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How VW Paid $25 Billion for 'Dieselgate' — and Got Off Easy

VM Beetle models 2013-2015 had TDI technology and were one of the 15 models with cheating software. Courtesy of VW

By **ROGER PARLOFF** 5:01 AM EST

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Volkswagen has been hit with huge penalties in the U.S. for the emissions scandal, but not in Europe. Are the German automaker's senior executives likely to face any prison time?

On Dec. 6, former Volkswagen (VLKAY, -7.25%) engineer Oliver Schmidt was led into a federal courtroom in Detroit in handcuffs and leg irons. He was wearing a blood-red jumpsuit, his head shaved, as it always is, and his deep-set eyes seemed to ask, *how did I get here?* As Schmidt's wife tried to suppress tears in a second-row pew, U.S. District Judge Sean Cox sentenced him to what, had it been imposed in Schmidt's native Germany, would rank among the harshest white-collar sentences ever meted out: seven years in prison.

Schmidt was being punished for his role in VW's "Dieselgate" scandal, one of the most audacious corporate frauds in history. Yet his sentence brought no catharsis, least of all to Judge Cox, who at times seemed pained while imposing it. Sometimes, he told Schmidt apologetically, his job requires him to imprison "good people just making very, very bad decisions."

Schmidt was a henchman, everyone understood, and his sentence, a stand-in. Judge Cox was addressing a set of people in Germany who are beyond the reach of U.S. prosecutors because Germany does not ordinarily extradite its nationals beyond European Union frontiers. Above all, the Detroit courtroom was haunted by the shadow of an individual who was absent: Martin Winterkorn, who was VW's CEO during almost all of the fraud. His name was uttered only twice, yet his aura loomed over the entire hearing.

The outlines of the scandal are well known. For nearly a decade, from 2006 to September 2015, Volkswagen anchored its U.S. sales strategy — aimed at vaulting the company past Toyota to become the world's number one carmaker — on a breed of cars that turned out to be a hoax. They were touted as "Clean Diesel" vehicles. About 580,000 such sedans, SUVs, and crossovers were sold in the U.S. under the company's VW, Audi, and Porsche marques. With great fanfare, including Super Bowl commercials, the company flacked an environmentalist's dream: high performance cars that managed to achieve excellent fuel economy and emissions so squeaky clean as to rival those of electric hybrids like the Toyota Prius.

It was all a software-conjured mirage. The exhaust control equipment in the VW diesels was programmed to shut off as soon as the cars rolled off the regulators' test beds, at which point the tail pipes spewed illegal levels of two types of nitrogen oxides (referred to collectively as NOx) into the atmosphere, causing smog, respiratory disease, and premature death.

At first, Volkswagen insisted the fraud was pulled off by a group of rogue engineers. But over time the company has quietly backed away from that claim, increasingly focusing on protecting a small cadre of top officials. The crime may well have started among a relatively small number of engineers afraid to admit to feared top executives that they couldn't reconcile the company's goals and the law's demands.

Over the past two years, prosecutors in the United States and Germany have been tracing who was aware of the scheme and have identified more than 40 people involved, spread out across at least four cities and working for three VW brands as well as automotive technology supplier Robert Bosch. In a new, potentially explosive move, some Justice Department officials are pushing to indict Volkswagen's former CEO. Such a step would be largely symbolic — the U.S. has no extradition treaty with Germany — but it would send a message that the misconduct was egregious and directed from the top.

And it would highlight a stark contrast in punishment. U.S. authorities have extracted $25 billion in fines, penalties and restitution from VW for the 580,000 tainted diesels it sold in the U.S. In Europe, where the company sold 8 million tainted diesels, VW has not paid a single Euro in government penalties.

There's no doubt that Oliver Schmidt was guilty. He admitted that he'd been part of a cover-up. Yet he was far from the mastermind. Schmidt claimed not to have learned of the cheating till June 2015, just three months before the decade-long conspiracy ended, though he admitted that he "suspected" it in 2013.

Schmidt, 48, was an engineer who for several years was VW's main point of contact with U.S. environmental regulators. He had only recently been promoted to a midlevel officer (making about $170,000 a year) when he got involved in the cover-up. Everything about him exuded a car-oriented company man. Born in Lower Saxony, the VW-dominated state where about 110,000 of the company's 600,000 employees work, Schmidt came to the company in 1997, straight out of military service. About 50 personal letters submitted through his attorney — "I don't think I've ever seen as many," Judge Cox observed — extolled him as a loyal and loving son, brother, husband, uncle, and friend. In his spare time, the letters recounted, Schmidt enjoyed collecting old slot-car racing sets and restoring classic VW Beetles. When Schmidt got married, in 2010, he and his wife (herself an automotive engineer) held the ceremony in the showroom of a friend's Volkswagen dealership in Miami. Schmidt was an all-too-loyal, VW lifer.

His punishment was designed to further "general deterrence," Judge Cox explained at the hearing. In other words, the point was to send a message to other corporate officials that following illegal orders is no defense. It doubtless reflected frustration as well.

Schmidt had committed his crime, Judge Cox told him, "to impress … senior management and the board." He was talking about Winterkorn, who was not only CEO from 2007 till the scandal brought him down in 2015, but also chairman of the company's management board. Schmidt and a second employee had made presentations to Winterkorn and other senior officials at a meeting on July 27, 2015, according to versions of the facts endorsed by both Schmidt's counsel and the prosecutors.

Winterkorn was a notorious micromanager — he was known for carrying a micrometer with him, so he could personally measure VW parts and tolerances down to the hundredth of a millimeter — and an imperious martinet. He was also then the highest paid CEO in Germany, having made $18.6 million the previous year, more than 100 times Schmidt's pay.

Schmidt and a colleague had been summoned before Winterkorn to help solve a crisis. U.S. regulators had taken the drastic action of refusing to permit the sale of VW's model year 2016 diesels — so crucial to its U.S. strategy — and the CEO wanted Schmidt to explain what was going on. As Schmidt would lay out, regulators with the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency had discovered a serious anomaly: VW Clean Diesels complied with NOx-emissions standards when tested in the lab, but then discharged up to 40 times the legal limit when driven on a road. Dissatisfied with more than a year of evasions and stonewalling, the regulators had decided to bar VW's 2016 diesels from the U.S. until they got better answers.

The July 2015 meeting with Winterkorn delved into detail about the company's misbehavior, legal filings allege. "An unindicted co-conspirator presented certain technical aspects of the defeat device," according to Schmidt's sentencing memo. ("Defeat device" is the phrase used to describe the software that enabled VW diesels to fool emissions tests.) Schmidt warned attendees of "the potential severe consequences to VW if regulators discovered the cheating." A slide in his presentation raised a disturbing prospect — "Indictment?" — according to the FBI agent's affidavit that initiated the charges against Schmidt.

Schmidt and his colleague explained to the group "in unmistakable terms that Volkswagen had been cheating, how they were cheating," prosecutor Benjamin Singer told Judge Cox at the sentencing. (The prosecutors and Schmidt's attorney, David DuMouchel, declined to be interviewed.)

If one believes the prosecutors and Schmidt — that Winterkorn was unmistakably informed of the cheating at the meeting — the CEO's response to that information looked suspiciously like a cover-up. Winterkorn did not direct his subordinates to notify authorities about the cheating or launch an investigation to determine exactly what had happened.

Instead, he sent Schmidt on a mission to persuade U.S. regulators to allow the sale of 2016 VWs.

Winterkorn "directed Mr. Schmidt to seek an informal meeting with a senior-ranking CARB official he knew from his time in the U.S.," according to Schmidt's sentencing memo. "Rather than advocate for disclosure of the defeat device to U.S. regulators," the FBI agent alleged in his affidavit, "VW executive management authorized its continued concealment."

Related: *For more on the 'Dieselgate' scandal, read the* Fortune *feature story 'Hoaxwagen.'*

Before leaving on his mission, Schmidt "sought and obtained approval for the 'storyline' he intended to convey during his meeting with CARB," Schmidt's memo asserted. The script was approved by at least four senior VW officials below Winterkorn, according to the memo, which added, "Mr. Schmidt was instructed not to disclose the defeat device or any intentional cheating."

In August 2015, Schmidt flew from Germany to Michigan, where he successively lied to two CARB officials. He emailed "detailed updates" to his boss in Germany and ten other "senior people," conveying that "he was following the script of deception and deceit that VW, with Schmidt's input, had chosen," prosecutor Singer stated.

Finally, a different VW engineer, unable to stomach the deceit any longer, went off-script and confessed to CARB during a meeting on August 19. A VW supervisor formally conceded use of the defeat device to regulators on September 3, and the

EPA and CARB made VW's confession public on Sept. 18, 2015.

Winterkorn stepped down five days later, asserting that he was "stunned" by the events of "the past few days," adding that he was "not aware of any wrongdoing on my part." The company's supervisory board exonerated him the same day, stating that he "had no knowledge of the manipulation of emissions data." In testimony before the German Parliament in January 2017, Winterkorn insisted he had never even heard the phrase "defeat device" until the scandal erupted publicly. On four occasions that day he declined to answer legislators' questions, citing ongoing criminal inquiries by German prosecutors.

So far, the Schmidt sentencing in Detroit is the ex-CEO's closest brush with American criminal justice. Twenty-seven months after the conspiracy was exposed, Winterkorn has not been charged with any offense in either the United States or Germany. (His U.S. counsel declined comment for this article.)

Will he ever be? Will anyone higher up the ladder than Oliver Schmidt ever answer for this remarkable crime?

The answers to those questions remain very unclear. U.S. prosecutors want to indict Winterkorn, but have not yet received approval from the brass at the Department of Justice, according to two sources familiar with the process.

That would seem like a huge step. Yet in truth, a U.S. indictment of Winterkorn or other top VW figures is increasingly becoming moot simply because the prosecutors can't gain access to most of the key figures in the case. Winterkorn hasn't set foot in the U.S. since the scandal broke and, after Schmidt's crushing sentence, is not likely to do so anytime soon.

Among the eight VW engineers charged in the U.S., only Schmidt and James Liang, a non-supervisor sentenced to 40 months this past August, are actually in the U.S., and only one other — an Audi engine development supervisor, Zaccheo Giovanni

Pamio, who happens to be an Italian national — is extraditable.

That means the judicial focus is shifting to Germany. There, three sets of prosecutors are certainly going through the proper motions. The authorities in Braunschweig — acting for the state of Lower Saxony, where both the parent company, VW AG, and its VW brand passenger car unit are based — say they are investigating 39 individuals for fraud in connection with Dieselgate, one for obstruction of justice, and three for financial market manipulation (which in this instance would mean the failure to promptly disclose the gestating crisis to shareholders). In Munich, Bavarian prosecutors are looking at 13 individuals at VW's Audi unit, based in Ingolstadt, for fraud and false advertising. And in Stuttgart, three executives are under scrutiny for market manipulation.

The two market manipulation inquiries focus on Winterkorn and three very senior current VW officials. The Braunschweig prosecutors, for instance, are looking at supervisory board chairman Hans Dieter Pötsch (who was CFO when the scandal broke) and current VW brand manager Herbert Diess, while the Stuttgart authorities are scrutinizing Pötsch and current CEO Matthias Müller. (VW declined to comment on the record for this article other than to provide a written statement in which it asserted that its executives fully complied with disclosure laws.)

Yet progress is strikingly slow. There have been only two German arrests so far. One was of Pamio; the other was of Wolfgang Hatz, a senior supervisor at, successively, Audi, VW, and Porsche. German prosecutors do not confirm the identities of detained individuals or what they're charged with, but the Munich probe is focusing on fraud and false advertising, the office says.

We may not see many criminal prosecutions in Germany, let alone convictions or lengthy sentences. The country's law presents many serious hurdles. There's no criminal liability for corporations, for starters. There's no statute barring a criminal conspiracy, no relevant criminal clean air law, and no law against lying to regulators or investigators. (The latter is actually protected by the robust German right to silence, according to Carsten Momsen, a law professor at Berlin's Free University.) Prosecutors' tools to reward and turn perpetrators into state witnesses are weaker than those wielded by their American counterparts. And some of the criminal laws that do exist — written to catch individuals who swindle other individuals — may be ill-suited to capturing the corporate machinations that happened in this case.

The result is breathtakingly different outcomes for both the company and its customers in the two countries. In the U.S., the system has delivered swift consequences. Facing harsh corporate criminal sanctions, flexible and draconian criminal laws, and streamlined consumer class-action procedures, Volkswagen quickly capitulated. Within nine months — breakneck speed in the legal realm — it agreed to pay roughly $15 billion in civil compensation and restitution to consumers and federal and state authorities for the 2.0-liter cars involved, and the sum has since crept up to more than $25 billion, as deals were reached for the 3.0-liter cars, and for criminal fines and penalties. Volkswagen has bought back or fixed most of the offending vehicles, and customers have received thousands of dollars per car in compensation for a variety of losses, including the deception itself and diminished resale value. The company pleaded guilty in April to federal criminal charges of conspiracy, fraud, making false statements and obstruction of justice.

VW gave U.S. prosecutors liberal access to the fruits of an investigation it commissioned by the Jones Day law firm, which conducted more than 700 interviews and collected more than 100 million documents. (The inquiry is ongoing, according to VW.) VW also helped recover forensically thousands of pages of documents that had been deleted by scores of VW employees in the final days of the conspiracy. In return, U.S. prosecutors gave the company credit for cooperation, slicing 20% from its criminal fine, which came to $2.8 billion even after the reduction.

In Canada, too, the company has paid compensation, including a $290 million deal for 3.0-liter cars just reached in January. And in South Korea, Volkswagen also paid dearly, receiving record fines and seeing eight local VW and Audi officials charged criminally, with one now serving an 18-month prison term.

Yet in Germany and Europe, it’s been a totally different story. There, VW has not offered compensation to any customer. In Germany, where the key decisions were made and all the decision makers reside, no criminal or administrative fines or penalties have yet been imposed.

VW's "cooperation," which so impressed American prosecutors, hasn't extended beyond U.S. borders. Volkswagen has not shared the Jones Day materials with German prosecutors, for instance. And last April, the company revealed that it would be breaking its repeated promise to issue a report summarizing the results of the Jones Day inquiry. VW said the public statement of facts that accompanied its guilty plea revealed the inquiry's key findings, and that any further announcement would risk undermining ongoing investigations or conflicting with its plea agreement. But the plea bargain document is just 30 double-spaced pages, identifies nobody by name, and, as prosecutorial documents often do, plays its cards close to the vest. It includes only one sentence, for instance, about the July 27, 2015, meeting that was so central to the Schmidt prosecution. (It states that a meeting took place, but gives no hint of what was discussed or that senior executives were present.)

Even when German law enforcement has taken aggressive action, it has been stymied so far. Last March Munich authorities raided Jones Day's German offices and seized materials from the firm's VW investigation. But the Federal Constitutional Court has temporarily blocked their examination, at Jones Day's request, while it sorts out issues of attorney-client privilege and the privacy rights of interviewed employees. German court precedents are deeply divided on these questions, according to professor Momsen.

The definitions of "defeat device" in the U.S. and E.U. are nearly identical. Nevertheless, VW contends the software was lawful outside North America. Germany's Federal Motor Transport Authority, or KBA — notoriously lax in its diesel oversight policies — rejected this theory in December 2015.

The company has also insisted non-American customers suffered no injury. Because of more lenient NOx limits abroad, it maintains, most of those cars could be fully addressed with simple software fixes. Yet many engineers can't fathom how software alone could possibly repair a NOx problem without correspondingly reducing fuel economy and undermining the durability of the emissions control equipment — the very problems that led VW to cheat in the first place. The KBA and other national regulators have approved these fixes, but haven't released any test results shedding light on what the recalls achieved. "VW could not do miracles regarding NOx emissions without replacing the hardware," argues Yoann Bernard of the International Council on Clean Transportation, which commissioned the 2014 study by West Virginia University that first revealed VW's use of a defeat device.

Plaintiffs lawyers abroad are suing VW over the affected diesels there. But, like the criminal authorities, they are hampered by a slew of handicaps. Under E.U. rules, all 8 million E.U. customers who bought Dieselgate cars could theoretically sue in Lower Saxony, where VW AG is based. But in Germany there are no consumer class actions. In addition, plaintiffs have very limited discovery rights; lawyers are prohibited from accepting contingency fees; and plaintiffs who sue run the risk that if they lose, they will have to pay not just their own legal fees, but a portion of their adversary's, as well.

To be sure, VW isn't yet in the clear. It may yet be hit with penalties worth hundreds of millions of euros, imposed by German state prosecutors or by the BaFin, the Federal Financial Supervisory Authority (something like the U.S. Securities and Exchange Commission).

And two groups of plaintiffs — VW shareholders, and owners of VW diesels — are attempting to overcome the obstacles to civil litigation. The bigger threat comes from German shareholders, who allege that VW failed to disclose the budding scandal. Plaintiffs lawyers are using a "model" litigation mechanism, a class action analog available only for shareholder suits, which is scheduled to begin in September in the Higher Regional Court of Braunschweig. But that procedure is expected to take years and the amount recovered may be a fraction of the huge sums sought (€9.5 billion, or $11.2 billion), depending on how early or late the court concludes VW should have disclosed the crisis. At the same time, an innovative "group action" was filed in Braunschweig in November on behalf of a German consumer group — to whom 15,347 VW diesel owners had assigned their claims — by the Berlin office of the American law firm, Hausfeld.

In fairness, Volkswagen's obstructive stance abroad may be more defensible when one considers the vast divide between the political, social, and regulatory milieus in Europe and the U.S. Since the scandal broke, further testing has made clear that cheating on diesel emissions was endemic across Europe. In December 2016 the European Commission began investigating whether regulatory authorities in Germany and six other E.U. nations have been lax in their oversight of diesel emissions. Though VW's cheating was, in most instances, more brazen in methodology, its diesels' NOx emissions outside the U.S. appear to have been no worse than their competitors'. Moreover, BMW, Fiat Chrysler Automobiles, Daimler (maker of Mercedes), PSA (maker of Peugeots and Citroëns), and Renault-Nissan have all come under scrutiny over the past year by either German or French authorities for possible diesel emissions irregularities. (The manufacturers deny wrongdoing.)

Even in the U.S., it's become clear, VW's conduct — though still the most egregious — was not unique. In May the Justice Department sued Fiat Chrysler for having allegedly placed a species of defeat device on 104,000 model year 2014-16 Jeep Grand Cherokees and Dodge Ram 1500 pickups, the most popular diesel pickup sold in America. (FCA, which denies wrongdoing, is in settlement negotiations.)

European and, especially, German industrial, labor, and even environmental policy favored the production of diesel cars. Regulatory oversight was slight, penalties for violations were trifling, and national regulators were disinclined to handicap their home country's carmakers vis-à-vis those of neighboring countries, whose regulators were presumed to be winking at the same gamesmanship.

Dieselgate's $25 billion consequences in the U.S. have transformed the political landscape in Europe, however. The scandal has drawn attention to a long simmering public health issue that, it turns out, was not caused by Volkswagen alone, but rather by the diesel car industry and the political culture that nurtured and protected it. For example, a European government report has found that 72,000 EU residents die prematurely each year because of NOx emissions.

In February the Administrative Law Court in Leipzig will decide a case brought by an advocacy group called Environmental Action Germany that could eventually result in diesel car bans in as many as 70 German cities. Diesel auto sales are dropping precipitously in anticipation, and in December VW CEO Matthias Müller shocked the automotive world by suggesting in a newspaper interview that the time had come for Europe to abandon key tax subsidies that have long supported the diesel industry.

The regulatory, environmental, and cultural gap between the E.U. and the U.S. is closing. But it was that chasm that spawned Dieselgate, and that chasm that Oliver Schmidt toppled into. So there is some injustice in the fact that Schmidt will pay so dearly. Yet there will be even greater injustice if he is the only one to do so.

The key contours of the Dieselgate affair emerged soon after the scandal broke. Since then the slowly accumulating evidence amassed and presented (or leaked) from criminal, civil, and media investigations have only made the breadth of VW's conspiracy clearer. Examining the chronology of the company's behavior in light of that information leaves little doubt that knowledge of the wrongdoing reached high up the ranks, repeatedly coming within a whisker of CEO Winterkorn himself.

In 2006, Volkswagen initiated a strategy to revive its then-moribund U.S. sales by marketing a clean diesel car. The challenge was that diesels produce more NOx than gasoline engines, and American NOx regulations were far more stringent than Europe's — permitting only about one-sixth of what Europe then allowed. Most ways of cleaning NOx reduced fuel economy, harmed performance, took up space, increased cost, or required frequent servicing. (Environmentally, Europe had focused on reducing greenhouse gases, including carbon dioxide. Diesels, due to their excellent fuel economy, were great at reducing carbon emissions. But diesels also produced NOx, which causes smog. Because of the history of smog problems in Los Angeles, regulators from CARB and the EPA had long been more sensitive to the health dangers posed by NOx than their European counterparts.)

VW's U.S. strategy was born under then-CEO Bernd Pischetsrieder, and continued when Winterkorn replaced him in January 2007. In early 2008, Winterkorn announced a 10-year plan which called for tripling the company's U.S. sales by 2018, enabling it to surpass General Motors (GM, -2.32%) and Toyota (TM, -3.37%) to become the world's leading automaker. Clean Diesel was the linchpin of the plan, which, by mid-2015, had succeeded.

Winterkorn was the protégé of the chairman of VW's supervisory board, Ferdinand Piëch. (German companies have two boards: a management board, composed of top executives, and a non-executive supervisory board.) Piëch, who had been CEO himself from 1993 to 2002, was considered the most influential figure in the company's history. A gifted engineer and prophetic leader, he was also ruthless; Piëch boasted about his willingness to fire executives if they didn't deliver quickly.

VW had an arrogant culture, shielded by the vital role the company plays in its nation's economy; its officials' cozy relationship with German politicians; and its unusual quasi-public status (the state of Lower Saxony controls 20% of its voting stock). Piëch had survived major scandals, including a corporate espionage debacle in the 1990s, which led to a $100 million settlement with General Motors, and a nearly decade-long labor scandal that surfaced in 2004, in which the company made illegal payments to labor representatives and politicians. The company had a "corrupt corporate culture," lacking in "openness and honesty," former deputy U.S. attorney general Larry Thompson, who became VW's outside monitor in June under the terms of its U.S. guilty plea, told a German newspaper in December.

In Winterkorn, Piëch selected a Ph.D. engineer and former quality assurance chief with a reputation for perfectionism and micromanagement. Just a few years later *Forbes* would comment with wonder at how, in 2011, he visited the VW factory in Chattanooga, Tenn. — where some diesels were manufactured — "no less than seven times" to oversee the U.S. launch of the 2012 Passat. "He drove early prototypes," the article continued, "and pored over initial quality, using a micrometer he carries in his pocket to measure the tiniest of gaps between body panels. Even minor paint flaws didn't escape the former quality manager, one American executive recalled. 'He finds everything.' "

Under Pischetsrieder and then Winterkorn, two sets of engineers attacked the riddle of how to build a diesel passenger car for the U.S. market. It was a tall order, given how draconian U.S. environmental regulations were, at least in the company's view. A high-level VW supervisor, Wolfgang Hatz (since arrested in Germany), was captured on video in 2007, complaining about California's rules in a widely repeated remark that would come to be seen as prophetic. "The CARB is not realistic," he said. "We can do quite a bit, and we will do a quite a bit. But impossible we cannot do."

And so the two sets of VW engineers, located in different cities, embarked on their missions. One group would design the 2.0 liter engines for both VW and Audi cars. A second set, from Audi, would design the 3.0 liter engines for SUVs and luxury vehicles for both brands.

Both groups quickly homed in on the same solution: a defeat device. It is unclear whether they acted independently; to date U.S. prosecutors have not alleged coordination. Each group was aware of, and adapted, a variant of the cheating software that Audi had developed as far back as 1999, and had in its diesel V6 SUVs in Europe from 2004 to 2006.

At the time that the earlier cheating software was allegedly being implemented on Audis in Europe, Winterkorn was already just a couple steps from the action. He was CEO of Audi, while Hatz — reportedly a Winterkorn confidant — was Audi's head of engine development. When Winterkorn became CEO of VW AG in 2007, he promoted Hatz to head engine development for VW AG.

A succession of four top supervisors for engine development for the VW Brand, serving from 2006 to 2015, all knew about the cheating software, as did, from as early as 2006, the head of exhaust control measures for all of VW AG, according to U.S. prosecutors. Three of these five individuals have been indicted in the U.S., for conspiracy to commit wire fraud and making false statements. But all are in Germany, beyond the prosecutors' extradition powers. (None have filed papers in the Detroit criminal proceedings. Lawyers for two of them declined comment, and the others could not be reached by ProPublica.) None of the five have been charged in Germany.

News of the fraudulent software reached "senior Audi managers" as early as 2008, according to U.S. prosecutors. In January 2008, they assert, members of that team sent a presentation to the head of the group, Zaccheo Pamio, and other senior Audi managers, warning that the software solution was possibly illegal and “highly problematic in the U.S.” In July 2008, a member of Audi’s environmental certification team wrote Pamio that the software was “indefensible.” The plan went forward, nonetheless. (Last July, Pamio was charged in federal court in Detroit with conspiracy, wire fraud, and making false statements. That same month he was arrested by Munich authorities. His lawyers declined comment.)

In 2011, the cheating spread to a third VW brand in another city, seemingly creating still more opportunities for word to leak up to executives. VW had just acquired Porsche, and Porsche engineers in Stuttgart sought to adapt Audi’s 3.0-liter diesel engine for use in a Porsche Cayenne SUV for the U.S. market. That September Audi engineers explained to Porsche engineers how the cheat software worked, according to a civil complaint filed by the New York State Attorney General’s Office, and Porsche adopted the fraudulent technology. By this time Winterkorn had moved Hatz to Porsche as head of research and development. He served on Porsche’s management board, where he worked alongside VW’s current CEO, Müller.

Meanwhile, in Wolfsburg, problems with the 2.0-liter diesel exhaust systems were forcing knowledge of the cheat software further up the corporate hierarchy to people who knew Winterkorn personally and well. Engineer Liang had learned of unusually high numbers of hardware failures involving the NOx treatment equipment. The problem, as he diagnosed it, stemmed from the fact that the equipment was being used too much — not just during lab testing, but sometimes on the road. He proposed refining the cheat software to ensure that full exhaust treatment would be triggered solely during testing.

In July 2012 he and other engineers met with Hans-Jakob Neusser and Bernd Gottweis, according to U.S. prosecutors. Neusser was then head of engine development at the VW brand. Gottweis was a member of the powerful Products Safety Committee, answering to the head of quality management at VW AG, Frank Tuch. Tuch met weekly with Winterkorn, according to an account in VW’s in-house magazine. Gottweis was a close confidant of Winterkorn and was sometimes referred to as “the fireman” at VW — someone who put out fires.

Liang’s solution was approved, and his more finely tailored defeat device was installed on the next generation of VW diesels, which arrived in mid-2013. In addition, a recall was carried out in 2014 to retrofit older models with the tweaked software. Customers and regulators were told that the recall was to fix a dashboard warning light and address certain environmental issues. (Neusser and Gottweis have been charged in the U.S. with conspiracy to commit wire fraud and making false statements in the U.S; neither has been charged in Germany. Neusser’s attorney declined comment, and Gottweis could not be reached.)

In late 2013, the fact that cheat software was being used in 3.0 liter engines reached the top echelons of Audi, according to U.S. prosecutors, presenting still another opportunity for someone to blow the whistle. An Audi engineer, prompted by the concerns of a manager in the environmental certification department, had his people prepare a presentation to a “then-senior executive and member of Audi’s brand management board,” describing in detail how the software worked. The engineer who sent the presentation advised every recipient to delete the email and attachment after downloading it.

That same month, Oliver Schmidt saw a different presentation about Audi’s fraudulent software. “It would be good if you deleted us from the cover page,” Schmidt emailed afterwards. “If such a paper somehow falls into the hands of the authorities, VW can get into considerable difficulties.”

In March 2014, the biggest clue about the criminal conduct festering within VW began filtering out into the automotive community, soon reaching Gottweis, Tuch, and, through them, Winterkorn. At an industry conference, researchers at West Virginia University presented a study, which would be published in May. They had studied the emissions of three randomly selected diesel cars available in the U.S. A BMW X5 had done fine, but a VW Jetta and VW Passat had each performed suspiciously, passing the test in the lab, but emitting up to 35 times the lawful NOx limit during real-world driving.

In Wolfsburg, VW engineers, led by Neusser, Gottweis, and others formed an ad hoc committee to address the study. Their goal, according to prosecutors, was to concoct evasive and misleading responses to regulators' anticipated questions.

On May 23, 2014, Gottweis wrote a now infamous report about the West Virginia study, which Tuch forwarded to Winterkorn the same day, as part of his regular weekend package of reading materials. (VW suspended Tuch in October 2015, and he resigned in February 2016. He could not be reached for comment.)

The memo, revealed by *Bild Am Sonntag* in 2016, has been regarded as a smoking gun by Winterkorn's critics. "A thorough explanation for the dramatic increase in NOx emissions cannot be given to the authorities," Gottweis wrote. "It can be assumed that authorities will then investigate" to see if VW used a "defeat device," he continued, explaining what a defeat device was. A team is working on software changes that can "reduce the real driving emissions," he noted, "but this will not bring about compliance with the limits either."

For its part, Volkswagen asserts that nothing in the Gottweis report should have caused its CEO to suspect that anything more than a routine product defect was afoot. "This memo merely raised the prospect that U.S. regulators would investigate whether a defeat device was in use," the company's lawyers wrote in its motion to dismiss U.S. shareholder litigation in August 2016; "it did not state or imply that a defeat device had actually been installed, or what it meant if a defeat device were found by U.S. authorities, much less the potential magnitude of any associated financial risks resulting from such a finding."

Winterkorn admits receiving the report, according to papers his attorney filed in U.S. civil litigation, "but does not recall whether he read [it] that weekend." He also admits being aware of the West Virginia University study by May 2014 — 15 months before the conspiracy ended — but says, according to the same filing, that "he believed a task force of Volkswagen employees were working to address the situation."

One was. At its behest, VW engineers, including Liang, lied to CARB and EPA regulators for more than a year. They even promised regulators that they'd address the problem with a software fix, carried out through yet another recall in late 2014.

In November, Winterkorn was advised of this recall in a one-page memo that estimates the fix would cost just €20 million to effectuate — a negligible sum for a company whose 2014 net operating profit would come to €12.7 billion. Winterkorn, in his testimony before the German Parliament, said the memo reassured him that the problem had been addressed.

But by early 2015 CARB had discovered that the recalled vehicles still exceeded NOx limits during real-world driving.

By that time, Oliver Schmidt, who'd been at VW's environmental office in Auburn Hills, Michigan for three years, had been promoted. In February 2015 he had returned to Wolfsburg to become one of three deputies to Neusser, who, by then, had become chief of development for the VW Brand, overseeing 10,000 employees.

In July, CARB told VW engineers that it would refuse to certify the company's 2016 diesels until it got better answers. That precipitated the July 27, 2015, meeting at which Schmidt and a colleague made their presentations to Winterkorn and other top executives, including Herbert Diess, then and now the highest executive in charge of its VW brand passenger car unit, and a member of VW's management board.

"Winterkorn admits," his attorney wrote in a U.S. legal filing, "that on July 27, 2015, after a regular meeting about damage and product issues, he, Diess, and other VW AG personnel participated in an informal meeting during which there was a discussion regarding approval for the sale of model year 2016 diesel vehicles." However, the attorney, Gregory Joseph, continues, "Winterkorn denies that he knew the cause or significance of the issues related to diesel emissions before September 2015."

To date, the company has been vague and noncommittal about the July 27 meeting, and it declined to comment on it for this article. "Individual employees discussed the diesel issue on the periphery of a regular meeting about damage and product issues," the company said in a March 2016 press release, its last and fullest public discussion of matter. "It is not clear whether the participants understood already at this point in time that the change in the software violated U.S. environmental regulations. Mr. Winterkorn asked for further clarification of the issue." (The company is expected to describe its perspective on the meeting more fully in late February in a filing in German securities litigation, though such filings are not public.)

The lying to US regulators continued until August 19, when an engineer confessed to CARB regulators. Later that month, after word of this development reached Wolfsburg, a high-level in-house attorney notified employees that a "litigation hold" would be issued on September 1, after which they not be permitted to destroy pertinent documents. About 40 Volkswagen engineers took this as a directive to start deleting immediately. Some notified Bosch engineers, who did the same.

Top VW officials clearly sensed trouble. By August they had asked the American law firm Kirkland & Ellis to look into possible regulatory liability for use of a defeat device. VW received the reassuring news that the largest fine that had ever been meted out for a Clean Air Act violation had been just $100 million, in 2014, for an incident involving 1.1 million cars — more than twice as many vehicles as were then known to be implicated in VW's Clean Diesel problems.

Yet the incident being used as a benchmark was hardly similar. In that instance, Hyundai-Kia, which never admitted wrongdoing, had overstated fuel economy by 1 to 6 miles per gallon because it used figures obtained in the most favorable tests it had run, rather than by averaging results from a large number of tests. But the cars' emissions were never illegal, no recalls were required, and no lying to regulators had been alleged.

The text of the Kirkland memo suggests that the lawyers hadn't been informed that the company had been lying to regulators for a decade. The lawyers urged VW to find out if statements made to regulators had been "complete and not misleading." Given the lack of information, the memo concluded that "we are currently unaware of any facts that suggest any such [criminal] issues in the present situation." (Kirkland & Ellis did not return calls and emails seeking comment on the memo, which became public when plaintiffs lawyer Michael Melkerson filed it in a lawsuit on behalf of diesel owners who opted out of the Federal class action.)

On Sept. 3, 2015, a VW supervisor confessed to CARB in writing the use of a defeat device, formalizing his subordinate's earlier oral admission. Winterkorn was notified the next day, VW has acknowledged. Still, despite German laws requiring that material market information be disclosed immediately, VW shareholders were given no inkling that anything was amiss. They learned only when CARB and EPA stunned the world on September 18 with the news that the company had admitted using an illegal defeat device on close to 500,000 2.0 liter cars sold in the U.S. The Justice Department announced a criminal investigation the next day. Three days after that VW revealed that some 11 million cars worldwide were equipped with the dual-mode software that the U.S. regulators had discovered. Over that week, the company's shares lost about €32.5 billion in value ($38.5 billion at today's rates). In the ensuing months, the total decline ballooned to about €55.6 billion ($66 billion).

Volkswagen argues that it had no obligation to disclose anything until U.S. regulators announced they were issuing a "notice of violation" in September 2015. "Volkswagen believes that it duly fulfilled its disclosure obligation under capital markets laws," the company asserted in a written statement for ProPublica. "Right up until the publication of the notice of violation, the board of management believed, based on the advice of its U.S. external legal counsel and numerous precedents, that Volkswagen could resolve the issue consensually with U.S. regulators."

As the Dieselgate investigation slowly churned, allegations of a much vaster conspiracy unexpectedly emerged this summer. *Der Spiegel* reported then that since 1999 all five German carmakers — Audi, BMW, Daimler (which makes Mercedes-Benz cars), Porsche, and Volkswagen — had been colluding in ways that may have violated competition laws. (VW, which owns three of the brands, and Daimler have admitted to EC competition authorities that some discussions might have been improper; BMW maintains they were lawful.)

The participants held more than 1,000 meetings relating to 60 working groups on different aspects of automotive production, including emissions control. As early as 2007, according to the magazine, the emissions group began colluding on specifications for exhaust equipment that was used to control NOx emissions in some of the diesel engines. This new scandal could hurt VW executives by bringing even more scrutiny to their actions — or help them by suggesting every car company was doing the same thing.

In early 2018 came yet more news that sullied German automakers, as documentary filmmaker Alex Gibney and the *New York Times* reported that research organizations funded by those manufacturers — including VW — had, in 2014, gassed monkeys with diesel exhaust fumes from a modern-day, allegedly Clean Diesel VW and an old Ford (F, -4.39%) diesel pickup truck, each running on rollers in a lab, in order to show their relative effects. When the news broke in January, VW CEO Müller wrote to employees, calling the tests “unethical, repulsive and deeply shameful” and apologizing for “the poor judgment of individuals who were involved.” The CEO said the company is investigating and “we will be coming to all the necessary conclusions.” VW’s stock price fell when the reports of the monkey tests emerged. But that was a minor bump in a resurgence of the company’s shares: They’re now priced just above where they were when Dieselgate was revealed.

That James Liang and Oliver Schmidt — and perhaps eventually Pamio — would end up being the only ones to take the fall for Dieselgate in the United States is happenstance. Though Liang was working in Wolfsburg when the conspiracy began in 2006, he was transferred in 2008 to VW’s Oxnard, Calif., test center, west of Los Angeles, to help with the Clean Diesel launch. He was still working there in October 2015 when the FBI knocked on his door in the nearby affluent community of Newberry Park.

Liang began cooperating immediately, according to the government. A slight, mild-mannered man with a wife and three children, Liang, now 63, had worked for VW for 34 years. He was never a supervisor. Still, because of his long involvement in the scheme — from start to finish — Judge Cox sentenced him last August to 40 months in prison, a lengthier term than prosecutors had requested.

Schmidt's presence in the United States was unnecessary, even reckless. Acting without counsel, he contacted FBI agents in November 2015, offering aid with their investigation. The FBI flew him from Wolfsburg to London to meet with him there. U.S. prosecutors flew there, too, to participate. But the agents and prosecutors later determined that Schmidt lied extensively at the five-hour debriefing, falsely exonerating himself and his superiors, and setting back their probe.

Evidently imagining that he was still on good terms with the government, in December 2016 Schmidt had his U.S. lawyer notify the FBI that he and his wife would be travelling to Florida later that month for their annual Christmas vacation. (He owned some rental properties in Florida, and had hoped to retire there.) On January 7, 2017, as they headed home to Germany, eight officers converged on Schmidt in a men's room at the Miami International Airport. They brought him out in shackles and then led him away. His wife was left alone, crying amid a pile of luggage.

Had Schmidt remained in Germany, it's unclear whether he or other supervisors could have been charged under German law, and it's inconceivable that the result would've been a seven-year sentence. One possible charge could have been false advertising, but that is narrow, not necessarily apt — it is aimed primarily at unfair competition — and carries a two-year maximum term, according to two German law professors who have studied corporate crimes: Michael Kubiciel, of the University of Augsburg, and Momsen of Berlin's Free University. (Momsen is associated with a law firm that represents a VW employee in the inquiry, but says he is not personally working on that case.)

The relevant German fraud statute, in turn, is generally designed to capture individuals who swindle others out of money. "Fraud requires proof of a concrete financial loss on the part of an individual consumer," writes Kubiciel in an email. "Proving that a manipulation of the diesel engine caused concrete financial damage is not easy, if possible."

“You need to be able to figure out,” says Momsen in an interview, “what is the damage in dollars or euros?” That’s challenging, he continues, because the cars were roadworthy and safe. It’s not clear whether German judges will consider the fact that a vehicle was polluting more than the consumer realized to constitute the sort of financial damage the law recognizes. As VW put it in its statement to ProPublica concerning its civil liability in Europe, “Customer satisfaction is our highest priority and the modification we have provided our customers in Europe entails no change to performance, fuel economy or other key vehicle attributes, as confirmed by our regulator.”

Indeed, scores of consumer lawsuits have been tried in Germany and Volkswagen appears to be winning most of them, according to newspaper accounts and interviews with three European plaintiffs lawyers. Even when judges have ruled that VW used an illegal defeat device, many have still concluded that consumers suffered no compensable injury.

The main remaining criminal statute in play is the one barring market manipulation. VW executives might appear to have been astoundingly tardy in notifying the market of the building crisis at their company. Yet there are hurdles here, too. Executives can point, for instance, to the Kirkland & Ellis report — predicting modest sanctions in the vicinity of $100 million — and argue that that didn’t sound like a “material” loss that needed to be disclosed.

Perhaps, despite the many daunting obstacles, German prosecutors will yet manage to obtain some convictions. It sounds as if Oliver Schmidt will be rooting for them. In a letter to Judge Cox before his sentencing, he described how he had pored over the government’s VW evidence “during my many sleepless nights in my prison cell.” As Schmidt put it, “I’ve learned that my superiors that claimed to me to have not been involved earlier than me at VW knew about this for many, many years. I must say that I feel misused by my own company.”

Additional reporting by Jesse Eisinger