



# **Diesel Gate**

***The Volkswagen Emissions Scandal***

Drew Overgaard

# West Virginia University



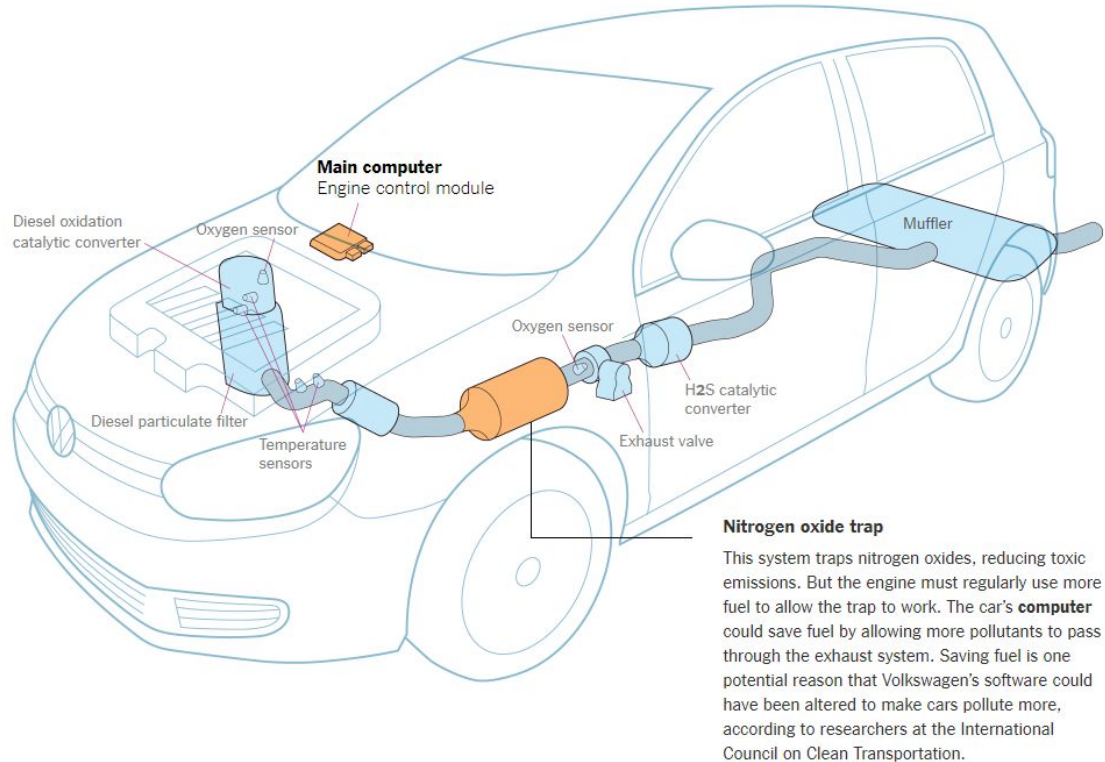
- Given \$70,000 in 2013
- VW 40x Nitrogen Oxide Emissions
- Cheat Software found



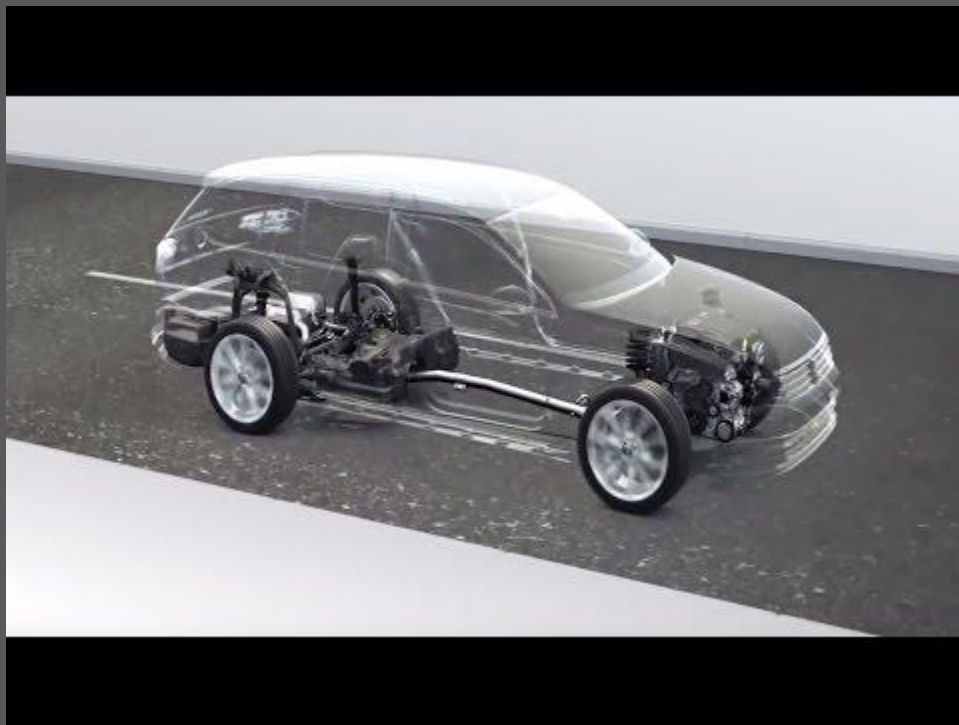
Dr. Arvind Thiruvengadam was a graduate student at the University who helped test emissions of the VW cars.

# Cheat Software - How it worked

- The software could, “sense test scenarios by monitoring speed, engine operation, air pressure and even the position of the steering wheel.” (Hotten, 2015)



# Video Explanation



# Affected vehicles

- 2009-2015
- Roughly 11 million cars worldwide
- 600,000 cars in the United States



VOLKSWAGEN  
**Touareg**  
2009 to 2016



AUDI  
**A6 Quattro**  
2014 to 2016



AUDI  
**A7 Quattro**  
2014 to 2016



AUDI  
**A8 and A8L**  
2014 to 2016



AUDI  
**Q5**  
2014 to 2016



AUDI  
**Q7**  
2009 to 2016



PORSCHE  
**Cayenne**  
2013 to 2016



VOLKSWAGEN  
**Jetta**  
2009 to 2015



VOLKSWAGEN  
**Beetle and Beetle Convertible**  
2012 to 2015



VOLKSWAGEN  
**Passat**  
2012 to 2015



AUDI  
**A3**  
2010 to 2015



VOLKSWAGEN  
**Jetta SportWagen**  
2009 to 2014



VOLKSWAGEN  
**Golf**  
2010 to 2015



VOLKSWAGEN  
**Golf SportWagen**  
2015

# What to do with U.S. Cars

- Recycle vehicles
- Buy back
- Sell in a different country





# European Conspiracy

- Government collusion (EU Preference to German automakers)
  - More money for wrongdoing spent in U.S. than Europe
  - German government allows software update fix
  - Only 20% improvement by software update
  - Actual emissions levels withheld by VW and DMV stating only that the cars now meet European emissions requirements
- 
- Further fines against VW could affect entire German economy
  - Could affect other German automakers
  - Former government employees lobbyists for automakers



# Repercussions

- CEO Martin Winterkorn Stepped down September 23, 2015
- Some upper management fired
- October 2015 loses title of World's top Automaker
- \$4.3 Billion fine
- \$10 Billion buyback program
- Multiple lawsuits





# Who's to blame?

- In October 2015 Michael Horn (VW of America CEO 2014-2016) testified in the US blaming the scandal on Engineers.

"This was a couple of software engineers who put this in for whatever reason."

- Claimed the cheat devices were not a corporate decision.
- 9 managers suspended

# Not The First Time



VW 1970's defeat device

Other Manufactures

- GM
- Chrysler
- Renault

# Resolution

- November 2015 VW gives \$500 to diesel owners in the U.S. as a goodwill gesture.
- VW issues a recall in Europe
- April 2016 VW buyback in U.S.
- Attempting to find solution to make U.S. cars meet emissions. Cars must be clean before being sold.
- Ongoing criminal investigations

# NSPE Code of Ethics

- “Hold paramount the safety, health, and welfare of the public.” (Code of Ethics), the first Fundamental Canon in the code of ethics
- “Engineers shall be guided in all their relations by the highest standards of honesty and integrity.”(Code of Ethics)
- Avoid Deceptive Acts
- Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.
- Adhere to the principles of sustainable development in order to protect the environment for future generations.

# Moral Theories

- Duty Ethics
- Rights Ethics

# What can be learned?

The VW emissions scandal will serve as a reminder to engineers and executives that their decisions to cut corners in order to meet goals or increase profits could have disastrous financial and social impacts on their company.