



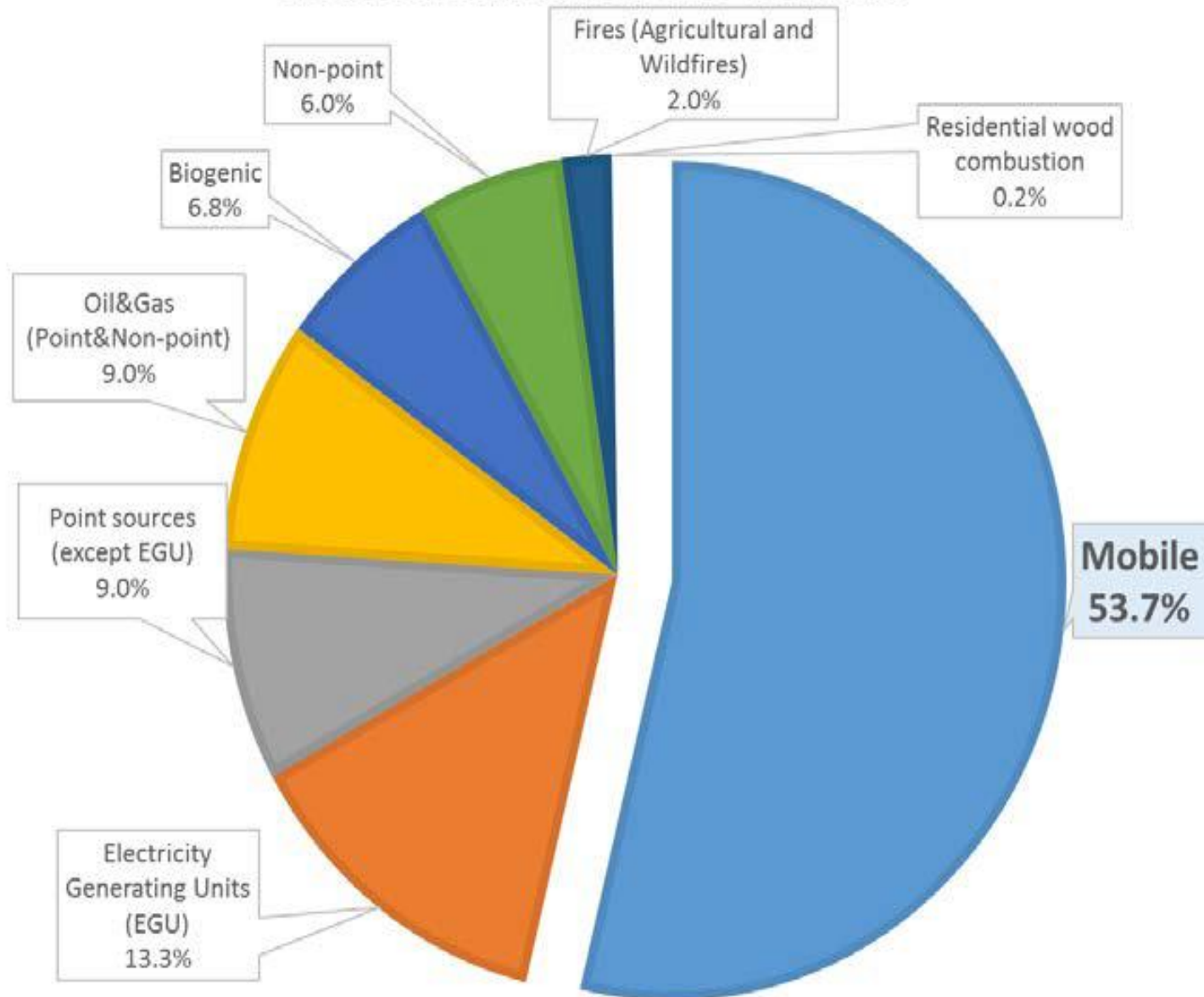
# Tampering & Aftermarket Defeat Devices

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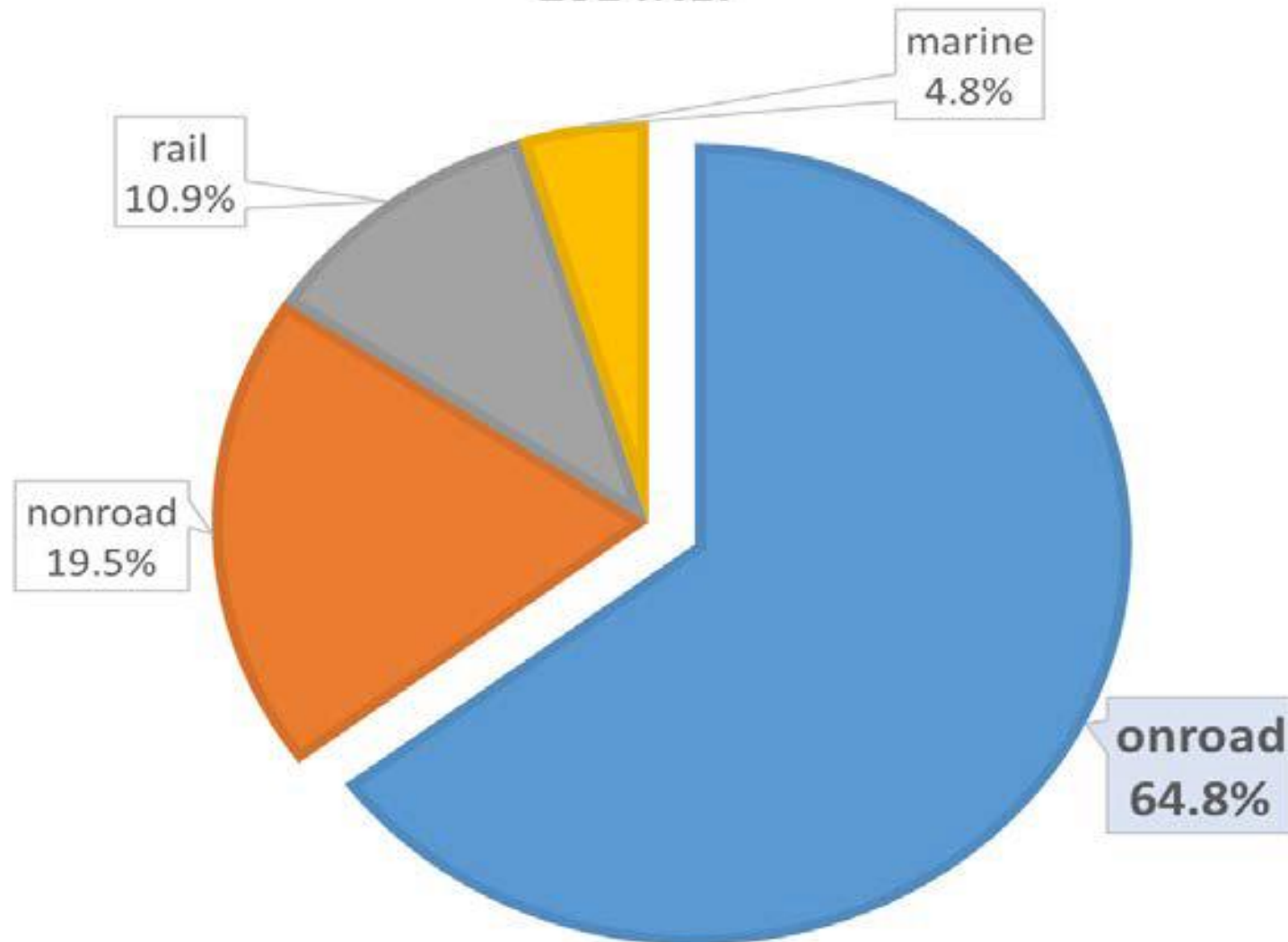
Association of Air Pollution Control Agencies  
August 27, 2019



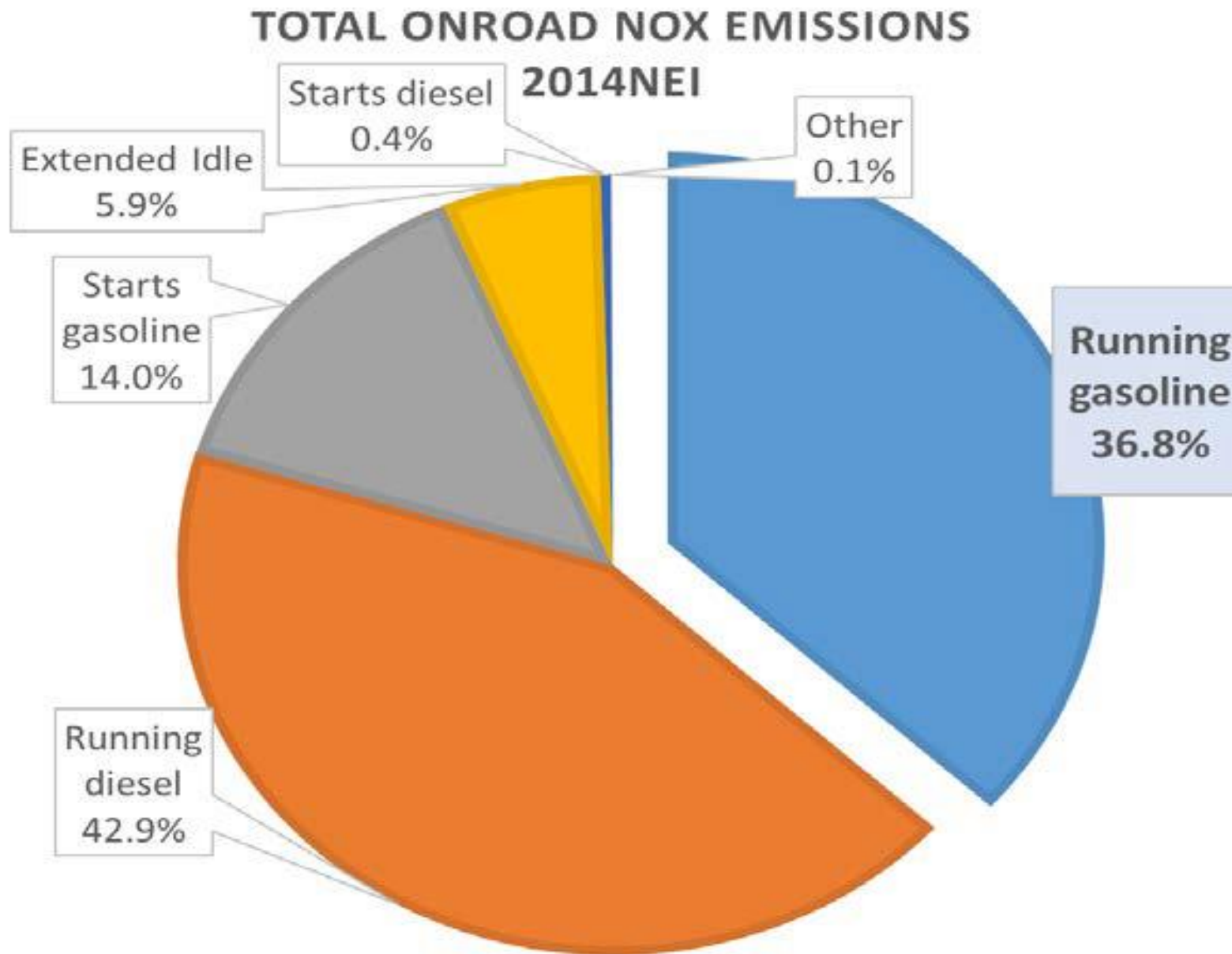
## TOTAL NOX EMISSIONS 2014NEI



## TOTAL MOBILE NOX EMISSIONS 2014NEI







# The Problem of Tampering & Aftermarket Defeat Devices

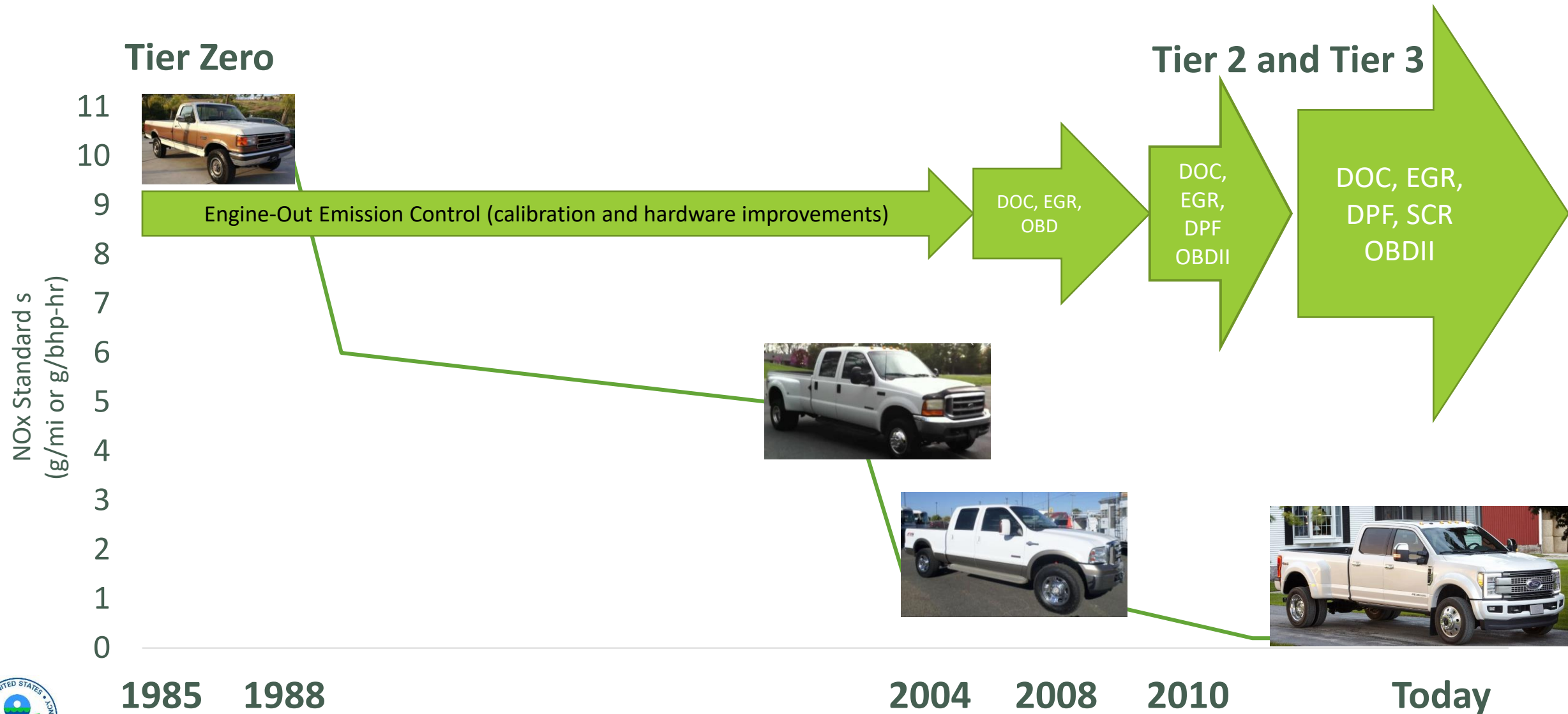
They cause **excess emissions** of NO<sub>x</sub>, PM and other pollutants.

They are **prevalent nationwide**. Contributing factors:

- tightened emission standards;
- steady demand from vehicle and engine owners who want to remove emissions controls (often for the purposes of increasing performance or avoiding maintenance costs);
- technological advancement of aftermarket electronic devices; and
- many who profit from manufacturing, selling, and installing aftermarket defeat devices.



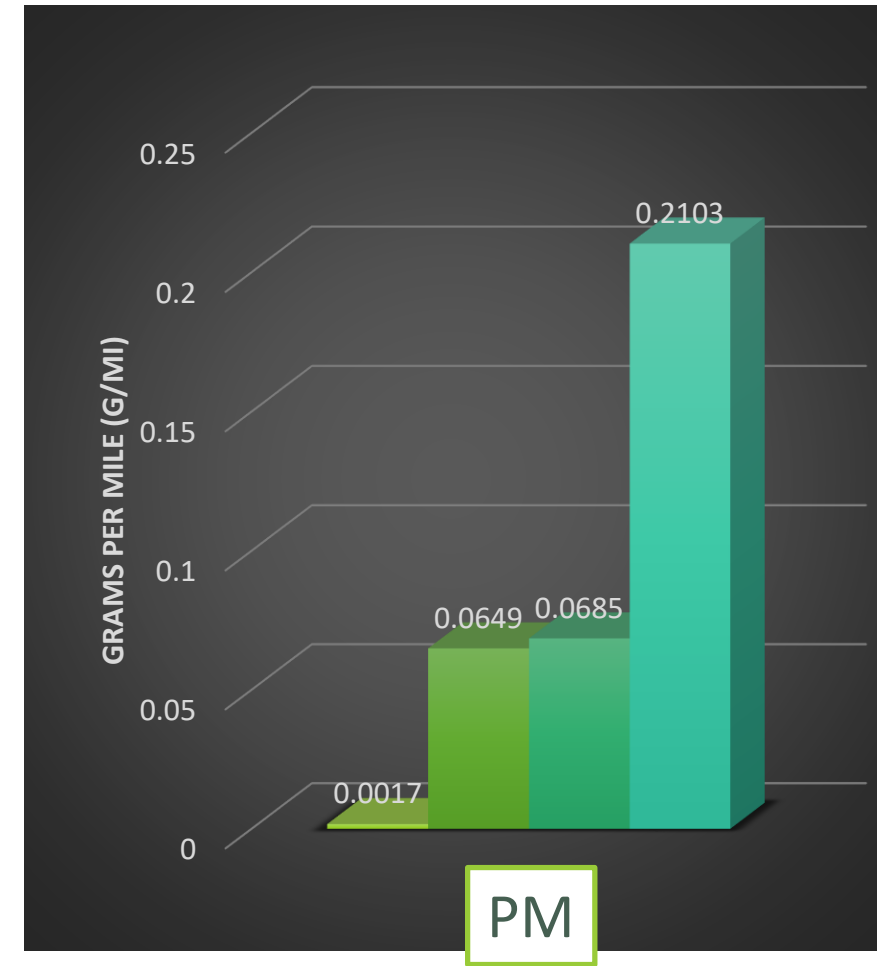
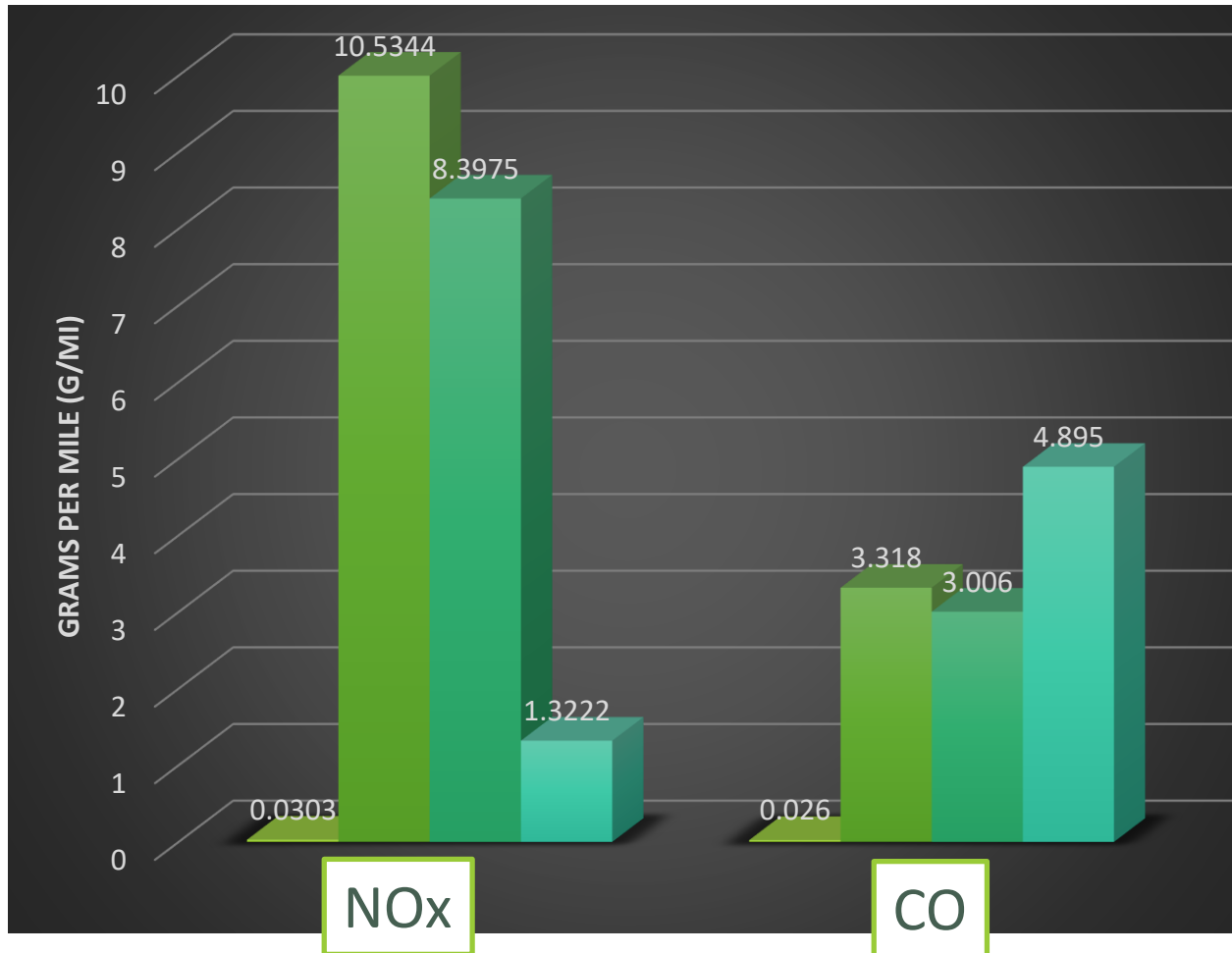
# NOx Emission Standards and Controls



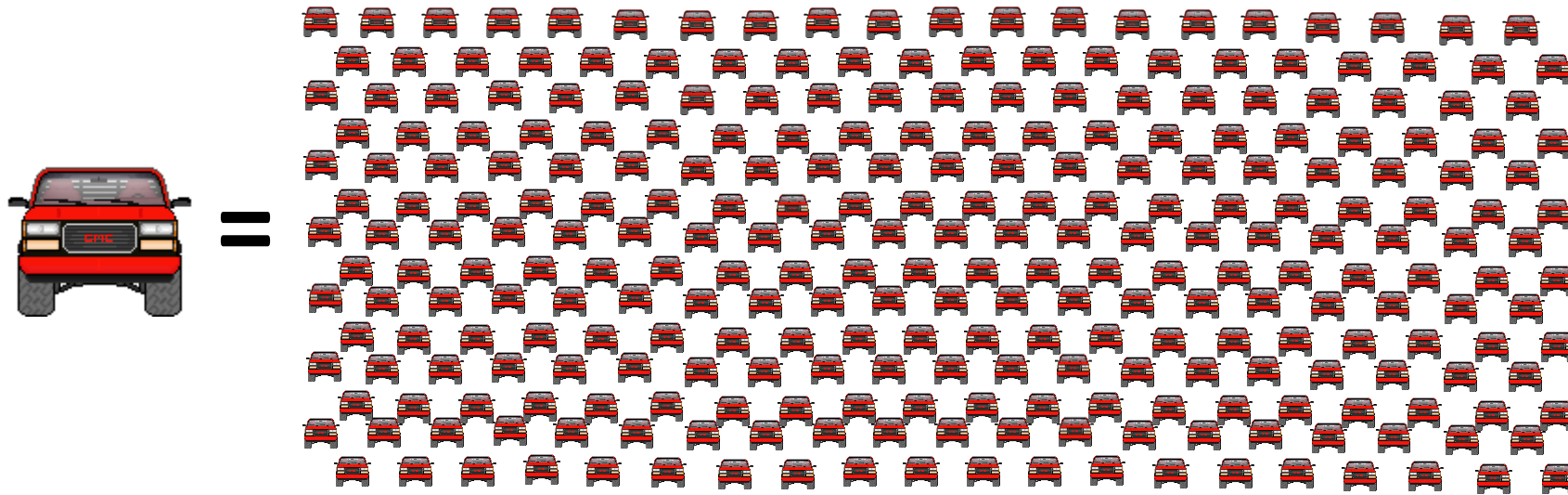
# EPA Tuner Emissions Tests

2011 Ford F-250 6.7Powerstroke

- First test: stock
- Second and Third test: EGR electronically disabled by tuner. DOC, DPF, and SCR replaced with straight pipe and disabled by tuner in calibration.
- Fourth Test: EGR not disabled electronically by tuner. DOC, DPF, and SCR replaced with straight pipe and disabled by tuner in calibration.



# Emissions Increase Due to Full Delete



NOx increased ~310x

NMHC increased ~1,140x

CO increased ~120x

PM increased ~40x


These test results show the increase in NOx, NMHC, CO, and PM when a tuner enables the full removal of emissions controls (i.e., “a full delete”). These tests were conducted without the SCR, DPF, DOC, and EGR emission controls.





# Nationwide?

- Hard to say
- Evidence from recent EPA investigations concerning diesel pickup trucks (“trucks”) show cause for concern → →
- This is only the tampering the EPA has identified during recent investigations concerning diesel pickup trucks and is not an estimate of nationwide tampering rates.

- 
- 400,000+ trucks have been deleted. That’s ~10% of all trucks.
  - 400,000+ tons of excess NOx from deleted trucks.
  - Air quality impact equivalent to:
    - adding 7 million trucks to our roads,
    - doubling truck sales over the past decade.



# It's not just pickup trucks . . .

- EPA investigations find tampering and aftermarket defeat devices for heavy-duty trucks, light-duty cars, agriculture equipment, forestry equipment, construction equipment, and more.
- Like diesel pickup trucks, tampering takes these vehicles and engines from today's standards **back to "tier zero."**



# Types of Defeat Devices:

## Exhaust Gas Recirculation Delete Hardware

Includes:

- EGR block off plates
- EGR cooler deletes

Calibration modification typically required

- Disable OBD diagnostics
- Disable EGR operation



EGR electronic disablement (all EGR parts present and sensors plugged in)



# Types of Defeat Devices:

## Exhaust Aftertreatment Delete Pipes

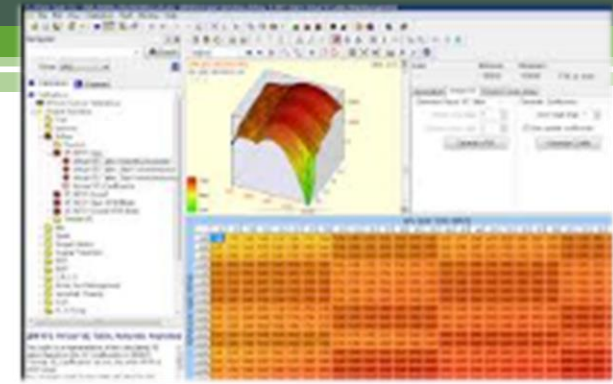
- “Straight” pipes, “Turbo back” pipes or “Downpipe back” pipes.
- Replaces stock exhaust system, including the necessary filters and catalysts.
- Calibration modification typically required to disable OBD diagnostics, sensors and other operations



# Types of Defeat Devices:

## Tuners and Tunes

- Tuning = Hacking into and modifying software and calibration file(s)
- Typically installed using a “tuner” through the vehicle’s data link connector
- Tuning is required to
  - make engine operate after removal of EGR , filters and catalysts.
  - prevent OBD from activating the check engine light and/or limp mode
- Even with EGR , filters and catalysts intact, tuning can substantially increase tailpipe emissions of NO<sub>x</sub>



2009 Chevrolet Silverado Truck Automatic LMM 6.6 Litre (12628594).tun





# Clean Air Act Civil Prohibitions: Defeat Devices

The following acts and the causing thereof are prohibited –

- For any person to manufacture or sell, or offer to sell, or install, a part or component for a motor vehicle, where
  - A principle effect of the part or component is to bypass, defeat, or render inoperative any emission control device, and
  - The person knows or should know that such part or component is being offered for sale or installed for such use or put to such use.

CAA § 203(a)(3)(B), 42 U.S.C. § 7522(a)(3)(B).



# Clean Air Act Civil Prohibitions: Tampering

The following acts and the causing thereof are prohibited –

- For anyone to remove or render inoperative an emission control component on a certified motor vehicle or engine prior to sale or delivery to ultimate purchaser, or
- For anyone to knowingly remove or render inoperative any emission control component on a certified motor vehicle or engine after sale and delivery to the ultimate purchaser.

CAA § 203(a)(3)(A), 42 U.S.C. § 7522(a)(3)(A).



## Clean Air Act Criminal Prohibitions

It is a crime to knowingly falsify, tamper with, render inaccurate, or fail to install any “monitoring device or method” required under the CAA.

CAA § 113(c)(2)(C), 42 U.S.C. § 7413(c)(2)(C).

Vehicle Onboard Diagnostics (OBD) are a “monitoring device or method” required by the CAA.





## National Compliance Initiative 2020-2023: *Stopping Aftermarket Defeat Devices for Vehicles and Engines*

This NCI will focus on stopping the manufacture, sale, and installation of defeat devices on vehicles and engines used on public roads as well as on nonroad vehicles and engines.

This NCI aligns with the Agency Strategic Plan.

- ✓ “Improving Air Quality.” This NCI will directly address huge sources of excess NO<sub>x</sub> and PM which appear to contribute to ozone nonattainment.
- ✓ **“Enhanced collaboration with state[s] . . . using the full range of compliance assurance tools.” EPA will engage with states to help get ahead of this problem.**
- ✓ “Compliance with the Law . . . EPA will focus resources on direct implementation responsibilities and the most significant violations, . . . examples include the Clean Air Act mobile source program.”

*Tampering & Aftermarket Defeat Devices, USA EPA, August 2019*







## National Compliance Initiative 2020-2023: *Stopping Aftermarket Defeat Devices for Vehicles and Engines*

EPA is launching this NCI in response to calls from states.

“NACAA also offered that EPA should consider an additional NCI focused on compliance by mobile sources with applicable laws and regulations.”  
(NACAA comment on NCIs)

“AAPCA members have previously expressed concern to U.S. EPA OECA about emission systems tampering... U.S. EPA OECA should work with air agencies to prioritize curtailing the manufacture and installation of these devices, particularly in areas that do not currently meet the NAAQS for fine particulate matter and ozone.”  
(AAPCA comment on National Program Guidance)





# EPA Enforcement Is Building off Ongoing Success

Since 2014:

- ✓ 40+ resolved civil cases
- ✓ Addressing over 1 million aftermarket defeat devices

<https://www.epa.gov/enforcement/clean-air-act-vehicle-and-engine-enforcement-case-resolutions>

Focus on **supply side**:

- ✓ National in scope, biggest impact
- ✓ Parts manufacturers, retailers, commercial fleets, tampering shops



*Tampering & Aftermarket Defeat Devices, USA EPA, August 2019*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.

In the Matter of:

Freedom Performance, LLC.

Respondent.

Docket No.  
CAA-HQ-2019-8362

COMPLAINT

Case 6:19-cv-01115 Document 1 Filed 06/14/19 Page 1 of 40 PageID 1

UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF FLORIDA  
ORLANDO DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

PUNCH IT PERFORMANCE AND TUNING  
LLC, D N S ENTERPRISES OF FLORIDA,  
INC., REI RESEARCH GROUP, INC.,  
MICHAEL PAUL SCHIMMACK, VANESSA  
SCHIMMACK, and  
LORI BROWN,

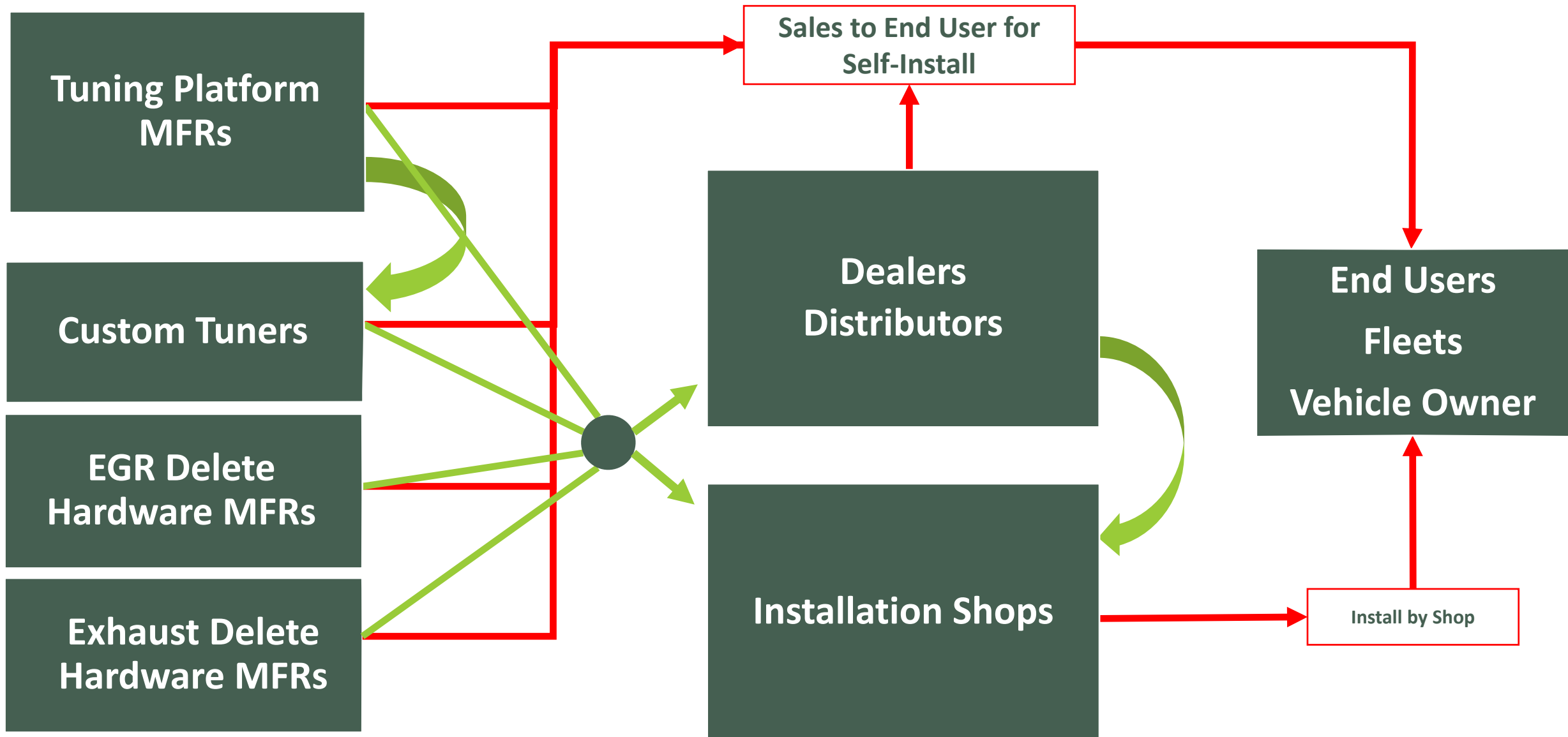
Defendants.

Civil Action No. 19-1115

COMPLAINT

The United States of America ("United States"), by authority of the Attorney

# Defeat Device Industry Overview



# States May Hold Key to Success: **Curtailling Demand**

Enforcement of the CAA prohibitions on tampering and aftermarket defeat devices is not delegated to the states.

But many states have laws:

- ✓ Prohibiting tampering
- ✓ Prohibiting operating tampered vehicles
- ✓ Prohibiting dealers from selling tampered vehicles

States can curtail the demand for tampering and aftermarket defeat devices

- ✓ Education and outreach
- ✓ Preventing registration of tampered vehicles
- ✓ Deterring vehicle dealers from buying tampered vehicles for resale



*Tampering & Aftermarket Defeat Devices, USA EPA, August 2019*

## Example of Strong State Laws - Texas Administrative Code

(a) Any person owning or operating any motor vehicle or motor vehicle engine on which is installed or incorporated a system or device used to control emissions . . . shall maintain the system or device in good operable condition and shall use it at all times . . .

(b) No person may remove or make inoperable any system or device used to control emissions from a motor vehicle or motor vehicle engine or any part thereof, except [to install a system], which is equally effective in reducing emissions from the vehicle.

. . .

(c) No person may sell, offer for sale, lease, or offer to lease in the State of Texas any motor vehicle unless . . . :

(1) The motor vehicle shall be equipped with either the control systems or devices that were originally a part of the motor vehicle or motor vehicle engine or an alternate control system or device as designated in subsection (b) of this section. . . .