

## ***Volkswagen's Emissions Evasion***

In 2015, the U.S. Environmental Protection Agency (EPA) issued a notice of violation to German automobile company Volkswagen. The company's vehicles met emissions standards when tested in indoor lab environments but failed when tested outside of the lab. On roads, the vehicles' emissions equipment reported 40 times above the permissible levels of dangerous gases as set by EPA standards. After the EPA presented evidence to Volkswagen, the company eventually admitted to using a "defeat device" in the software of the vehicles' engines. This software detected when the automobiles were in lab environments and adjusted the level of power and performance to pass emissions requirements.

This was not the first violation Volkswagen faced for skirting emissions tests. In 1973, the company used temperature-sensing devices to deactivate vehicles' emissions control systems. Volkswagen settled those charges with the EPA for \$120,000 and admitted no wrongdoing.

Volkswagen began using the software-based defeat device in 2008 after finding that its engine could not pass the pollution standards set by many countries. This was a diesel-based engine newly developed at a high cost to the company. In the U.S., the company marketed new vehicles with this engine as environmentally responsible "clean diesel."

In response to the EPA's disclosure, Volkswagen CEO Martin Winterkorn stated, "I personally am deeply sorry that we have broken the trust of our customers and the public." He blamed the deceptive practices on "the terrible mistakes of a few people." Winterkorn soon resigned and was replaced by Matthias Mueller. Mueller stated, "My most urgent task is to win back trust for the Volkswagen Group—by leaving no stone unturned." Volkswagen launched an internal investigation and recalled as many as 11 million cars worldwide, pledging €6.7 billion (approximately \$7.3 billion at the time) for repairs. Volkswagen board member Olaf Lies stated, "Those people who allowed this to happen, or who made the decision to install this software—they acted criminally. They must take personal responsibility."

Researchers and journalists have pointed out larger concerns in the ways emissions are regulated. Reporter Jack Ewing, who followed the case closely for *The New York Times*, pointed out inconsistencies between American and European standards and enforcement. He stated, "What emerged from this case was that America, first of all, has stricter emissions standards. And the U.S. enforces them. Even though Europe had a lot of the same rules on the books...they just weren't enforced at all." Researchers found that emissions tests could be gamed because the EPA's tests were set up for manufacturers to pass. University of Denver research associate Gary Bishop noted, "One



thing most people are not aware of is that manufacturers will have specific drivers who drive certain models because they can legally drive the test and produce the lowest emissions for that model.” Professor Donald Stedman, an associate of Bishop’s, pointed out the compromises in designing cars, “Drivers want optimum power, performance and fuel economy, the EPA wants passing the test... [These] goals are often not compatible.” Other automobile manufacturers have engaged in similar practices over the past several decades, including General Motors, Ford, Chrysler, Nissan, and Toyota.

In addition to Winterkorn’s resignation, the company shuffled around several other executives. In January 2017, Volkswagen pleaded guilty to criminal charges of defrauding the U.S. government and obstructing a federal investigation. The company agreed to pay a \$2.8 billion criminal fine and \$1.5 billion in civil penalties on top of a \$15.3 billion settlement with U.S. regulators. This was the largest settlement in the history of automobile-related consumer class action cases in the United States.

**Concepts:** Incentive Gaming, Bounded Ethicality, and Ethical Fading

**Ethical Insight:**

Volkswagen (VW) spent millions on developing a new diesel-based engine. The company was obviously incentivized to sell as many cars as possible. But government regulations also required the cars to be environmentally-friendly, and engineers could not figure out how to design the VW engines to both meet environmental standards and performance standards. When Volkswagen found that their engine would not pass emissions standards, they developed a “defeat device” that would alter an engine’s performance in a lab environment to pass the test. This gaming of the system is more likely to happen when incentives are high and opportunities to evade detection are available. When VW marketed new cars with these engines in the United States, they described the technology as “clean diesel.” It was, in fact, anything but “clean.”

Economists often model people as being perfectly rational, although evidence from the real world makes it clear that for a variety of reasons people are only “boundedly rational.” They are largely rational, but far from perfectly so. Similarly, people are boundedly ethical. They generally act ethically, but a variety of social and organizational factors, cognitive biases, and even situational factors can cause people to make poor moral choices.

While the VW engineers who developed the defeat device were likely rational and (largely) ethical people, their bounded rationality and bounded ethicality influenced their actions. They wanted Volkswagen to succeed, and the ethics of developing the device for their company faded from view. Indeed, engineers and executives at VW seem to have become so focused upon meeting technical standards and maintaining the company’s profits and reputation as a leader in anti-pollution technology that the ethical ramifications of the defeat devices were not taken

into account. While it may be argued that emissions tests were set up in a way that encouraged many automobile makers to game the system, for Volkswagen, gaming the emissions test with defeat devices ultimately proved to be an expensive misstep for the company.

**Discussion Questions:**

1. What factors led Volkswagen's managers to make the decision to try to cheat environmental tests via a "defeat device?" Explain how each of the following concepts was apparent in this decision: ethical fading, incentive gaming, framing, bounded ethicality, bounded rationality, obedience to authority, and conformity bias.
2. When the software-based defeat device was first used by Volkswagen in 2008, why do you think those involved decided to use the defeat device?
3. How did Volkswagen frame its goals? Do you think ethical considerations were in the managers' frame of reference? Why or why not?
4. Did the fact that its profit goals seemed immediate and concrete while the victims of pollution seemed very distant impact the decision making of the company's employees? Explain.
5. This was obviously an unethical strategy by Volkswagen. In retrospect, do you think it wise on financial grounds? Explain.
6. Engineers at Volkswagen complained that environmental standards were becoming impossibly strict. In what ways did emissions tests and regulation standards encourage automobile companies to game the system when testing their vehicles? How might these factors lead companies' ethical frameworks to fade from view?
7. It has been suggested that engineers often focus their attention on solving problems (such as how to build a defeat device and not get caught), and do not pay attention to the ethical particulars of a situation. Do you think that was the case here? Do you think that it is the case generally? Why or why not? What behavioral biases or situational factors may have impacted the engineers' involvement in developing the defeat device?
8. Are individuals more likely to cheat or engage in other wrongdoing if they think others are doing so? Why or why not?
9. At a minimum, scores of Volkswagen employees knew of the defeat devices. Why might none of them come forward? What was wrong with the company's culture that no employee felt safe to blow the whistle? How can a company create a culture that would encourage employees to step forward to stop wrongdoing?
10. How might automobile companies guard against ethical fading? How might regulating bodies like the EPA support protections against incentive gaming?
11. Would knowing that Volkswagen cheated on the emissions testing affect your decision to purchase one of their vehicles? Why or why not? How could a brand regain trust with consumers? Explain.

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