to enhance the performance or evade emission controls has become a significant issue across North America. Being sold as “boosting performance” for pennies on the dollar compared to the cost of buying higher-capacity equipment and

saving money through bypassing maintenance on emissions control systems; this practice must look like an attractive proposition, but it's not. It may void the equipment's warranty insurance agreements and is illegal in the U.S.

What H.5159 would do, if enacted, would be to enable the defeat of these systems, denigrate emissions performance and make agricultural, forestry and other equipment dirtier not cleaner, and increase emissions, not reduce them. Ultimately, a yes vote on H.5159 is a vote **against** the health and safety of your constituents and the environment itself.

II. The Incidence of Tampering with Emissions Controls in Off-Road Equipment is Well-Documented

A recent survey of farm equipment dealers confirmed that the practice of emissions tampering is prevalent with farm equipment. Specifically, dealers were asked about their experience with seeing equipment in service or sale that exhibited signs of tampering. Nearly 100 dealerships responded to inquiries on the topic and results were published in the March 2024 *Farm Equipment Dealer Business Outlook & Trends* report.



Almost two-thirds of dealers report altered emission systems come through their shops at least occasionally, according to the 2024 *Farm Equipment Dealer Business Outlook & Trends* report.

Just over 10% of dealers say they're seeing these "chipped" machines regularly. While 54% say they're seeing them occasionally. Just over one-third of dealers said they do not receive machines with altered emissions systems in their shops.

Credit: ([Ben Thorpe](#) posted on March 1, 2024 | Posted in [Best Practices, Manufacturer & Dealer Issues](#))

III. Original Equipment Manufacturers ("OEMs") Are Subject to A Wide Range of Federal Requirements in The Clean Air Act (CAA) That Govern the Building and Warranting Their Products For Emissions Performance

Manufacturers have specific and numerous CAA obligations to help ensure the integrity of Tier 4 emissions systems. Moreover, the CAA and regulations promulgated thereunder require equipment manufacturers to build-in base level tampering safeguards. Restricting access to the software that defines a machine's emissions performance is part of these base-level tampering safeguards.

The unrestricted access and the information that H.5159 would require may conflict with federal manufacturer obligations to help ensure that equipment and engine emissions systems remain

compliant to Tier 4 standards during their entire useful life. (See 40 CFR 1039.240, 1039.245; see also 1039.101(g) (useful life requirements); 42 USC § 7525(a)(1) reference to testing to determine conformance to regulations prescribed under § 7521; § 7521(a)(1) requires regulations to prescribe a “useful life” over which vehicles/engines shall comply with emission standards). If H.5159 was adopted by state, manufacturers could be held liable for providing a “defeat device” to the market in the form of a service tool that allows end-users to circumvent certain engine/machine performance inhibitors related to emission controls. This is especially true for selective catalytic reduction (“SCR”) -equipped engines that rely on routine end-user action (e.g., filling the diesel exhaust fluid (“DEF”) tank) to ensure proper operation of the SCR system. If the end-user doesn’t take that action, the regulations require engine manufacturers to inhibit operation of the engine. The bottom line is that if manufacturers provide customers the tool for overriding those inhibitors in the way that H.5159 would require, that could be viewed by the U.S. EPA as circumventing the regulatory requirements.

IV. Summary

Modern diesel engines in farm and agricultural equipment are more efficient, powerful, and productive than ever before, while also meeting the most stringent clean air emissions requirements that virtually eliminate emissions of nitrogen oxides and particulate matter thanks to the use of advanced engine and emissions control systems.

Unfortunately, there is credible documentation by dealers indicating the incidence of tampering with these emissions controls is significant. The consequences for Missouri’s air quality are concerning. As a result of the use of tampered equipment, emissions from the agriculture and off-road sector could be higher and worsen Rhode Island’s ozone and particulate matter clean air compliance.

At the Engine Technology Forum, we are working to do our part to encourage better stewardship of diesel technology by users, such as through the support of state legislation to tighten fines and penalties against the practice of “rolling coal” by pickup trucks. I have attached a flyer to this testimony that is part of our national campaign to discourage tampering and promote clean operation of diesel engines and equipment of all kinds.

Right to Repair legislation that hands over the keys to access sophisticated emissions control systems and software, takes us the wrong way on environmental progress. A vote in support of this legislation is effectively saying it is okay for anyone to mess around with the computer controls and software on a tractor even if it might result in unintended consequences of higher emissions or unsafe operation. That is not what we want.

For all these reasons and others, **RI H.5159 Right should not move forward.** It takes Rhode Island in the wrong direction to ensure clean air and in a dangerous direction on safety.

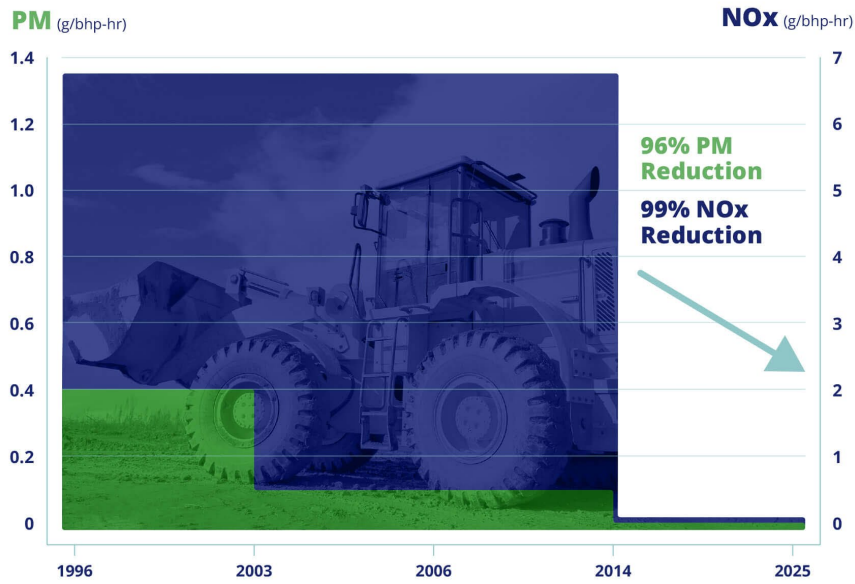
Thank you for considering these comments. We welcome the opportunity to answer questions and collaborate further with the Committee.

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ADVANCED DIESEL PROGRESS

Large Off-Road Equipment



Source: U.S. EPA Office of Transportation and Air Quality (OTAQ)

Keep it Clean Don't Tamper with Emissions Controls



Top 10 Reasons Not to Tamper with Emissions Controls

- 1 It is illegal and will cost you – a person may be liable for a maximum civil penalty of **\$4,819** per defeat device manufactured, sold, or installed, or per vehicle tampered. A dealer or vehicle manufacturer who tampers with a vehicle may be subject to significantly higher civil penalties.

IT WILL...

- 2 void your vehicle or equipment warranty.
- 3 cause problems in other parts of the vehicle or equipment.
- 4 cause problems with insurance.
- 5 violate job contracts.
- 6 increase air pollution.
- 7 make your vehicle or equipment unsafe to operate.
- 8 violate employer health and safety laws.
- 9 make your vehicle tough to sell and reduce its value.
- 10 bring the wrong kind of publicity to you and your business.

Embrace the new generation of efficient, powerful, and near-zero emissions diesels. Be good stewards of the technology and environment, don't tamper!

Whatever you call it...

- reprogramming
- tuning
- chipping
- defeating
- bypassing
- disabling
- removing

It's all the same: **TAMPERING**

It is illegal to install aftermarket emissions defeat devices, as well as remove or bypass emissions control devices like catalytic converters or particulate filters. It is also dangerous and bad for the environment.

If you suspect someone is manufacturing, selling, or installing illegal defeat devices or otherwise tampering with emissions controls, tell the EPA by emailing: tampering@epa.gov.



A message from the
Engine Technology Forum.
For more information visit
enginetechnologyforum.org

Report Environmental Violations

Learn more at: <https://echo.epa.gov/report-environmental-violations>.