



Stopping Aftermarket Defeat Devices

Presentation for North Central Texas Council of Governments

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NCI: Stopping Aftermarket Defeat Devices for Vehicles and Engines

Numerous companies and individuals have manufactured and sold hardware and software specifically designed to defeat required emissions controls in violation of the CAA

Illegally-modified vehicles and engines contribute substantial excess pollution that harms public health and impedes efforts by the EPA, tribes, states, and local agencies to plan for and attain air quality standards



What drives demand?

- Better power
- Better fuel economy
- Customization
- “Rolling Coal”
- Avoided downtime
- Avoided maintenance

Vehicle Emissions & Public Health

Pollutants contribute to serious public health problems, including:

- premature death in people with heart or lung disease,
- nonfatal heart attacks,
- irregular heartbeat,
- aggravated asthma,
- decreased lung function, and
- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.



Title II of the Clean Air Act: Vehicles and Engines

Clean Air Act: Vehicles and Engines

NOx

- EPA must **set standards for air pollutants** from motor vehicles that “...cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.”
- These standards must be set based on “...**the greatest degree of emission reduction achievable through the application of technology...available...giving appropriate consideration to cost, energy, and safety factors...**”

CO

Section 202 of the CAA, 42 U.S.C. § 7521

PM

EPA
determines
pollutants
and sets legal
limit

Manufacturer
designs
vehicles to
comply

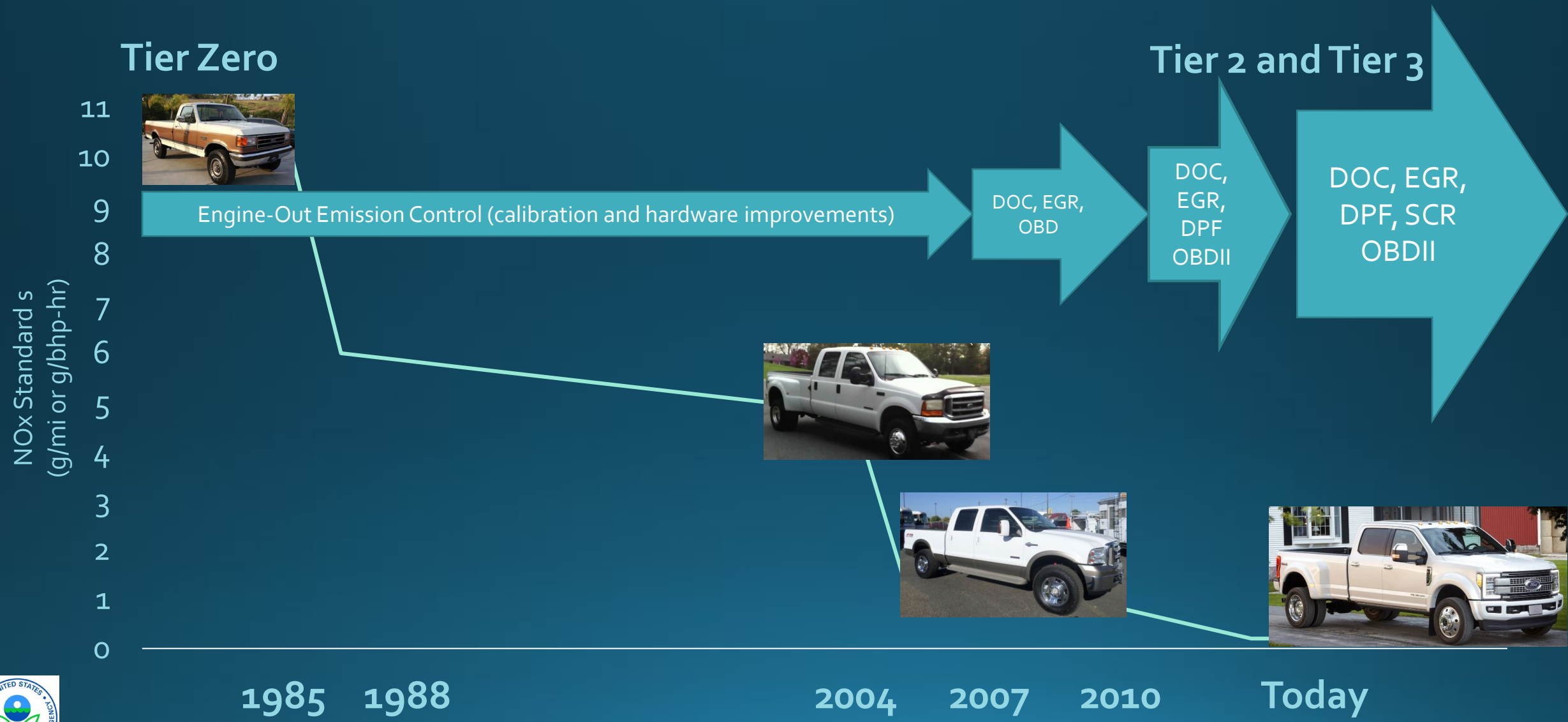
Certificate of
Conformity

Front-loaded
Program



Tampering and Aftermarket
Defeat Devices Undermine EPA's
Vehicle and Engine Program

NOx Emission Standards and Controls – Diesel Trucks



Source: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P109DA01.pdf>

NOx Emissions Increases Due to Full Delete

Tier Zero

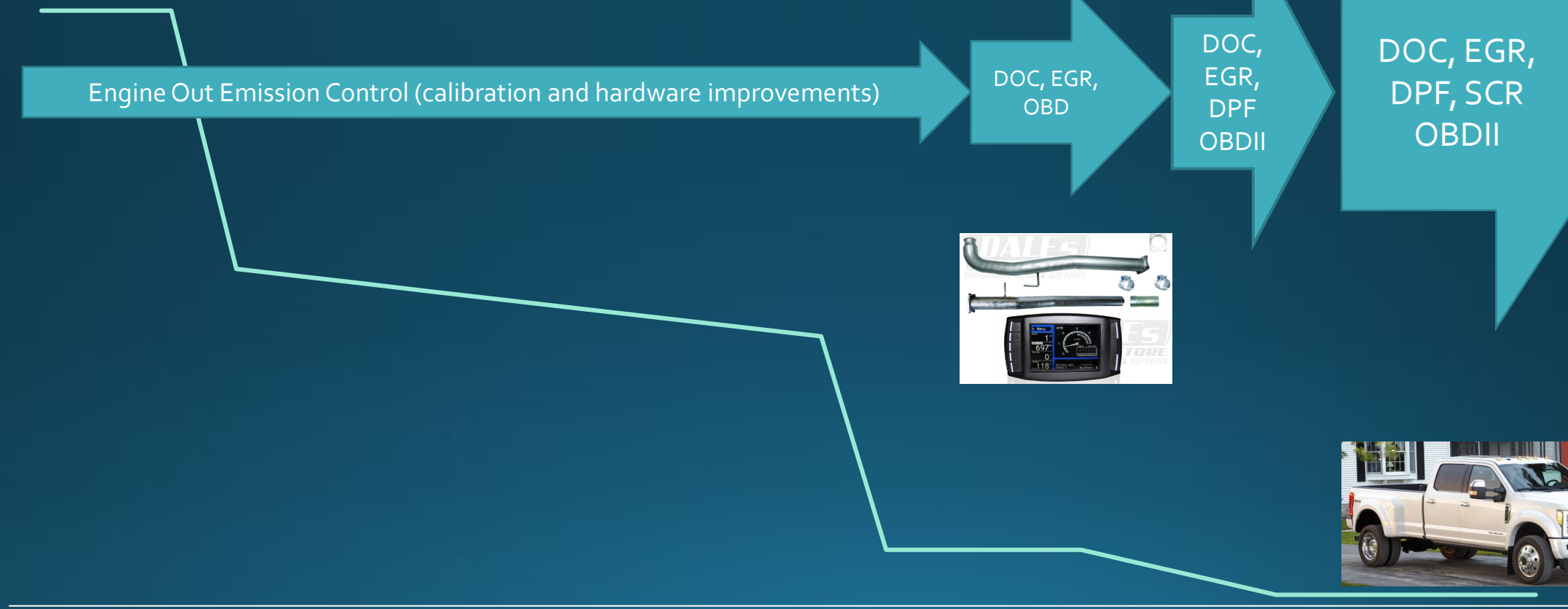


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Tier 2 and Tier 3

NOx Standard s
(g/mi or g/bhp-hr)

10
9
8
7
6
5
4
3
2
1
0



1985

1988

2004

2007

2010

Today



What is an aftermarket defeat device?

Hardware

- Straight or “delete” pipes
- EGR blocker plates



Straight Pipe

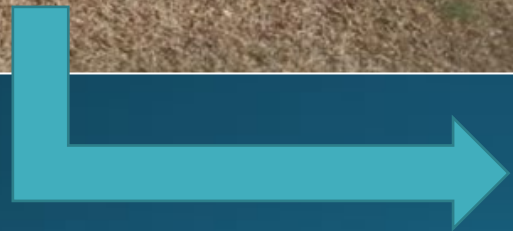
Software

- Tunes
- Tuners



Tuner

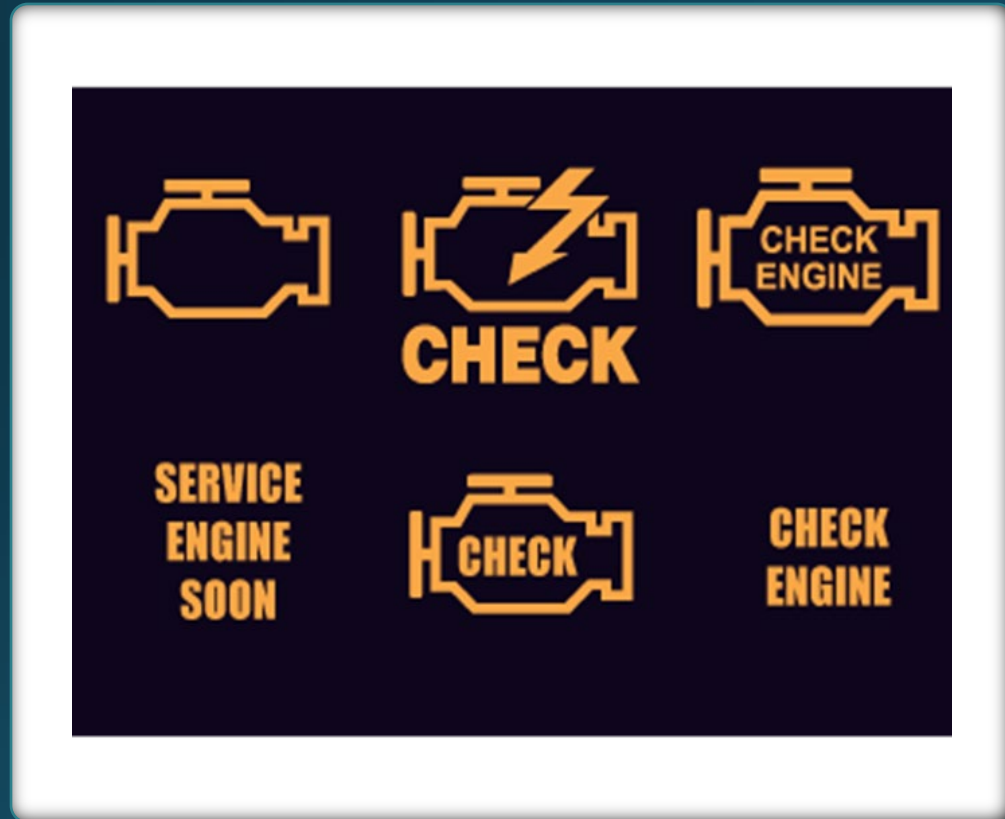
Aftertreatment system removed...



...and replaced with a straight pipe



But there's a problem...



- The **Onboard Diagnostic system (OBD)** monitors emission controls
- Notifies driver when emissions controls not functioning
- Illuminates the check engine light and may put the engine into “limp home” mode

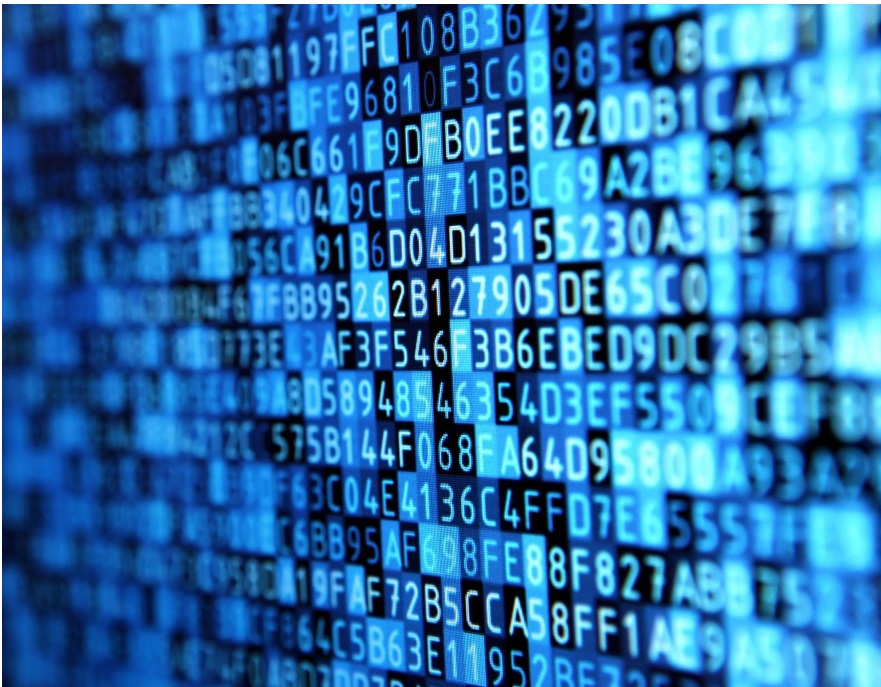
The solution? Software.

"The Acme Defeat Device unlocks your vehicle's hidden performance by recalibrating your vehicle's computer for maximum horsepower & torque, increased throttle response, firmer shifts and even increased fuel mileage."



Photo of a **tuner** mounted on a dashboard

Tuners and Tunes



- Software in the form of a “**tune**” manipulates the OBD.
- Tunes are often uploaded to a vehicle and controlled via a “**tuner.**”
- Tunes facilitate removal of emissions controls without triggering the check engine light or limp home mode.

Law & Policy

- Civil Prohibitions
- Tampering Policy
- Criminal Prohibition
- State Laws



Prohibition against 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).

Prohibition against Tampering

The following act and the causing thereof is prohibited –

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).



EPA Tampering Policy

Policy allows for service and the sale and use of aftermarket parts when an individual or company has a “reasonable basis” to believe their actions do not increase emissions

- Identical replacement part
- Emissions testing
- CARB EO

EPA issues no approvals under this policy

Criminal Prohibition

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

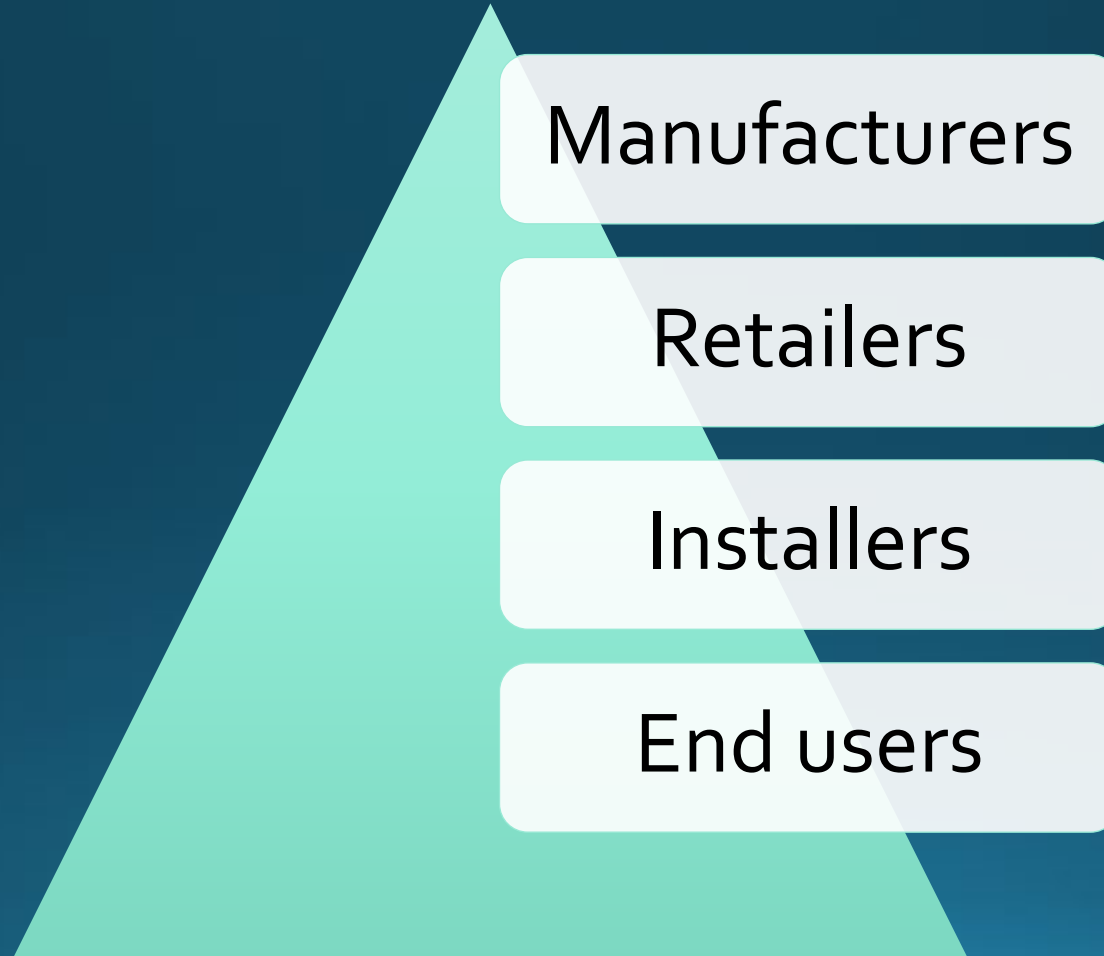


State Laws

- Match federal law
- More protective than federal law
- Civil and criminal prohibitions

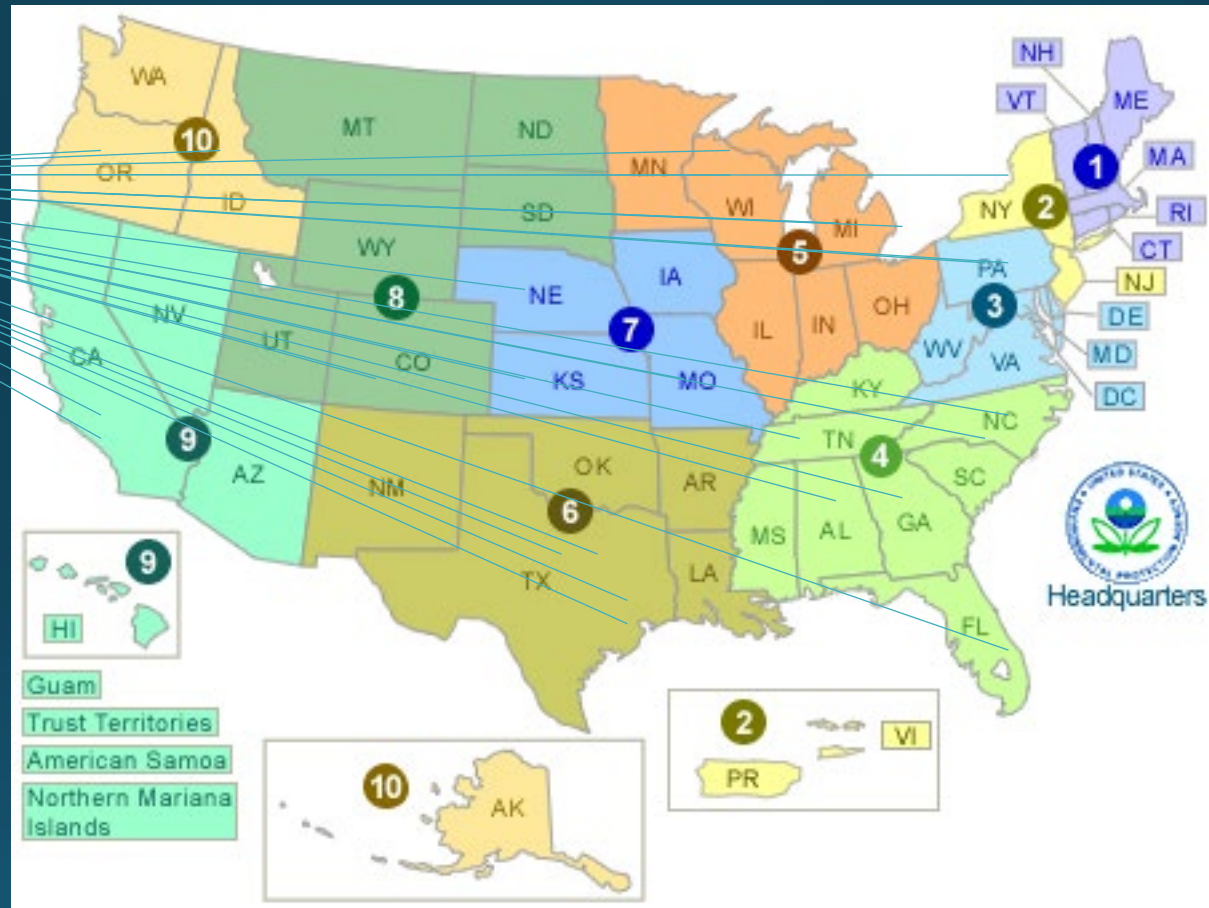


Supply and Demand



Sampling of tips in a month

16
States



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

Air Quality & Public Health

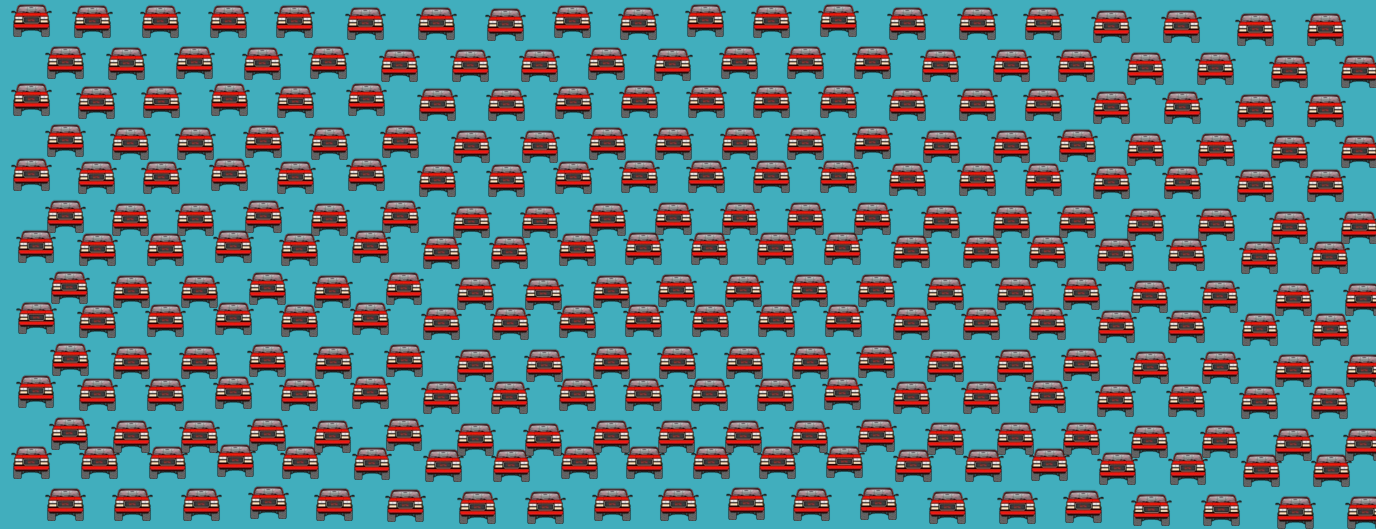
- Testing shows that vehicles equipped with defeat devices can have emissions tens to hundreds of times higher than compliant vehicles, depending on the device and the extent of the work done on the vehicle.
- Our cases show that these devices are effectively adding millions of cars and trucks to our public roads.



Emissions Increase Due to Full Delete



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NO_x increased ~310x

NMHC increased ~1,140x

CO increased ~120x

PM increased ~40x

Test results when a tuner enables the full removal of emissions controls.



In EPA enforcement cases alone...

**500,000+ trucks have been deleted.
That's ~13% of all trucks.
500,000+ tons of excess NOx**

**Air quality impact equivalent to
adding 9 million more trucks to our roads,
doubling truck sales over the past decade.**

Civil Enforcement

- ✓ 100+ resolved civil cases
- ✓ Addressing over 1 million aftermarket defeat devices
- ✓ Parts manufacturers, retailers, commercial fleets, tampering shops



Criminal Enforcement

Department of Justice

U.S. Attorney's Office

Southern District of California

SHARE 

FOR IMMEDIATE RELEASE

Thursday, April 11, 2019

San Marcos Companies and Executives Charged with Tampering with Emission Control Devices on Diesel Truck Fleet

Assistant U.S. Attorney Melanie K. Pierson (619) 546-7976  

NEWS RELEASE SUMMARY – April 11, 2019

SAN DIEGO – A federal grand jury in San Diego today returned a six-count indictment charging three San Marcos companies, two managers and a technician with various felonies related to tampering with emission control devices on heavy-duty diesel trucks.

Diamond Environmental Services LP, Diamond Maintenance Services, LLC and Diamond Solid Waste, Inc. (collectively “Diamond”) of San Marcos, California, plus owner and manager Arie Eric De Jong III, manager Warren Van Dam and technician Jorge Leyva Rodriguez of ECM Diesel Programming were charged with conspiring to manipulate the electronic control module (ECM) on Diamond’s fleet of heavy duty diesel trucks. The alleged manipulation was designed to disable the monitoring system that would

Compliance Assistance

EMISSIONS-RELATED PARTS

BEFORE YOU SELL...
Have proof that the parts will not increase emissions (for example, emissions test results or an Executive Order from California Air Resources Board demonstrating no illegal emissions increase for the intended use of the part).

BEFORE YOU INSTALL...
Have proof that the vehicle will be returned to its original, stock configuration after installation; or
Have proof that the parts will not increase emissions.

PASSED

REPORT PROBLEMS

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

EPA

**TAMPERING
POLLUTES OUR AIR**

- Outreach and education
- Compliance assistance materials
- Meetings with stakeholders

States Stopping Defeat Devices

- States can curtail demand for defeat devices
 - Education and outreach
 - Preventing registration of tampered vehicles
 - Deterring vehicle dealers from buying tampered vehicles for resale
 - Enforcement against those who tamper, including commercial fleets and maintenance shops

Examples of State Action

- New Jersey DEP enforcement action against the nation's largest auto auction company for selling tampered trucks
- Utah repair and replace program for diesel trucks
- Maine updates to state legislation to strengthen enforcement





Any Questions?

Thank you for your time today!

Contact Information

- Report violations:
tampering@epa.gov
- Policy, guidance, closed cases and publications can be found at
www.epa.gov
- Lauren Tozzi: 202-564-4904,
Tozzi.Lauren@epa.gov