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EUROPE

1. Mayors of 20 European Cities Attack Weak EU Diesel Pollution Limits

The mayors of 20 European cities including Paris, Madrid and Athens have attacked the European Union for allowing a loophole in diesel cars’ pollution limits, just months after the VW emissions scandal. MEPs in February failed to veto a proposal that watered down real world tests on limits for NOx pollution emitted by new diesel cars, a move which the mayors said was unfair and wrong, and stopped them from protecting citizens’ health.

In a letter published in Le Monde, the mayors write: “How can we protect the health of our fellow citizens when the European Union has rubber-stamped a permit to pollute, at the expense of public health? “What can we say to parents whose children are suffering from acute respiratory disorders, or to elderly people and to the most vulnerable? Should we tell them that their government has prioritized the health of the automotive industry over their own?”

The signatories include the mayors of Paris, Brussels, Madrid, Copenhagen, Oslo, Lisbon, Stockholm, Vienna, Warsaw, Athens, Amsterdam, but not Berlin, Rome and London.

The mayor of London, Boris Johnson, has argued he has acted on pollution but the city is still expected to be in breach of European NO2 limits until 2025 and an estimated 9,500 people die early each year because of the capital’s dirty air.

Matthew Pencharz, the deputy mayor of London, said that that the failure of European diesel standards to deliver promised NO2 savings and an increasing proportion of diesels on the roads were to blame. “That’s why the mayor believes that the UK outside the EU should regulate vehicles, including a real driving emissions (RDE) test far tighter than the unacceptably weak one currently being proposed by the EU.”

The European motoring trade body and European governments have backed the real world emissions test proposal, which will allow NOx emissions to exceed limits by more than double from 2017 and up to half from 2020.

“We believe that this decision is unfair and wrong,” the mayors said. “It is unacceptable to introduce emissions thresholds, only to allow them to be violated. It cannot be right to impose a duty upon public authorities to comply with air pollution standards, while at the same time giving the automotive industry the green light to infringe them.”

The mayors appealed to European governments to use all their means to ensure air pollution standards are applied consistently across industries.

2. EU Trials New Way To Measure Emissions But Will It Make A Difference?
Emissions testing takes place on a vehicle at 'Emissions Analytics' in west London. The company is an independent commercial test house using Portable Emissions Measurement Systems (PEMS) to measure real-world fuel economy and on-road emissions, London, Britain, 11 March.

An ungainly contraption that resembles a bicycle rack with tubing attached will become a common sight on cars around Europe over the coming months as a new way of measuring car pollution gains traction following the Volkswagen scandal.

The Portable Emission Measurement System (PEMS) aims to supplement laboratory tests -- the flaws of which were laid bare by the VW experience -- with more realistic testing on roads.

But Europeans shouldn't expect to be breathing much cleaner air in the near future, experts and analysts say, because all the testing regimens in the world won't solve the problem until the European Union introduces much tougher pollution limits and finds a foolproof way to enforce them.

VW's use of a banned "defeat device" has led to the scrutiny of a system that has allowed nitrogen oxide (NOx) emissions to reach up to seven times their European limits.

EU officials who spoke to reporters on condition of anonymity said that industry manipulation of the testing regime had been obvious for years. The European Commission failed to stop it, they said, because of the influence of the auto industry and because protecting a pillar of the economy was for many a higher priority than the environment.

The said it was a mistake to leave vehicle regulation primarily in the hands of the industry section of the European Commission, rather than the environment department.

Although regulators did not know of anything clearly illegal going on, they were aware loopholes were being exploited and chose to tune out the problem, the officials said.

A second official said: "Policy officers (on the lower levels) develop a desire to do something meaningful ... higher up, they don't want to rock the boat. The lower down the pecking order you are, the closer you are to the facts."

Commission spokeswoman Lucia Caudet said the Commission had worked for many years to improve regulation in consultation with all relevant parties, including the car industry. "The Commission always acts in the general European interest, not in the interests of any one group or stakeholder," she told the press in answer to written questions.
PEMS have been used on trucks for years following a previous defeat device scandal in 1998, which, like the Volkswagen case, was discovered in the United States. Early versions of the device, which cost around 150,000 euros ($166,335) each, were too heavy for cars, but they have since become less unwieldy and are going on trial pending their mandatory use as part of EU vehicle authorization from September 2017.

A VW spokesman said the company was already using the devices to test carbon dioxide (CO2) and NOx emissions in research and development.

Emissions Analytics CEO Nick Molden bought a PEMS in 2011, seeing a business opportunity serving people who wanted to know why their cars used much more fuel, and therefore produced more CO2, than manufacturers promised. His company, based in an industrial unit in Feltham on the western edge of London, attaches the device to cars, drives them around and collects the data, selling it on to interested individuals, businesses and even regulators. So far it has gathered data from 1,000 vehicles, Molden said.

Five major car makers subscribe to Emissions Analytics' database and the company set up a Los Angeles branch in 2013.

Molden said the PEMS is a powerful tool but questioned how effectively its use would be enforced given the long history of industry, together with member states, diluting Commission plans. Since he formed his company, Molden has been invited to sit on EU working groups to debate proposed legislation in Brussels, and the experience is instructive. "It's clear for all to see the power of the automotive lobby versus the number of specialists from the Commission side. German manufacturers send their top engineers," he said.

Only a month after the VW scandal was exposed, Germany and the car industry lobbied successfully for leeway to allow them to carry on polluting above official limits up to 2021 and beyond. They argued they needed the flexibility to protect the profitability of an industry that provides around 12 million jobs, directly and indirectly, and accounts for 4 percent of EU GDP, according to European Commission data.

Isolated EU officials have spoken out for the use of PEMS for years to tackle diesel fumes. In 2011, then-Environment Commissioner Janez Potocnik noted PEMS were already being used for trucks and said the Commission was working to ensure the "necessary technical developments" were completed by 2013 for cars.

But resistance to the system is inevitable, analysts say, as carmakers are wedded to testing in laboratories using dynamometers, which they say they provide a predictable, repeatable result. By contrast PEMS are affected by many variables, such as different altitudes and temperatures, known as "boundary conditions", a spokesman for the European Automobile Manufacturers' Association (ACEA) said. Ongoing debate to define these boundary conditions legally could amount to another watering down of standards, Molden said.

It is not clear how using PEMS would affect a system that has grown up in Europe whereby the government agencies that put their seal of approval on the cars -- so-called national type approvers -- work with manufacturers to put the cars through tests.
That system has tolerated practices such as the use of specially prepared cars, known as golden vehicles, which are primed to be as fuel efficient as possible. Air conditioning is turned off, for instance, and special fuel and tires are used.

The European Commission says PEMS will make it much harder to cheat. But although the Commission is redoubling efforts to tighten the regulations, it has stopped short of proposing a powerful independent regulator along the lines of the U.S. Environmental Protection Agency, the body that forced Volkswagen to admit its use of defeat devices.

3. Continuing Fallout in Europe from VW Scandal

Fuel Economy Concern Allegedly Delays VW Diesel Fix in Europe

Volkswagen is delaying the start of repairs for the 2.0-liter diesel Passat in Europe because the fix allegedly increases the sedan's fuel consumption, according to Automotive News Europe. The beleaguered German automaker asserts that a change in the technicians that are testing the repair is the reason for the postponement.

The Germany's Federal Motor Transport Authority originally allowed people from VW to do the testing, but it then replaced them with independent engineers. VW claims the switch pushed back the evaluations’ end by a week or two, according to Automotive News Europe.

In contrast, German media reports claim that the tests showed the fix caused increased fuel use for the Passat, but VW said the allegation was speculation. "We have to guarantee that noise and especially CO2 emissions are exactly the same as before the fix," a company spokesperson told Automotive News Europe.

VW had previously said that European vehicles with the 2.0-liter TDI, like the Passat, only required a software update. When it announced the diesel repairs, the German automaker said the goal was to meet emissions standards without adverse effects on fuel economy or performance.

Repairs haven't yet started for any VW Group diesel vehicles in the US. A judge gave the automaker until March 24 to outline an acceptable fix for the 2.0-liter engines, but the company missed that date. It now has until April 21 to figure something out. The head of enforcement at the California Air Resources Board believes that full compliance might not even be possible. CARB also continues to evaluate the proposed fix for the 3.0-liter V6 TDI.

Volkswagen Faces $3.7 Billion Lawsuit over Diesel Polluting Engine Cover-Up

Volkswagen is facing its biggest legal challenge in Germany costing 3.3 billion euros ($3.7 billion) right after lawsuits have been filed in the US. The issue is still about the company's cover-up of its polluting diesel engine.

278 institutional investors from around the world have already filed a case at the Braunschweig Regional Court. According to their lawyer, Andreas Tilp, VW has failed to publish information regarding the emission scandal in a timely manner. He added that the company consistently denied any settlement deals and also refused to waive the statute-of-limitation defense until this moment.

There are already 65 cases that are on hold in Braunschweig regarding the issue as well as several US lawsuits and criminal probes in other countries. Volkswagen is also now in talks with
the Justice Department as well as the Environmental Protection Agency regarding the penalties to pay in order to equip diesel cars with software designed to avoid emission test.

A case was also filed against the company for wrongful dismissal of its employees. Daniel Donovan, a former Electronic Discovery Manager in Volkswagen, has just filed the case alleging that his termination was due to his refusal to take part in a plan to delete files. (See story below.)

Tilp asked the court to open up the test-case proceedings and if granted, all the capital-market cases will be heard together in a special procedure in Braunschweig Higher Regional Court of Lower Saxony.

“We don't know the suit yet and can't comment further,” VW spokesman Eric Felber said.

Tilp has represented investors in many German cases over capital-market disclosure issues. His firm represents institutional investors suing Porsche SE for a combined 2.6 billion euros.

Among the plaintiffs in the new VW case are investors from Australia, Austria, Canada, Denmark, France, Italy, Japan, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, Taiwan, the U.K. and the U.S. These groups include 17 German investment management companies, as well as insurance companies and CalPERS, the California Public Employees’ Retirement System, one of the largest pension funds in the U.S., according to Tilp.

The lawsuit is being financed by Claims Funding Europe, DRRT, Grant & Eisenhofer and Kessler Topaz Meltzer & Check LLP. Another 20 institutional investors with damage claims of more than 1 billion euros are in talks with the firm about an additional suit, he said.

VW Seeks to Mend Rift with Workers as Emissions Probe Widens

Volkswagen AG’s leaders appealed to workers to back restructuring efforts, seeking to mend an internal rift as the carmaker faced a widening probe into the emissions-cheating scandal by German prosecutors.

Europe's biggest automaker is struggling to find a way out of the crisis that began last September when it admitted using software to fudge emissions tests. In front of more than 20,000 employees gathered at Volkswagen's main plant on March 8th in Wolfsburg, Germany, Chief Executive Officer Matthias Mueller, labor boss Bernd Osterloh and Herbert Diess, head of the VW brand, attempted to present a united front.

Osterloh, the powerful head of Volkswagen's works council who has previously rebuked Diess, said management and labor are in "absolute agreement" on the need to lift the company out of its current morass. He reserved his criticism mostly to Diess's style, saying, “Mr. Diess addresses many of the right strategic issues but needs to improve communication with staff.”

The need for Volkswagen to get its house in order was brought into focus as prosecutors in Braunschweig, Germany, said the number of suspects in its investigation has risen to 17 people from six. The widening probe underscores the lack of answers from Volkswagen over how the cheating on emissions tests was started and then kept quiet for years.

Days after Volkswagen revealed that senior managers missed warning signs, Osterloh sought to keep up the pressure calling for “relentless clarification” of the scandal. He also vowed to fight any cutbacks that would make workers foot the bill for the crisis.
The main dispute concerns a push led by Diess to lift margins at the VW brand. Mueller tried to play the role of conciliator between the head of Volkswagen's largest unit and the chief of its powerful works council. The CEO backed Diess's 12-point plan to boost efficiency at the brand, calling the transformation necessary and an opportunity, not a threat.

In January, Osterloh criticized the brand chief's goal of a 10 percent improvement in productivity as "unrealistic." There have been no signs that the two have come to terms, with Diess saying in an early-March interview with the Wolfsburger Allgemeine Zeitung that there won't be a "second chance" to restructure the brand.

While Diess's speech was closed to media, in remarks released by Volkswagen, he said: "It is our common task and responsibility to guide Volkswagen safely into the new era of mobility." He praised workers in Wolfsburg for the ramp-up of production of the revamped Tiguan sport utility vehicle, but also kept up the pressure to reform, adding, "If we do the right things now, Volkswagen can become the sparkling core brand of the group again in a few years' time."

Osterloh essentially backed that effort. The labor chief said he sees 2 billion euros ($2.2 billion) in potential savings at the brand, slightly more than he had predicted late last year. He and other union leaders have called for cuts to focus on narrowing the broad palette of vehicles and using more common components.

VW Faces Full Fraud Probe as Paris Prosecutors Step Up Case

Paris prosecutors turned the heat up on Volkswagen AG, opening a judicial probe for "aggravated fraud." The investigation follows from a preliminary inquiry last year into Volkswagen for deceit and putting people's health at risk, spokeswoman Agnes Thibault-Lecuivre said March 8. The probe began after a regional transport official filed a complaint. Aggravated fraud can fetch up to 7 years in prison and a 750,000-euro ($830,000) fine, Thibault-Lecuivre said.

New European Interest in Electric Cars Following VW Scandal

With the future of diesel in question in the wake of Volkswagen AG's emissions-cheating scandal, electric vehicles that have long struggled to find buyers in Europe are finally getting endorsed by major carmakers.

At the recent Geneva International Motor Show, automakers from mass-market PSA Peugeot Citroen to upscale Daimler AG's Mercedes-Benz promised to challenge Tesla Motors Inc. with electric cars that have longer ranges and more affordable prices. After largely sideling the technology in recent years amid sluggish demand, the revived interest in battery-powered cars is necessary for automakers to meet tighter European Union regulations for carbon-dioxide emissions starting in 2020.

The Volkswagen scandal gave other automakers a “push toward electric cars,” Karl-Thomas Neumann, head of General Motors Co.'s Opel unit, said in a March 3 press interview. The German-based brand plans to roll out the Ampera-e next year. It is Opel's first electric-powered car since the 2011 Ampera plug-in hybrid, which struggled to lure buyers because of its high price.

Diesel engines are typically 25 percent more efficient than gasoline versions, making them critical to lowering carbon dioxide emissions. But Volkswagen's revelation in September that it cheated
on diesel lab tests for years increases scrutiny of the technology and threatens to blow a hole in plans to meet regulatory requirements.

That makes once-eschewed battery cars unavoidable for the manufacturers, even if consumers aren’t biting yet.

“You see a very nice trend about electric vehicles, so we are developing our own technology and we are happy with that,” said Peugeot Chief Executive Officer Carlos Tavares. The French company, which presented the Citroen E-Mehari electric off-road concept in Geneva, has been largely dependent on diesel technology. Its first electric cars—the Peugeot iOn and Citroen C-Zero—were rebadged versions of Mitsubishi Motors Corp.’s i-MiEV.

Volkswagen, meanwhile, has made electric vehicles a linchpin of its plan for recovering from the crisis, accelerating a push to add 20 additional plug-in hybrid and battery-powered cars to its lineup by 2020. That includes the first battery-powered vehicle for the Porsche sports-car brand as well as an electric Audi crossover. And it is promising new leaps in technology, including ranges of more than 500 kilometers (310 miles) by the end of the decade. “Charging will only take as long as a coffee break,” instead of hours, Volkswagen CEO Matthias Mueller said in Geneva. “And in the long term, an electric car will cost less than a car with an internal combustion engine.”

Such technology advances will help electric cars eventually. But in the meantime, demand is tepid, with the clean-running vehicles accounting for just 0.68 percent of sales in Western Europe, according to Automotive Industry Data Ltd. Much of that demand comes from Norway, where electric cars enjoy generous perks such as tax exemptions and free charging. In Germany, where there are limited benefits, just over 30,000 have been sold to date. Cheap oil prices provide little incentive for consumers to take the leap.

“The market for electric cars in Europe has been extremely disappointing,” said Peter Schmidt, chief editor of Automotive Industry Data. “Five years ago, carmakers were really optimistic, but at the moment, in my view they will be lucky if the market share reaches 1 percent by 2020.”

Automakers are hoping politicians come to the rescue. BMW AG CEO Harald Krueger was among industry leaders at the show lobbying for state help, including sales incentives and assistance in adding public charging stations. “We need government support to boost sales,” said the executive, who is leading talks with the German government. The Munich-based carmaker hasn’t introduced a fully electric vehicle since the i3 city car in 2013.

But not all in the auto industry are rushing to roll out their own versions of cars like the Tesla Model X SUV, which made its European debut in Geneva. Sergio Marchionne, CEO of Fiat Chrysler Automobiles NV, said he would rather make profit than follow Tesla. “I can’t make money building a car like Tesla,” Marchionne said. “So for the time being I am abstaining.”

‘Dieselgate’ Inquiry to Summon Former EU Officials

A European Parliament inquiry committee set up to investigate failings in the regulation and monitoring of vehicle exhaust emissions will call as witnesses former European Union environment and industry commissioners, lawmakers involved in the inquiry said on April 27th.

Kathleen Van Brempt, a Belgian center-left member of the European Parliament who has been appointed chairwoman of the inquiry, said former top officials will be asked to provide evidence concerning “why certain laws were implemented or not implemented.”
The inquiry committee was established in March in the wake of the Volkswagen “Dieselgate” scandal with a mandate to investigate whether EU and member-state authorities failed to properly regulate test procedures for exhaust pollutants and to effectively sanction breaches by manufacturers of pollutant emission limits.

Gerben-Jan Gerbrandy, a Dutch liberal lawmaker, who is one of the inquiry committee’s rapporteurs, said former EU environment commissioners Stavros Dimas (2004–2009) and Janez Potocnik (2009–2014) and former industry commissioners Günter Verheugen (2004–2010) and Antonio Tajani (2010–2014) have been asked to appear. Current environment commissioner Karmenu Vella, and industry commissioner Elzbieta Bienkowska also will be called before the inquiry, according to Gerbrandy.

Potocnik and Tajani have agreed to appear before the inquiry, Dimas has yet to accept the invitation, and “we’re still in the middle of the negotiation” with Verheugen, Van Brempt said.

The European Commission, the EU's executive arm in which the commissioners are the top officials, is responsible for proposing EU legislation and then monitoring and enforcing its implementation once the European Parliament and EU member states have approved the laws.

Gerbrandy said the purpose of summoning the former and current commissioners is to “try to figure out why they created European legislation that did not work in practice.”

The revelations in the U.S. that VW was using a software defeat device to cheat tests for emissions of nitrogen oxides (NOx) highlighted the broader issue of diesel cars on EU roads commonly producing far higher nitrogen oxides levels than they achieve in tests and that are permitted by EU legislation. The latest generation of EU standards for emissions of nitrogen oxides and other exhaust pollutants, including carbon monoxide and particulate matter, is contained in a 2007 regulation ((EC) No 715/2007) that also prohibits use of defeat devices.

Gerbrandy added that the inquiry was “certainly looking into” the application of sanctions by EU member states to automakers that use defeat devices. The 2007 regulation required national authorities to set “effective, proportionate and dissuasive” penalties for use of defeat devices. The inquiry could not say if automakers should compensate consumers who bought cars that are more polluting than claimed, but if legal penalties had not been applied, the inquiry would ask why not, Gerbrandy added.

**VW Presentation in ’06 Showed How to Foil Emissions Tests**

A PowerPoint presentation was prepared by a top technology executive at Volkswagen in 2006, laying out in detail how the automaker could cheat on emissions tests in the United States. The presentation has been discovered as part of the continuing investigations into Volkswagen, according to two people who have seen the document. It provides the most direct link yet to the genesis of the deception at Volkswagen.

It is not known how widely the presentation was distributed at Volkswagen. But its existence, and the proposal it made to install the software, highlight a series of flawed decisions at the embattled carmaker surrounding the emissions problem. Those decisions exposed the company to billions of dollars in fines as well as criminal investigations. Last Friday, Volkswagen reported a record $6.2 billion loss, after setting aside $18 billion to cover the costs of fines, legal claims and recalls.
As a first step in a broader settlement under negotiation, Volkswagen agreed to fix or buy back 500,000 diesel vehicles in the United States, beginning with model year 2009. (See story below.)

At various junctures over the last decade, executives at Volkswagen ignored or underplayed warning signs.

As the PowerPoint underscored, people inside Volkswagen were aware that its diesel engines were polluting significantly more than allowed. Yet company executives repeatedly rejected proposals to improve the emissions equipment, according to two Volkswagen employees present at meetings where the proposals were discussed.

Even when regulators started asking questions in 2014, Volkswagen continued to install the cheating software for more than a year. And the company further compounded its problems by underestimating the potential penalties and the risks to its reputation, according to court documents obtained by The New York Times.

What is now clear is that the current crisis at Volkswagen traces back to the PowerPoint presentation a decade ago. Volkswagen engineers at the company’s research and development complex in Wolfsburg realized that the emissions equipment in their newest diesel engine would wear out too quickly if it were calibrated to meet American pollution standards. The emissions rules in the United States are more stringent than those in Europe.

A technology expert at Volkswagen offered a solution in the PowerPoint presentation. Just a few pages long, the 2006 presentation included a graph that explained the process for testing the amount of pollution spewing from a car. In a laboratory, regulators would try to replicate a variety of conditions on the road. The pattern of those tests, the presentation said, was entirely predictable. And a piece of code embedded in the software that controlled the engine could recognize that pattern, activating equipment to reduce emissions just for testing purposes.

Elements of the presentation were reported earlier by Süddeutsche Zeitung newspaper and several German broadcasters. Under German privacy law, the executive cannot be named.

The software evolved over the years. It was later upgraded to detect other telltale signs of a regulatory test, like a steering wheel that was not moving, according to Felix Domke, a computer expert and self-described hacker who has analyzed the software. During regulators’ tests, the engine software would turn up the pollution controls. When it was on the road, equipment designed to neutralize harmful nitrogen oxides would turned down, resulting in emissions that were up to 40 times the legal limit.

Volkswagen had a growing awareness of that emissions discrepancy in recent years. In a court filing, the company lawyers, as part of a defense in a shareholder lawsuit, suggest that the discrepancy was common knowledge within the industry. “The vehicles of all manufacturers exceed various emissions limits in normal street use,” Volkswagen lawyers said in a court filing. They further argued that the differences between road emissions and lab emissions were tolerated by regulators.

The management board led by Martin Winterkorn, the chief executive who resigned in September after the admission of cheating, repeatedly rebuffed lower-ranking employees who submitted technical proposals for upgrading the emissions controls, according to the two people who attended meetings where the proposals were discussed. The management board rejected the proposals because of cost, the people said.
More effective emissions equipment would have made Volkswagen vehicles hundreds of dollars more expensive, without providing a benefit that customers could perceive. In the United States, even a modestly higher sticker price would have made it more difficult for Volkswagen to compete with rivals like Toyota and Honda.

After American officials began asking questions about Volkswagen emissions, company executives, including Mr. Winterkorn, thought they could deal with the problem quietly at a relatively low cost, according to the court documents that were obtained by The Times.

Court documents filed by Volkswagen indicate that the technicians thought the chances of being caught cheating were slim when the deception began in 2006. While technology to test cars under road conditions was available, it was not widely used by regulators. “The seemingly small danger of discovery may have been a factor in tempting the VW engineers to make the impermissible software alteration,” Volkswagen lawyers said in the court documents.

In recent years, the chances of discovery increased. It became easier to buy emissions testing equipment from suppliers, and numerous environmental groups or independent laboratories did so to show that many carmakers were understating diesel emissions.

Signs of irregularities in Volkswagen cars were discovered in 2014 by a nonprofit group, the International Council on Clean Transportation, based on testing performed at West Virginia University. Still, Volkswagen continued to install defeat devices in its cars, including some Audi and Porsche models, until last year.

On Sept. 3, 2015, Volkswagen finally admitted to American regulators that diesel vehicles had a defeat device. Still, executives were shocked at the response. Stuart Johnson, a Volkswagen executive responsible for relations with American regulators, said in a memo in January that the Environmental Protection Agency gave him half an hour’s notice before announcing on Sept. 18 that the carmaker had admitted installing defeat devices in diesels.

Although more than a year had passed since the E.P.A. first raised suspicions about Volkswagen diesels, Mr. Johnson said in a Jan. 19 internal memo, which was obtained by The Times, that he believed that Volkswagen still had four months “where we could discuss the issue privately.” “I was very disappointed by this turn of events,” Mr. Johnson wrote.

The reports suggest VW was concerned that meeting US emissions standards would wear out the emissions gear VW used, and that more sophisticated emissions controls would make VW diesel cars even costlier than competing Hondas and Toyotas.

News reports noted that US pollution laws were tougher than in Europe and it affected diesel-engine cars most heavily, particularly the limit of 0.04 grams of nitrogen oxides per kilometer. The presentation allegedly said the repetitive nature of the tests could be recognized by the car, making it possible to disable the pollution controls when the car wasn’t being tested. Over time, VW recognized more telltale signs, such as that the steering wasn’t constantly being moved (which it would when driven), and upgraded the onboard software to reflect that as one more sign of an emissions test.

What Is Behind The Diesel Cars Emissions Scandal?
The air pollution scandal that hit front pages around the world last year with VW’s admission it had been cheating emissions tests has gotten much bigger. A UK government-sponsored trial launched in the wake of the VW revelations has found that every single one of the diesel-fueled vehicles tested had higher emissions of nitrogen oxide pollutants than permitted under EU laws. For some models emissions were 12 times the legal limit. None of the 56 vehicles tested in Germany and 37 in the UK was found to have a defeat device aimed at artificially lowering its emissions under test conditions, such as those used by VW. But all were found to exceed the EU-set standards on air quality and pollution when driven in real-world situations. Crucially, the higher emissions were found to be the result of engine management systems that are routinely used by manufacturers to improve the performance of their vehicles. One by-product is more polluting emissions.

Environmentalists say the result is not unexpected. “This confirms what experts have been saying for years: deadly emissions are far higher in the real world than in controlled tests in the lab,” said Oliver Hayes of Friends of the Earth. “Governments say they are championing ‘real driving emissions’ but this is a smokescreen. These standards are far weaker than those that currently exist.”

This points to the inadequacy of current testing regimes, but it also reveals a much more alarming truth: that manufacturers are tuning their vehicles’ engines in a way that hurts everyone. Engine management systems have become standard across the industry, and these new tests make it clear that they are there for one purpose: to improve the performance of the car, even if that comes at the expense of those breathing in the air from their exhausts.

Diesel engines produce much higher levels of air pollutants than petrol-driven engines, although they produce less carbon dioxide. This has led EU member states to encourage drivers into diesel cars, reducing the impact of driving on climate change but vastly increasing the problem of air pollution.

The UK is one of the few EU countries that tax diesel at the same rate as petrol, as most countries skew their taxation levels to favor diesel (although tax parity still favors diesels because they do more miles per gallon).

Volkswagen to Cut Managers' Bonuses Following Diesel Scandal

Volkswagen said Wednesday that its top managers’ bonuses will be cut significantly, citing the need to send a "signal" on executives' pay following the automaker's diesel emissions scandal. The company, which has yet to release 2015 earnings figures, said in a statement that "different models which would constitute a reasonable and fair solution for all parties involved" are being discussed. “As a consequence, this would lead to a significant reduction of the variable remuneration,” Volkswagen said.

The cut to the 2015 bonuses would apply to the management board, a group of executives that helps run the company day to day and includes the CEO.

The supervisory board, which is the German equivalent of a board of directors, would not be affected, except for chairman Hans Dieter Poetsch — the company's chief financial officer until he switched jobs late last year. Volkswagen said this was "at his own request."

Wednesday's statement followed German media reports in recent days of divisions at the company over the extent to which managers should take a hit on their bonuses.
Volkswagen said Wednesday the "supervisory board and management board jointly agreed that — given the current situation of the company — a signal should also be sent with respect to the topic of the management board's remuneration."

Lower Saxony state governor Stephan Weil, a member of Volkswagen's supervisory board because his state is a major shareholder, told the regional legislature in Hannover that "the expectations of the public" have to be taken into account in discussing bonuses.

4. Volvo Boss Says Hybrid Cars Will Compete On Cost with Diesel

Tighter emissions rules in Europe will push up the price of diesel-engined cars to the point where plug-in hybrids will become an attractive alternative, Volvo Chief Executive Hakan Samuelsson said recently.

The average carbon dioxide emissions limit for European carmakers' fleets will need to fall from 130 grams per kilometer to 95 grams in 2021. "The diesel engine will be more expensive and we need to fulfill the 95 grams. Then the twin engine is a very attractive alternative," Samuelsson told reporters at the Geneva Motor Show.

Diesel cars account for over 50 percent of all new registrations in Europe, making it by far the world's biggest diesel market. Volvo, owned by China's Geely, sells 90 percent of its XC 90 off roaders in Europe with diesel engines.

The scandal over Volkswagen's cheating means manufacturers are facing intense scrutiny over the pollutants from their cars. "It will take more equipment and more money to bring down the emissions levels now, and Volvo will introduce cleaner diesels much faster as a result of the Volkswagen issue," Samuelsson said.

Goldman Sachs believes a regulatory crackdown could add 300 euros ($325) per engine to diesel costs that are already some 1,300 euros above their petrol equivalents, as carmakers race to bring real NOx emissions closer to their much lower test-bench scores.

Volvo does not plan to offer a diesel-hybrid version of its XC 90 off roader, preferring a petrol hybrid version instead.

Separately, Samuelsson said Volvo was open to the idea of relying on a third-party technology or software company to develop an operating system for driverless cars. Right now, it is building this expertise in-house, since many of the reflexes a vehicle has to learn for semi-autonomous driving are related to accident avoidance and safety. But this could change if the right partner emerges.

"We would look in to that. We always have that approach to suppliers. We have not been developing our own transmissions, for example," Samuelsson said, adding that Volvo has talked to a lot of potential partners and "will not rule out anything". It has for example started working with Nvidia, a chip maker with expertise in computer gaming. "They have never been suppliers to the auto industry. But advanced graphics processors is exactly what we need to calculate what the road is looking like 200 meters ahead," he said.

The Swedish carmaker is more than half-way through an 11 billion euro factory-building and product development plan. It may tap bond markets to raise more funding, Samuelsson said, declining to give further details.
He predicted that 10 percent of Volvos would be electric by 2020, saying the cost and energy density of batteries was nearing a point where such cars can go 500 km (310 miles) without needing to be recharged.

5. U.K. Government Sued by ClientEarth Over Air Quality Plan

A London-based environmental law organization filed a suit to force the U.K. government to make changes to improve the country's air quality, less than a year after winning a Supreme Court order that forced ministers to revise existing plans. ClientEarth said a March 18 statement that it filed a lawsuit with the High Court and will serve U.K. government lawyers with the claim. Scottish and Welsh ministers, London Mayor Boris Johnson and the Department for Transport will be added to the case “as interested parties,” according to the statement. The U.K. is “committed” to improving air quality, the environment department said in a statement.

The government last December released new plans that said London would comply with European Union regulations on air pollution by 2025, an improvement on previous projections that it wouldn't do so until at least 2030. But that is 15 years later than the mandated by the EU guidelines. ClientEarth says air pollution causes “tens of thousands” of early deaths each year. “The government has repeatedly failed to tackle this problem, despite a ruling by the Supreme Court,” said Alan Andrews, a lawyer with ClientEarth. “As the government can't be trusted to deal with toxic air pollution, we are asking the court to intervene and make sure it is taking action.”

The U.K.'s situation was exposed in the second week of January, when one London street breached EU rules on annual pollution levels just eight days into the year. A February report by the Royal College of Physicians found that about 40,000 people die a year in the U.K. because of exposure to outdoor air pollution.

“Our plans clearly set out how we will improve the U.K.'s air quality through a new program of ‘Clean Air Zones,' which alongside national action and continued investment in clean technologies will create cleaner, healthier air for all,” the government's Department for Environment, Food and Rural Affairs said in an e-mailed statement.

Cities across the country, including Manchester, Liverpool and Glasgow are also in breach of the EU rules.

6. Huge Cruise Ships Will Worsen London Air Pollution, Campaigners Warn
Toxic fumes from large cruise liners powered by giant diesel engines will worsen London’s air pollution and could prevent the city from meeting its EU legal limits on deadly nitrogen oxide emissions, says resident groups opposing a new terminal.

Plans for a wharf in the Thames that would be able to handle 240 meter-long cruise liners carrying up to 1,800 passengers and 600 crew were approved by Greenwich council last July but are being challenged in the high court by residents.

Developers say that 55 liners a year, each weighing around 48,000 tons, would be expected to spend up to three days “hoteling” at Greenwich. Using their auxiliary diesel engines while moored, they would burn around 700 liters of diesel an hour for six months of the year in a borough considered a hot spot for air pollution.

Consultants have calculated that each ship would emit the equivalent of 688 heavy lorries permanently running their engines at Enderby Wharf in Greenwich.

But larger ships, potentially the size of the 12-deck high Crystal Symphony, may also be allowed to moor at Enderby and would emit as many diesel fumes as 2,000 lorries a day, say objectors.

“On top of the ships the port will need tugs, hundreds of taxis and service vehicles all belching diesel close to high-density housing in an already heavily polluted area. I am aghast. Greenwich is already breaching EU limits. The council must know that 10,000 people a year die from diesel fumes a year in London,” said Ralph Hardwick, a campaigner from the Isle of Dogs.

“The alternative is to supply clean onshore power to the cruise vessels rather than running filthy diesel engines. Yet the current planning permission does not require a cleaner operation. Nor has a health feasibility study been undertaken,” said a spokesman for East Greenwich Residents Association.

A spokeswoman for London City cruise port declined to comment pending the legal challenge.

The residents will argue in court that the council should have required the development to provide an onshore power supply for the ships. If so, the liners could turn their engines off while berthed. Instead, it accepted the developers’ argument that it was not “commercially viable”.

The legal challenge follows law firm ClientEarth taking the UK government to court for a second time over what it says are its repeated failures to tackle illegal levels of air pollution in London and other UK cities. Last year the Supreme Court forced the government to rethink its plans to meet EU limits.
Concern about air pollution from cruise ships is growing as a new generation of mega-liners is commissioned and cruise holidays become more popular. The largest liners are now effectively floating cities, able to take 8,000 passengers and crew. Powered by some of the largest diesel engines in the world, they burn hundreds of tons of fuel a day.

“Air pollution emissions from ships are continuously growing, while land-based emissions are gradually coming down. If things are left as they are, by 2020 shipping will be the biggest single emitter of air pollution in Europe, even surpassing the emissions from all land-based sources together,” said a spokesman with Brussels-based Transport & Environment group.

Air pollution from international shipping accounts for around 50,000 premature deaths per year in Europe, at an annual cost to society of more than €58bn, according to studies.

In Southampton, one of nine UK towns and cities cited by the World Health Organization as breaching air quality guidelines, up to five large liners a day can be berthed in the docks at the same time, all running engines 24/7, said Chris Hines, vice-chair of the Southampton Western Docks Consultation Forum (WDCF).

Southampton is one of the world’s busiest ports for starting and ending sea cruises. “Pollution from the ships is leading to asthma and other chest diseases. The docks are the most polluted areas of Southampton. The pollution is getting worse. We are now getting more, bigger liners, but also very large bulk cargo ships,” said Hines.

Under EU law, ships must switch to their auxiliary engines and burn low-sulfur fuel within two hours of arriving in port until two hours before they leave. However, there are no regulations on how much NOx and particulate emissions they can emit. Low-sulfur fuel has greatly reduced SO2, or “acid rain” pollution but not other toxins like nitrogen oxides, benzene, toluene and formaldehyde which are emitted in diesel fuel and can have serious health impacts.

According to the Southampton city council scrutiny committee, admissions to hospital from lung, chest and heart diseases are most common from polluted areas like the docks.

According to evidence given to the committee by WDCF, the cumulative effect of up to 20 or more ships in port at the same time, including many large cruise liners with large diesel engines, was a major concern to the public. Incidences of lung diseases in the city and hospital admissions for respiratory diseases linked to air pollution were much higher than the average in England, it was said.

Emissions can be reduced by 95% if ships and ports are adapted to allow ships a shore side electricity supply but this is resisted by the industry on grounds of practicality. According to Royal Caribbean, one of the largest cruise line companies in the world, only six out of the 490 ports that their ships visit have shore power. In evidence to the scrutiny committee, Royal Caribbean said: “If Southampton were to explore installing shore power, it would be important to note that ships may not come equipped to use it. The European Union has stated that emissions reductions of only 1-3% of emissions are seen during a seven-night cruise during which a ship could use shore power at every port on the itinerary.”

7. Truck Operators Should Pay More External Costs - Study

The European Commission should shift responsibility for the environmental costs of trucking away from the public and onto operators when it reviews EU rules for road tolls next year, green
transport group T&E has said based on a CE Delft report published for T&E. According to the report, the total cost of trucking in the EU was around €143 billion annually in 2013. Much of this cost (60%) originates from ‘external’ negative impacts including CO2 emissions, air pollution, noise and congestion. But only 30% of it was covered through taxes and tolls paid by the operators, the report found.

T&E have called for this imbalance to be addressed when the Commission reviews the Eurovignette Directive, which governs road charging, in 2017.

The largest cost in 2013 was maintaining road infrastructure, at €57bn, while the costs of mitigating the effects of climate change and air pollution were €17bn and €15bn respectively.

Increasing the amount that truck operators pay for their external costs would incentivize the industry to lower CO2 and pollutant emissions, T&E said in an accompanying policy paper. The current situation is out of step with EU’s ‘polluter pays principle’, it added.

Road tolls should be set according to the CO2 emissions of trucks, whereby higher emitters pay more, T&E argued, adding that this would incentivize more fuel efficiency.

There is already additional charging for air pollutants including NOx through the Eurovignette directive, but the differentiation between EURO V and EURO VI truck classes should be reworked to increase the cost of operating the much higher polluting EURO V engines, T&E said.

“The upcoming review of the Eurovignette directive is an opportunity for tolls to become a better tool to account for these external costs,” T&E said.

8. Ship Fuel Law Non-Compliance ‘Low’ In 2015

Forty-three incidents of ships using non-compliant fuel were detected in EU sulfur emission control areas (SECAs) in 2015, the first year for which new stringent pollution control standards were implemented.

In total, 315 cases of non-compliance with the Sulfur Directive were reported to the European Maritime Safety Agency’s (EMSA) inspection system in 2015 out of 6,800 ship inspections recorded, indicating a non-compliance rate of around 5%. But only a “low number” - 52 cases - related to non-compliant fuel, of which nine were outside the SECAs, said a spokeswoman for the agency, which is responsible for coordinating implementation and enforcement of the directive by member states.

As of 1 January 2015, the sulfur content of fuel used in SECAs must be limited to 0.1%. As of 18 June 2014, a limit of 3.5% applies in all EU territorial seas and a limit of 1.5% applies for passenger ships.

The SECAs are the Baltic Sea, the North Sea and the English Channel. Ahead of the implementation of the 0.1% limit, some in the shipping sector had called for more time to comply on the basis that low-sulfur fuel remained expensive and a legal grey area surrounding the use of ‘scrubber’ emissions abatement technology had not been resolved.

Under the directive member states must also require correct completion of ships’ logbooks, including fuel-changeover operations.
Inspections are conducted under non-binding guidance finalized by EMSA in May 2015 which is intended to harmonize member states’ approach to ascertaining compliance and applying control procedures.

The SECA rules were adopted at the International Maritime Organization in 2008 under the MARPOL Convention. Under both MARPOL and the Sulfur Directive the general sulfur limit of 3.5% will fall to 0.5% on 1 January 2020. However, the MARPOL deadline could be pushed back based on the outcome of a review on fuel availability, which is due to be completed in the next two years.

9. Air Pollution and Climate Change Top French Environmental Concerns

The French General Commission on Sustainable Development (CGDD) has published its annual study on France’s environmental concerns. Air quality has become a more prominent issue than ever before. EurActiv’s partner Journal de l’Environnement reports.

French citizens ranked air quality as their second most pressing environmental concern in 2015. Never before has the issue been so prominent in the annual CGDD report on the environmental opinions and practices of the French population.

One of the most plausible explanations for this is change of attitude is the awareness raised by the implementation of road space rationing in Paris (on 17 March 2014, the again on 23 March 2015), following spikes in atmospheric pollution.

Climate change held on to the top spot, bolstered by the international climate conference (COP 21), held in Paris from 30 November to 12 December last year.

Natural disasters have also become a major cause for concern (chosen by 18% of respondents) since the flooding on the Côte d’Azur in October 2015, ahead of the pollution of water, rivers and lakes (10%).

The increase in household waste, the erosion of biodiversity and the degradation of marine environments have visibly dropped off the radar for many citizens. And noise pollution is almost entirely forgotten.

While most of the people questioned were able to cite a number of “environmental problems”, one third said they were not directly confronted, or concerned, by any of these issues. For individuals, it is the challenges of their own environment, like a lack of public transport or excessive noise, which push them to act.
But can their actions have any effect? "Almost half of French citizens still believe that it should be up to the public authorities to protect the environment," the CGDD wrote. And businesses are also increasingly cited as "having a leading role to play for the environment".

In 2012, the French public still believed households and businesses shared an equal responsibility for action on environmental pollution, but in 2015, a considerable gap has emerged. Today, only 20% of French citizens believe households should make environmental action “a priority”.

61% of respondents use a car or other motor vehicle to get to work or go shopping. Two thirds of these do not believe they have a viable alternative, and the number of those who think they will one day be able to do without a motor vehicle has risen very little in the last five years.

Price seems to have little dissuasive influence when it comes to motor vehicles: much more effective in motivating a change in travel habits are factors like the availability of public transport and the quality of cycle routes.

Cycling is still a very marginal activity, with only 1% of French citizens traveling to work or doing their shopping by bike.

10. Germany to Tackle Dirty Diesels by Empowering City Bans

German towns and cities plagued by car and truck pollution will soon get the legal tools they need to ban older diesel vehicles from streets where emissions are highest. Chancellor Angela Merkel's government will remove the legal uncertainty that has made town mayors and councils hesitate to ban older diesels from their streets, said Deputy Environment Minister Jochen Flasbarth, adding that the ordinance will be enacted this year. Limits on nitrogen oxide, or NOx, emissions set by the European Union are regularly breached on German roads.

“This step is necessary as a stop gap until electric cars have a significant foothold in our towns, and diesel emissions really are what carmakers say they are: cleaner,” Flasbarth said in Berlin.

Once enacted, bans can be implemented on diesel vehicles with emissions that don't meet “EU-Norm 6,” said Flasbarth, who sought agreement on the move in talks in the capital with state environment officials. The officials "unanimously supported" the need for action, he said. EU-Norm 6 sets an NOx emission limit of 80 milligrams per kilometer, and has been mandatory for all new diesel vehicles road-registered since 2015.

Calls to get tough on the dirtiest diesel vehicles have become louder and more persistent since Volkswagen AG was caught manipulating its pollution readings from its cars. While all new diesel cars need to fulfill the strictest NOx limits, that leaves millions of car owners facing bans within cities—and a new question mark on the future of diesel technology that German companies dominate.

Almost half of the 3 million new vehicles sold each year in Germany are diesels, according to the VDA industry association. In the U.S., VW, BMW AG, Audi AG and Daimler AG had 92 percent of the market for new diesel cars, according the International Council on Clean Transportation.

The fine particles emitted by diesel exhausts as well as NOx may cause 10,000 deaths in Germany each year, the European Environment Agency said.
Some 74 percent of BMW's sales are diesels, and for Audi the figure is 67 percent. Just a third of Germany's existing diesel cars fleet in 2015 fulfilled the EU-Norm 6 standard. Half the 14 million diesel cars in Germany will be replaced by new, cleaner diesels in the next five years, according to VDA estimates.

Town and city councils will not be compelled to enforce bans and won't be permitted to place blanket restrictions on inner-city limits for vehicles not fulfilling the latest NOx standards, said Flasbarth. “Cars that do will get a blue sticker, that much is certain,” he said.

Limits on nitrogen oxide, or NOx, emissions set by the European Union are regularly breached on German roads.

While all new diesel cars have to fulfill the strictest nitrogen oxide limits, that leaves millions of car owner facing bans within cities—and a new question mark on the future of diesel technology that German companies dominate.

11. Reported CO2 Emissions from New Cars Continue To Fall Except in the Real World

Emissions from official testing reported by national authorities show that new cars sold in the European Union (EU) are increasingly more fuel-efficient. Last year, new passenger cars emitted on average 119.6 grams (g) of carbon dioxide (CO2) per kilometer, 8% below the official EU target set for 2015, according to provisional data published by the European Environment Agency (EEA).

In 2015, the average CO2 emissions of a new car sold was 3% lower than in the previous year, according to provisional data. Since 2010, when monitoring started under current legislation, official emissions have decreased by more than 20 g CO2/km. The EU already met its 2015 target of 130 g CO2/km in 2013, two years ahead of schedule. A second official target of 95 g CO2/km has to be met by 2021.

Key findings:

- New cars sold in 2015 emitted on average 119.6 g CO2/km, more than 10 g CO2/km below the 2015 target, according to reported emissions.
- Sales of new passenger cars in the EU increased in 2015 compared to the previous year. A total of 13.7 million new cars were registered, representing an increase of 9% compared to 2014. Registrations increased in all EU Member States except Luxembourg and Slovenia.
- The average mass of new cars sold in the EU (1 381 kg) remained broadly the same as in 2014. The mass of a vehicle is a key factor affecting emissions. On average, the heaviest cars were sold in Sweden and Luxembourg (1 530 kg and 1 496 kg respectively) whereas Maltese, Danish and Greek buyers preferred lighter cars (1 199, 1 233 and 1 260
kg respectively). The average diesel vehicle sold was 311 kg heavier than the average petrol vehicle.

- The least fuel-efficient cars were bought in Estonia and Latvia (137 g CO2/km) followed by Bulgaria (130 g CO2/km). For all remaining Member States, the average emission levels were below 130 g CO2/km. As seen in 2014, the Netherlands (101.2 g CO2/km) was the country that registered the most efficient new cars. Portugal and Denmark followed with new cars emitting on average 106 g CO2/km.

- Diesel cars remain the most sold vehicles in the EU, constituting 52% of sales. As in past years, the countries with the highest proportions of diesel sales include Ireland and Luxembourg (71%), Portugal (69%), and Croatia, Greece and Spain (63%).

- The average fuel efficiency of petrol cars (122.6 g CO2/km) has been catching up with the fuel-efficiency of diesel cars (119.2 g CO2/km) in recent years.

- Sales of plug-in hybrids and battery-electric vehicles continued to increase. The relative share of plug-in hybrids and battery-electric vehicle sales was highest in the Netherlands and Denmark, reaching 12% and 8% respectively of national car sales in 2015. However, sales of such vehicles still remain a small fraction of total sales, accounting for just 1.3% of all new EU cars sold.

- Around 57 000 pure battery-electric vehicles were registered in 2015, a 50% increase compared to 2014. The largest number of registrations were recorded in France (more than 17 650 vehicles), Germany (more than 12 350 vehicles) and the UK (more than 9 900 vehicles).

Member States report new vehicles’ CO2 emission levels, measured under standardized laboratory conditions, following the requirements of the New European Driving Cycle (NEDC) test procedure. This procedure is designed to allow a comparison of emissions for different manufacturers. However, there is now wide recognition that the NEDC test procedure, dating from the 1970s, is outdated and does not necessarily represent real-world driving conditions and
emissions due inter alia to a number of flexibilities that allow vehicle manufacturers to optimize the conditions under which their vehicles are tested. The EEA has recently published a non-technical guide explaining the key reasons for the differences observed between official and real world driving emissions.

Recognizing these shortcomings, in January 2016 the European Commission proposed a number of changes to the current vehicle type-approval framework. A new procedure known as the ‘Worldwide harmonized Light vehicles Test Procedure’ (WLTP) will also be introduced in the future so that laboratory results better represent actual vehicle performance on the road. However, the date of its introduction remains to be decided.

Although hybrid and electric vehicles account for just 1.3 percent of all new EU car sales, EEA data shows, the number of pure battery-electric vehicles registered last year increased by 50 percent to 57,000, compared to a year earlier.

Altering CO2 emissions in cars can be achieved via a variety of engineering techniques to reduce fuel consumption such as switching off air conditioning, pumping up tire pressure or improving aerodynamics by removing mirrors and taping up doors.

EEA’s findings of 3% less CO2 emissions from new EU cars in 2015 were based on “manipulated, discredited tests”, T&E said dismissing it as “worthless”. The NGO called on the European Commission to introduce the RDE system “immediately” to end the “deception of EU drivers”.

In late January, the Commission announced plans to increase market surveillance over car emissions tests via a new regulation that would be harder for EU member states to avoid. But in March, experts described the proposal as “too ambiguous” to prevent a ‘Dieselgate’ repeat just as EU states pushed for higher legally-allowed nitrogen oxide limits.

12. Renault Pledges To Reduce NOx Emissions on Diesel Vehicles from July 2016

Renault will apply measures to reduce the nitrogen oxide (NOx) emissions of its diesel-engined vehicles from July, the French carmaker said in a statement. The measures will be applied in Renault factories for vehicles that have to abide by Diesel Euro 6b emissions standards, the company said. Renault customers who already own a car with Diesel Euro 6b emissions standards will be able to get free-of-charge modifications on their vehicle from October, the company said.

A French probe found emissions from Renault diesels - and several other unnamed brands - in excess of statutory limits that had been met in European regulatory testing, widely acknowledged to be flawed.

13. 'Ban All Diesel Vehicles from Capital's Centre,' Say Over Half of Londoners
More than half of Londoners want diesel buses banned from the city center to cut toxic air pollution blighting the capital, a new poll reveals today. The YouGov survey showed 55 per cent of adults in the city back a crackdown on buses which experts blame for the largest proportion of nitrogen dioxide fumes from traffic in central London.

Even more supported a ban on diesel lorries, 62 per cent while 54 per cent believe diesel taxis should be stopped from operating in this area, and 52 per cent think all diesel cars should be banned from it. More than two thirds of Londoners also say higher polluting vehicles should pay more for travelling through the capital.

The findings will heap pressure on the next mayor to speed up switching away from diesel to cleaner electric buses and hybrid models used in electric mode.

Alan Andrews, a lawyer with ClientEarth which commissioned the poll, said: “There is no excuse for dirty diesel buses choking the capital. “The technology is ready and the next mayor needs to make sure London has the cleanest buses available.”

Simon Birkett, director of campaign group Clean Air in London, condemned Boris Johnson’s record on reducing bus pollution as “awful”. “Worse, some of his diesel-electric ‘New Bus for London’...failed even to operate in electric mode due to battery problems and 300 of them will be the only vehicles that won’t comply with his so-called Ultra Low Emission Zone in September 2020,” he added. He argued that the best way to “ban” diesel buses would be through “geofencing”, so all buses are electric or switch to electric mode in the most-polluted places.
The poll stated: “Diesel fumes from vehicles are one of the biggest causes of air pollution in London” and then asked “Would you support or oppose banning each of the following in central London as a way to improve air quality?” - listing diesel cars, buses, taxis and lorries.

The survey suggested that wealthier people, and to a less extent those living in outer London, were more likely to support a ban on diesel buses than those less well-off and from inner boroughs.

City Hall stressed that London had Europe’s largest fleet of hybrid buses, with 1,700 already on the road, alongside 17 electric buses and 8 fuel cell buses. Some 3,300 hybrid buses are expected to be operating in the capital by 2020, with action also taken to clean up the taxi fleet.

A spokesman for the mayor added: “Some of the most ambitious and comprehensive measures in the world are being taken to help improve air quality in the capital and protect Londoners from pollutants.”

Transport for London is to continue using around 300 New Routemaster buses with Euro V engines, insisting they are close to Euro VI NOx emission standards and that retrofitting the older model would cost around £15 million. The battery design for new buses had also been improved and ones which failed were repaired or replaced under warranty.

But Labor’s Sadiq Khan pledged an “ambitious target” of only buying fully electric or hydrogen buses by 2020, if he is elected mayor, to tackle air pollution. While his Tory rival Zac Goldsmith promised to make the whole of Greater London “pollution-free”, partly with “Clean Bus Corridors” so the cleanest buses are put on the “dirtiest” air routes.

* YouGov interviewed 1,031 Londoners between March 8 and 10.

**14. EV Charge Points Installed In Hammersmith & Fulham**

Hammersmith & Fulham have installed the first seven of their new electric vehicle charging points in the first phase of a plan to improve air quality and drive down emissions. Each charging location has two bays and a further 13 charging points are planned for August – creating 40 new on-street parking bays in addition to the 40 already located at the Westfield shopping center.

By 2017, it is hoped that a total of 80 parking bays will mean residents with plug-in hybrids and fully electric cars will, on average, have access to a changing point for every square kilometer of the borough.

The charging network is owned and operated on behalf of the council by Source London, a subsidiary of French firm Bollore.

Leader of Hammersmith & Fulham council, councilor Stephen Cowan, said: “As more residents take up electric vehicle use, these first few bays going live are just the beginning. We will continue to look for areas where residents tell us there is need and will investigate opportunities to expand our network wherever we can.

Standish Road, Gayford Road, Shepherds Bush and Farm Lane are just some of the locations with new charging points. Residents in other areas are able to request charging points if needed and will be considered on a case-by-case basis.
15. British MPs Say More Urgent Action Needed On Air Pollution

A government plan to tackle air pollution in five major cities in Britain by 2020 will not be enough and more urgent action needs to be taken, lawmakers said. Britain has some of the highest levels in Europe of the pollutant nitrogen dioxide, which is produced by diesel vehicles, and has already breached EU limits.

Last year, the Department for Environment, Food and Rural Affairs (Defra) said it would introduce so-called clean air zones in areas of Birmingham, Leeds, Nottingham, Derby and Southampton by 2020 in a bid to improve air quality. Vehicles such as old buses, taxis, coaches and lorries will have to pay a charge to enter these zones but private passenger cars will not be charged.

Plans have already been announced to improve air quality in London by 2025, such as introducing an ultra-low emissions zone and retro-fitting buses and new taxis.

However, the Environment, Food and Rural Affairs parliamentary committee said the schemes do not go far enough to tackle air pollution. "Only five cities - Birmingham, Leeds, Nottingham, Derby and Southampton - will have new powers to charge polluting vehicles to enter new clean air zones," Neil Parish, a Conservative deputy who heads the committee, said in a statement.

"Councils in the dozens of other English cities currently exceeding EU pollution limits must also be given the option of using such powers if their communities support action," he added.

Following the admission by Volkswagen that it used software to cheat EU vehicle emissions tests, the UK government should ensure that vehicle company marketing claims are accurate and should work with the EU to establish tougher standards that cut vehicle emissions on the roads, the committee said.

The government should also consider introducing a diesel scrappage scheme for older vehicles and more modern farming practices to cut greenhouse gas emissions and other pollutants, it added.

16. Scotland’s First Electric Bus Celebrates 100,000 Miles

Scotland’s first electric bus with zero tailpipe emissions has celebrated 100,000 miles as part of a local bus service, following its launch in November 2013. The Optare Solo battery-powered bus is operated by transport firm McLeans as part of a local bus service linking the ferry ports at Cairnryan to the railway station in Stranraer, West Scotland.

William McLean, owner of McLeans of Stranraer, commented: “We’ve had some really positive feedback from customers using the bus, who are impressed by its environmental credentials and how quiet and smooth the vehicle is in service.”

The bus received part-funding and support through the Scottish Government’s Green Bus Fund and the regional transport partnership in Dumfries and Galloway, SWestrans.

Optare said recent independent testing “has proven the Optare electric bus as one of the most efficient currently in service in the UK, reducing well to wheel carbon footprint by over 50% in comparison with equivalent diesels”.
17. Study Links Long-Term Exposure to Fine Particulate Matter to Diabetes

It has been suggested that air pollution may increase the risk of type 2 diabetes but data on particulate matter with diameter < 2.5 μm (PM2.5) are inconsistent. Researchers examined the association between long-term exposure to PM2.5 and diabetes incidence.

They used the Danish Nurse Cohort with 28,731 female nurses who at recruitment in 1993 or 1999 reported information on diabetes prevalence and risk factors, and obtained data on incidence of diabetes from National Diabetes Register until 2013. They estimated annual mean concentrations of PM2.5, particulate matter with diameter < 10 μm (PM10), nitrogen oxides (NOx) and nitrogen dioxide (NO2) at their residence since 1990 using a dispersion model and examined the association between the 5-year running mean of pollutants and diabetes incidence using a time-varying Cox regression.

Of 24,174 nurses 1137 (4.7%) developed diabetes. We detected a significant positive association between PM2.5 and diabetes incidence (hazard ratio; 95% confidence interval: 1.11; 1.02–1.22 per interquartile range of 3.1 μg/m3), and weaker associations for PM10 (1.06; 0.98–1.14 per 2.8 μg/m3), NO2 (1.05; 0.99–1.12 per 7.5 μg/m3), and NOx (1.01; 0.98–1.05 per 10.2 μg/m3) in fully adjusted models. Associations with PM2.5 persisted in two-pollutant models. Associations with PM2.5 were significantly enhanced in never smokers (1.24; 1.09–1.42), and augmented in obese (1.25; 1.06–1.47) and subjects with myocardial infarction (1.32; 0.86–2.02), but without significant interaction.

Fine particulate matter may the most relevant pollutant for diabetes development among women, and non-smokers, obese women, and heart disease patients may be most susceptible.

18. Two-Thirds of New Cars in Norway in March Were Hybrid or Electric

Norway is a case study in the effectiveness of electric-car incentives. The Scandinavian country is known as the friendliest place in the world for electric cars, thanks to generous financial incentives and other perks. So while electric and hybrid cars continue to make up a small fraction of new-car sales in other countries, they account for a much larger percentage in Norway.

In fact electric cars, along with hybrids and plug-in hybrids, made up roughly 60 percent of car registrations in Norway last month, according to figures published by Dinside Motor.

New-car totals for March included 2,595 battery-electric car, 2,042 plug-in hybrid, and 3,396 hybrid registrations.

In addition, 465 used battery-electric cars were registered in March (figures for hybrids and plug-in hybrids were not published).

That adds up to 8,498 registrations for all three categories, compared against 13,875 total registrations in March that works out to 61.2 percent.

Electric cars and plug-in hybrids alone accounted for 5,102 registrations, or 36.7 percent of the total. The Nissan Leaf was also the third-bestselling car in Norway last month, with 676 registrations. There have been months when electric cars—the Leaf as well as the Tesla Model S—were the top selling cars in Norway.
This level of consumer enthusiasm is enabled by a generous array of incentives. There is no road tax (or registration fee) for electric cars, no sales tax, no value-added tax, and the corporate-car tax is lower. Electric cars also get free public parking, free public charging, free ferry transport, and are exempt from tolls on roads, bridges, and tunnels.

They can also travel in restricted bus lanes, although this is expected to be rolled back due to traffic issues.

Norway's incentives and the results they yield are impressive, but the country has an even more ambitious goal. The government aims to make close to 100 percent of cars on Norwegian roads emission-free by 2025. That is part of a larger plan to cut carbon emission by 40 percent from 1990 levels over the next 15 years.

In addition, the capital city of Oslo may ban most cars—electric or otherwise—from its downtown area by 2020.

### 19. EU Reaches Deal on Exhaust from ‘Non-Road’ Machinery

European Union negotiators provisionally backed a law that would cut exhaust emissions from “non-road mobile machinery,” including vehicles used in agriculture, construction and industry, the European Parliament said April 7. The draft law, which was proposed by the European Commission in September 2014, would take the form of a regulation, or single EU-wide law, and would replace a 1997 EU Directive (97/68/EC) under which varying standards were introduced in different EU countries.

In general, the deal struck on Wednesday adopts the pollution limits and implementation timetable suggested by the European Commission in its proposal for a Non-Road Mobile Machinery (NRMM) Regulation. The main exception is a weaker limit for NOx from barges.

Pollution limits will be phased in for new engines over 2018-20. In a departure from the Commission’s proposal, Wednesday’s agreement also contains the possibility of retrofit requirements for existing engines to reduce their emissions, in line with a proposal put forward by MEPs.

According to the commission, emissions could be reduced under the new regulation by as much as 70 percent for nitrogen oxides (NOx) and particulate matter. A wide range of machinery would be included under the scope of the regulation, including lawnmowers, earth-moving equipment, chainsaws, cranes, drilling rigs, locomotives and tractors.

The draft regulation was approved by the European Parliament's environment committee in September 2015. Officials from the European Parliament and the Council of the EU, which represents the governments of member states, provisionally agreed to the regulation April 6. Both institutions will need to ratify the agreement before the regulation is considered final.

Elisabetta Gardini, an Italian center-right lawmaker who represented the European Parliament in talks with the council, said in a statement April 7 that the regulation would lead to the EU having “the strictest emissions limits in the world as of 2019” for non-road mobile machinery, which is estimated to account for 15 percent of nitrogen oxides emissions and 5 percent of emissions of fine particles in the EU.
A review to establish whether further emissions reductions are needed will take place by 31 December 2020. By 2025, the Commission will assess implementing real world emissions testing for NRMM. The new regulation will establish an in-service monitoring system to plug the gap between laboratory testing and real world emissions.

Campaign group T&E criticized the weaker rules for barges and the fact that no particulate matter limit had been adopted for diesel locomotives. Weaker pollution rules for inland waterways and for trains undermine the environmental credibility of the EU’s stated aim of making a modal shift away from road freight, said Julia Poliscanova of T&E.

“The reality is that if the shift to ‘green transport’ comes at the expense of air pollution, it’s not really ‘green transport’,” Ms. Poliscanova said.

The new regulation will replace a complex 1997 directive, as well as a patchwork of national laws, according to the Commission.

The triilogue agreement now goes forward for final approval by ministers and by the European Parliament.

20. Mixed Response to Idea of EU Noise Limits

Noise limits should not be set at EU level, the railway industry has said. But NGOs are in favor of the introduction of such limits through an update to the Environmental Noise Directive.

Noise is a “local issue by definition” so the principle of subsidiarity means it would not be appropriate to set limits at EU level, railway association CER told a recent EU consultation on the review of the 2002 Environmental Noise Directive. But environmental group EEB said EU air quality legislation has shown that EU limits incentivize national action. EU noise limits “could provide a strong incentive to seriously tackle noise sources and develop effective measures in action plans, e.g. quiet road surfaces, quieter rail wagons and equipment, more regular railway maintenance, cycling and traffic management policies”, EEB said.

Binding limits should be based on the latest recommendations from the World Health Organization and “should be developed so as to limit noise from specific sources such as traffic, aviation and railway noise”, EEB said.

In general, the directive does not contain enough in the way of specific measures for reducing noises at source, particularly transport noise. And many of its definitions, including those for quiet areas, agglomerations and airports, should be tightened, EEB added.

The directive defines agglomerations as having 100,000 residents and airports as having 50,000 movements per year.

CER said the rail sector was upgrading freight infrastructure to reduce noise but “the objective of noise reduction must be reconciled with maintaining the competitiveness of the railways”. It called for quiet areas to be implemented “in a reasonable way”, that would not hamper the future resuming of railway traffic on lines that have been out of service. It noted that the directive did not provide additional funding for noise-reduction, including sound insulation in housing.

UK NGO Aviation Environment Federation said the protection of rural quiet areas should be made a stronger priority.
21. Chinese Minister Urges Germany to Adopt E-Car Incentives to Boost Sales

China’s top technology official told German ministers in Berlin that they need to provide drivers with incentives to buy electric cars if they want to meet the country’s ambitious targets. Financial enticements catapulted sales of plug-in electric and hybrid vehicles in China during the past two years, said the country’s Science and Technology Minister Wan Gang, who met with government ministers in the German capital April 12. China’s direct financial support for purchases of private and commercial electric vehicles, introduced from 2012, helped bring sales “into gear,” Wan said.

“Incentives are very important for research and development and that creates market maturity very quickly,” Wan told auto executives in a speech at Berlin’s Federal Transport Ministry. Sales of battery plug-in and hybrid vehicles more than tripled since 2014 to about 330,000, according to the China Association of Automobile Manufacturers.

Germany has changed course over plans to follow China’s lead as lawmakers resist proposals that rely on taxpayer money to promote electric car sales. Chancellor Angela Merkel in 2011 pledged to put 1 million hybrid and battery plug-ins on the road by 2020 but sales remain a fraction of all vehicle sales in Germany.

About 130,000 hybrids and 25,000 all-electric cars were registered on German roads as of January compared with 30 million gasoline cars and 14.5 million diesels, according to the KBA vehicle registration authority. A proposal by Germany’s Social Democrats to give buyers of electric cars a 5,000-euro ($5,700) cash bonus has so far gained little traction.

NORTHERN AMERICA

22. Continuing Fallout in the US from VW Scandal

FTC Charges Volkswagen Deceived Consumers with Its “Clean Diesel” Campaign

The Federal Trade Commission has charged that Volkswagen Group of America, Inc. deceived consumers with the advertising campaign it used to promote its supposedly “clean diesel” VWs and Audis, which Volkswagen fitted with illegal emission defeat devices designed to mask high emissions during government tests. The FTC is seeking a court order requiring Volkswagen to compensate American consumers who bought or leased an affected vehicle between late 2008 and late 2015, as well as an injunction to prevent Volkswagen from engaging in this type of conduct again.

In a complaint filed in federal court, the FTC alleges that during this seven-year period Volkswagen deceived consumers by selling or leasing more than 550,000 diesel cars based on false claims that the cars were low-emission, environmentally friendly, met emissions standards and would maintain a high resale value. The cars sold for an average price of approximately $28,000.

“For years Volkswagen’s ads touted the company’s ‘Clean Diesel’ cars even though it now appears Volkswagen rigged the cars with devices designed to defeat emissions tests,” said FTC Chairwoman Edith Ramirez. “Our lawsuit seeks compensation for the consumers who bought affected cars based on Volkswagen’s deceptive and unfair practices.”
According to the FTC’s complaint, Volkswagen promoted its supposedly “clean” cars through a high-profile marketing campaign that included Super Bowl ads, online social media campaigns, and print advertising, often targeting “environmentally-conscious” consumers.

For example, Volkswagen promotional materials repeatedly claimed that its “Clean Diesel” vehicles have low emissions, including that they reduce nitrogen oxides (NOx) emissions by 90 percent and have fewer such emissions than gasoline cars. In fact, the FTC’s complaint states that they emit up to 4,000 percent more than the legal limit of NOx — a dangerous pollutant that contributes to environmental harms and respiratory ailments.

The complaint alleges that Volkswagen also claimed that “Clean Diesel” vehicles met “stringent emission requirements,” were “50-state compliant,” and would maintain a high resale value. Yet, according to the FTC’s complaint, these claims were also false because without the illegally installed software, the “Clean Diesel” vehicles would not have passed federal emissions standards and the hidden defeat devices will significantly reduce the vehicles’ resale value.

The FTC also charged that Volkswagen provided the means and instrumentalities for others to deceive consumers, and that installing the emissions defeat devices was an unfair practice.

The affected vehicles include 2009 through 2015 Volkswagen TDI diesel models of Jetta, Passats, and Touareg SUVs, as well as TDI Audi models. The suggested sale prices for the affected vehicles ranged from approximately $22,000 for the least-expensive Volkswagen model with a 2.0-liter engine to approximately $125,000 for the most-expensive Audi model with 3.0-liter engine.

The Commission vote authorizing the staff to file the complaint was 4-0. The complaint was filed in the U.S. District Court for the Northern District of California, San Francisco Division.

Volkswagen Reports Sales Drop Amid Diesel Woes

Volkswagen saw a 10.6% drop in sales in March as it continues to deal with the inability to sell diesel-powered models in the wake of its emissions scandal.

VW saw a sales drop in its core sedan models -- Golf, Jetta and Passat -- but a big increase in sales of its small Tiguan SUV, which competes in one of the industry's hottest segments. Golf was down 3.2%, Jetta fell 9.6% and Passat plummeted 21.8% compared to the same month last year.

Tiguan sales rose 53%, showing that many buyers aren't shunning VW because of its continuing troubles over having admitted to rigging software in hundreds of thousands of diesel cars to be able to beat emissions tests. VW is current subject to investigations by several government agencies and is yet propose a way to fix the affected cars.

In the meantime, VW isn't selling its diesel models, which used to make up about one out of five sales. VW officials say they are encouraged by their sales results, saying they are doing a better job of selling vehicles to individual customers.

“While overall sales saw a decline for the month, Volkswagen dealers improved in terms of retail business,” said Mark McNabb, chief operating officer for Volkswagen of America, in a statement.
Volkswagen U.S. Unit Destroyed Evidence, Ex-Worker Suit Says

Personnel at Volkswagen AG’s U.S. unit in Michigan destroyed evidence after the U.S. announced last year that the company had installed illegal devices on hundreds of thousands of vehicles to cheat emissions tests, a former employee said in a lawsuit. Daniel Donovan, who worked as a technical project manager in Auburn Hills, Mich., said he was fired last December after telling superiors, including the company’s in-house lawyers, that data was being deleted. Donovan, who had worked for VW since 2008, sued in state court in early March, alleging wrongful termination and violation of Michigan’s whistle-blower law.

The deletion of data conflicted with an order Donovan received to preserve such information after the September 18, 2015, announcement by the U.S. Environmental Protection Agency that VW had violated federal law by rigging vehicles sold in the U.S., he said in the complaint.

Donovan's immediate supervisor, Robert Arturi, told him September 18 that the company had to “stop deleting data effective immediately pursuant to a Department of Justice hold,” connected to the U.S. investigation, he said in his complaint. When he relayed that message to the information technology manager, he was brushed off, Donovan said.

Data deletion continued for three more days, in violation of the order, and additional backup disks were destroyed afterward, he said. An independent investigation by an accounting firm was thwarted, as evidence wasn’t provided, Donovan claimed in the suit. Sam Morgan, Donovan’s lawyer, declined to comment on the lawsuit.

“The circumstances of Mr. Donovan's departure were unrelated to the diesel emissions issue,” Jeannine Ginivan, a VW spokeswoman, said by e-mail. “We believe his claim of wrongful termination is without merit.”

Michigan law permits legal action if an employee is fired in retaliation for refusing to break the law, according to the complaint. It also cites a state law protecting workers reporting or about to report a legal violation.

VW, U.S. Government Reach Agreement in Principle to Settle Diesel Violations

Volkswagen Group reached an agreement in principle with U.S. authorities to address the roughly 482,000 2.0-liter diesel VW and Audi vehicles with software designed to mask excess emissions in lab tests. A U.S. judge announced in a court hearing in San Francisco that VW has agreed to offer affected owners several options, including a buyback, lease cancellation and -- pending additional government testing and approval -- the option to have their vehicles modified.

The deal will also include "substantial compensation" for the affected owners regardless of which option they choose, U.S. District Judge Charles Breyer said.

VW has also agreed to establish a fund to remediate environmental damage caused by the excess nitrogen oxide emissions released by the affected vehicles as part of the deal, Breyer said. VW also will be required to commit funds to promote green vehicle technologies, he said.

In a statement, VW called the tentative agreements an important step towards "making things right" and that it is "committed" to earning back the trust of customers, dealers, regulators and the public.
"Volkswagen intends to compensate its customers fully and to remediate any impact on the environment from excess diesel emissions," the company said. "As noted today in court, customers in the United States do not need to take any action at this time."

While many details must still be resolved, the agreement marks a major step towards resolving VW's emissions violations which have consumed the company since they became public last September. In a statement, VW AG said the agreement in principle will be the basis for binding consent decrees from the U.S. Department of Justice and the Federal Trade Commission. The deal does not affect the Justice Department’s ongoing criminal probe into VW's actions, nor does it affect the ongoing investigation of state attorneys general, the company said.

The company has also agreed on “the basic features” of a deal to resolve the many class-action lawsuits filed against the company by affected diesel owners. Those basics will be incorporated into a “comprehensive settlement in the coming weeks," VW said.

The tentative deal was reached after weeks of intense negotiations between VW, the U.S. Department of Justice, California's Air Resources Board, the U.S. EPA, Federal Trade Commission and attorneys representing U.S. owners of VW diesels who have sued the automaker over the emissions scandal. The talks were steered by former FBI Director Robert Mueller as the court-appointed settlement master.

The deal does not apply to about 80,000 3.0-liter V-6 diesels used in VW, Porsche and Audi models. A resolution on those vehicles has yet to be agreed upon. It’s also unknown how much VW will have to pay in government fines for the emissions violations.

Breyer said he expected the parties to work "expeditiously" to resolve those outstanding issues.

During the hearing, Breyer admonished attorneys representing the involved parties to maintain confidentiality about the tentative deal after some details were leaked to media outlets in advance of the announcement. He issued a gag order until the parties finalized a consent decree containing the full details of the agreement, which must be submitted to the court by June 21. The consent decree will be made public and is subject to public comment and court approval prior to taking effect, Breyer said.

23. EPA Requests Information from Mercedes-Benz over Emission Levels

U.S. Environmental Protection Agency said it had not opened an official investigation into Daimler’s luxury car brand Mercedes-Benz but had only requested information to explain emissions levels in some of its cars. A spokesman for Daimler said it was fully cooperating with the request for information, and that Mercedes-Benz cars conformed with all rules and norms.

Daimler said the EPA request for information came in response to a class-action lawsuit filed by law firm Hagens Berman on February 18, 2016, in the New Jersey District Court. The suit accuses Mercedes of deceiving consumers with false representations of its BlueTEC vehicles, which it marketed as "the world's cleanest and most advanced diesel."

A Daimler spokesman said the suit was wholly unfounded and without merit.

The lawsuit alleges the automaker knowingly programmed its Clean Diesel vehicles to emit illegal, dangerous levels of nitrogen oxide, or NOx, at levels 65 times higher than those permitted by the EPA when operating in temperatures below 50 degrees F (10 C).
Daimler said its cars conformed to all relevant rules and regulations.

It said, however, that under certain circumstances, a system to treat exhaust fumes could operate at a level of reduced effectiveness to prevent condensation from building up in the exhaust system. The condensation could otherwise lead to corrosion and damage the effectiveness of the engine and exhaust system.

That is permissible and not illegal, a spokesman said late on Sunday.

German daily Handelsblatt was first to report the EPA request for information. In a recent edition, Handelsblatt quoted Christopher Grundler, director of the EPA's Office of Transportation and Air Quality, as saying: "We know about the lawsuit. We have contacted Mercedes and requested the test results for the U.S. diesel engines." EPA spokeswoman Laura Allen confirmed Grundler's comments.

**24. Shipper Fined $130K by CARB for Violating Clean Air Regulation**

The California Air Resources Board has fined the China Navigation Co. Pte. Ltd. $129,500 for failure to switch its engines over from heavy diesel “bunker” fuel to cleaner, low-sulfur fuel when close to the California coast, as required by state law. CARB's Ocean-Going Vessel Fuel regulation is a critical part of California’s plan to attain air quality standards in Southern California and across the state.

On December 28, 2012, an ARB inspector found that the vessel Chenan, managed by the China Navigation Co. Pte. Ltd., operated within Regulated California Waters (i.e. 24 miles or less from the coast) on noncompliant heavy fuel oil on 12 separate days (four voyages) between August 5 and December 28, 2012, while en route to and departing from the Port of Los Angeles.

“Ships using heavy diesel fuels are a significant contributor to California’s air quality problems, even in communities located far from our coast” said ARB Enforcement Division Chief Todd Sax. “That’s why we check vessels nearly every day to ensure that they are compliant with our strict clean air laws. When we identify a violation, we educate the fleet owner and crew on how to comply with our requirements, and we assess penalties as a deterrent to future noncompliance.”

The China Navigation Co. Pte. Ltd. took prompt action after being notified of these violations and cooperated with the investigation. In addition to paying a fine, the company agreed to comply with all fuel switchover requirements and to keep accurate records going forward.

The Air Resources Board conducts an estimated 800 to 1,000 ship inspections each year, checking for proper fuel usage, record-keeping and other compliance requirements. Part of the inspection involves sampling each vessel’s fuel, and analyzing the fuel sample for compliance with ARB fuel sulfur requirements.

The Ocean Going Vessel Fuels Regulation, adopted in 2008, eliminates 15 tons of diesel exhaust – a known carcinogen - daily from ocean-going vessels, and is considered a vital tool in helping to reduce cancer rates and premature deaths associated with living near the state’s busy ports and trade corridors.

**25. Mexico City Declares First Air Pollution Alert Since 2005**
The Mexico City government declared its first air pollution alert in 11 years recently after ozone levels reached almost twice the acceptable limit. The measure requires older and more heavily polluting vehicles to stay off the road in an attempt to improve air quality.

The city's environment office attributed the conditions to a high-pressure system and intense sunlight.

Mexico City used to regularly reach high smog levels, before a rule was introduced to discourage cars more than 8 years old. That rule was recently relaxed by a court order, and environmental activists and officials say that has led to more cars on city streets.

Mexico City's last city alert for ozone was in 2002. The last pollution alert for air particles was in 2005.

Mexico City sits in a high mountain valley, where the surrounding mountains can trap pollutants and prevent them from dispersing. The city is 7,350 feet (2,240 meters) above sea level.

The alert also limits highly polluting industrial processes, and officials recommend that people stay indoors and not perform vigorous exercise outdoors.

26. Mexico City Orders Cars off the Road 1 Day per Week to Reduce Smog

Pedro Mera—Xinhua Press/Corbis This photo shows a view of the dense smog layer covering the buildings from the look-out of the Torre Latinoamericana, in Mexico City on March 17, 2016. The city has struggled with air pollution for decades

Authorities in Mexico City announced new rules recently that will require cars to remain off the road one day a week in a move to address the region's worst air pollution in a decade.

The measure, which will continue through the end of June, expands on a previous program that restricted high polluting vehicles on certain days. Now, cars will be required to stay off the road on one day a week in accordance with the color of a government assigned sticker, according to the Environmental Commission of the Megalopolis agency.
Mexico City has struggled with air pollution for decades, but the situation had been improving in recent years as officials pushed through regulations on industry and transport. But last year a court ruling allowed an additional 1.4 million vehicles on the streets.

And with more vehicles comes more traffic and pollution. Increased traffic is a recipe for disaster when combined with over-populated streets (more than 20 million people reside in the greater urban area). Winter and spring tend to bring the worst air quality to the city—located in a basin—with few winds to push polluted air out of the city.

Air pollution has received attention in recent years for the millions it kills in fast-growing developing countries like China and India. But recent research has shown that air pollution continues to cause a slew of health issues from lung cancer to obesity in more developed countries. And the death toll—while not as stark as in the developing world—still ranks in the tens of thousands in places like the U.S., Germany and Japan, according to a study in the journal Nature.

27. Canada Study Quantifies Diesel Exhaust Deaths

Diesel emissions contribute significantly to air concentrations of nitrogen dioxide, fine particulate matter and ground-level ozone, particularly in major urban centers like Vancouver, Edmonton, Calgary, Winnipeg, Toronto and Montreal, the federal health department said in a summary of its health risk assessment of diesel exhaust published in the March 5 issue of the Canada Gazette, Part I.

“On-road and off-road diesel emissions result in significant and substantial population health impacts and societal costs in Canada,” it said. “Efforts should continue to further reduce emissions of and human exposure to diesel exhaust.”

Modeling indicates that diesel emissions accounted for 710 premature deaths in 2015, and cost Canada C$5.1 billion ($3.8 billion), the department said. Of those deaths, 65 percent were attributed to fine particulate matter (diameter of 2.5 microns or less) emissions, 32 percent to nitrogen dioxide emissions and 3 percent to ground-level ozone, it said.

Exposure to hazardous pollutants in diesel exhaust also is associated with significant acute respiratory system effects, asthma incidents, hospital admissions, emergency room visits, acute child bronchitis episodes and adult chronic bronchitis cases across Canada, it said.

Health Canada noted that diesel-powered vehicles are “pervasive” on the nation's roadways and in urban centers, making it reasonable to assume that most Canadians are regularly exposed to pollutants from diesel exhaust. The variable and complex nature of diesel exhaust, together with the fact that the same pollutants are emitted by other sources, however, make it difficult to quantify general population exposure, it said.

The current health assessment took into account the conclusions of the California Environmental Protection Agency's 1998 report on diesel exhaust, the U.S. Environmental Protection Agency's 2002 human health risk assessment and literature published on the subject since 2000, all of which conclude that diesel exhaust is carcinogenic and specifically associated with lung cancer, it said.

28. Volvo's 2017 S90 Has Standard Semi-Autonomous Driving System
An important next step toward the self-driving car was taken at the 2016 North American International Auto Show with the introduction of the all-new 2017 Volvo S90—a production car with a semi-autonomous driving system as standard equipment. Built on Volvo's scalable product architecture (SPA), it combines the latest version of the company's Pilot Assist with the XC90's low-speed driver assistance with auto braking system. Capable of operating at up to 80 mph (130 kph), the new system is claimed to detect large animals such as deer and horses and has full day-or-night functionality. It can provide steering inputs to keep the car in lane, and unlike the XC90, can hold the course and lane even without a vehicle ahead to track.

The S90's software goes well beyond that of the XC90, which operates only up to 30 mph (50kph), but the key hardware pieces are carried over. They are multiple radar and camera arrays, including an optional 360º camera system for driving and parking in tight quarters, and auto parking.

However, the Pilot Assist operation is based on a forward-looking laser radar from Mahle/Delphi and the newest Mobileye camera. Both have a 140º angle of view, explained Thomas Mueller, Vice President of Electrical and Electronics Systems at Volvo R&D.

Image detection is key and Volvo introduced pedestrian identification in 2010, followed by operation in darkness in 2012. Volvo's new software, developed with Mobileye but validated by Volvo in road testing, with threshold values set by Volvo, has evolved over the last several years.

The "night vision" learned in 2010 was followed by nighttime pedestrian detection, then by identification of bicyclists. And there is work ongoing beyond even the large animal detection, to identify sudden appearance of fixed objects in the road that could pose a hazard, such as a stack of bricks or a sofa, Mueller said.

The software uses the inputs of the standard array of sensors and cameras, plus a premium-accuracy GPS, to create a high definition 3D digital map of the area surrounding the car, with some measurements claimed by Volvo to be accurate to the millimeter level.

In addition, Volvo employs a new, continuous road traction identification algorithm for the S90. This enables the control system to adjust for the road surface itself, plus the performance of the brakes and tires, Mueller said.

Because the hardware is carried over from the XC90, the S90 Pilot Assist is backwards-compatible to that model, and Volvo soon will make a reflash available and upgrade the production system on that vehicle. There are tweaks that are necessary for the XC90, Muller noted, specifically pointing to the difference in windshield rake affecting the heads-up-display.

Volvo's confidence in the high-speed system was reflected in this statement, "We will take responsibility for any accidents in autonomous mode."

29. One Answer to E-Cars' Lack of Range: Electric Road

A father-daughter team founded the Scotland-based Tracked Electric Vehicle Project where battery-powered cars recharge while they drive from a metal strip embedded in highways. The system is designed to combat range anxiety from consumers who worry that an electric car will lose its spark before they find a place to plug in.
The program has caught the attention of infrastructure builders such as ArcelorMittal S.A., OHL Group and Heintzmann GmbH, which earn revenue from large public works and awarded the TEV Project a prize for the best invention in the industry. For the project's founder, Will Jones, the system has the potential to keep driverless electric cars on the road around-the-clock.

“It's a magical thing,” said Jones, 75, who owns dozens of energy-related patents and also co-founded Philadelphia Scientific LLC, a maker of battery systems. “If you achieve direct contact, energy density for battery-electric cars goes from inadequate to infinite.”

His TEV Project plans to build its first trial road by next year at an estimated cost of $1.2 million to $1.8 million a mile, a price that is less than for a traditional highway. The infrastructure companies are watching the project with interest.

“As a rule of thumb, normal highways cost about 30 times more than the TEV project,” said Jose Papi, chairman of the Smart Transportation Alliance, the infrastructure-company group that picked TEV as the best innovation. Its per-mile costs “are much cheaper than any other idea that we've come across,” he said.

TEV is a nonprofit business aimed at helping governments and private companies collaborate. It could cost up as much as $295 billion to refit all 164,000 miles of U.S. federal highways with the technology.

The TEV Project highways would have an electrified metal strip embedded into the middle of the road that provides a constant source of power to the vehicle. Just like streetcars and subway trains do in today's cities, cars on a TEV highway could charge as they drive. Jones describes his concept as melding 19th century railroads with 20th century highways to underpin a new clean energy transport network.

There are 1 billion cars on the world's roads now and only a 10th of a percent have a power plug. While electric vehicle sales grew 60 percent in 2015 and will grow another 46 percent this year, according to Bloomberg New Energy Finance data, the U.S. fleet size of 460,000 is far below the critical mass that is necessary to win federal infrastructure support.

The Federal Highway Administration requested about $49 billion last year to take care of the national roads system used by the country's estimated 258 million gasoline-powered cars.

“There would be a significant cost challenge to implement TEV Project-type infrastructure, as well as potential difficulties in getting automotive manufacturers to collaborate on standards for the connection between the vehicle and road they are proposing,” said Colin McKerracher, head of advanced transportation analysis at BNEF.

Until now, most research has been directed toward increasing battery storage to extend range. Manufacturers including Tesla Motors Inc. and General Motor Co. are both developing better batteries so to cover longer distances.

Yet even the best batteries can't perform without charging stations. There were a combined 160,000 public charging stations in the world's eight biggest electric-car markets, according to the most recent data. Transportation infrastructure is still so skewed toward gas-guzzlers that even green-leaning California has more than three gas stations for every electric-charging station.
“Charging infrastructure is one obstacle to electric vehicle market growth,” said McKerracher, who also noted that the high cost of electric cars remains the primary impediment.

TEV is seeking to develop its concept at Newcastle University in northern England, where it is still in discussions about funding for the next two years. Their grant would be partially financed by Innovate U.K., a government-owned agency.

30. Premature Births Linked To Air Pollution, Costs More Than $4 Billion Each Year

There's growing evidence that claims pollution is one of the contributing factors of premature births in the United States. According to the study published in the journal Environmental Health Perspectives on March 29, states that a staggering 16,000 premature deaths in the U.S. have been linked to air pollution in 2010.

That is 3 percent of the total premature deaths of 475,368 nationwide. The result is a massive economic cost of $4.33 billion, which includes $760 million on hospital stay and long-term use of medications, and another $3.57 billion lost in economic productivity due to physical or mental disabilities that may result from premature births.

For the study, the researchers analyzed data from the Environmental Protection Agency, the Centers for Disease Control and Prevention and the Institute of Medicine, reports Science Daily. For each county, they determined the average level of pollution and the number of premature births.

After which, they identified long-term health impacts as shown in previous studies. The effects could range from death, reduced IQ level, and work absences due to prolonged hospitalizations or deteriorating health.

With these findings, there's an urgent need for policymakers to make drastic moves to curb air pollution in the country. "Without data documenting the health effects of air pollution on preterm births, there's only one side to that discussion," lead author Dr. Leonardo Trasande, an associate professor in the Department of Pediatrics, Population Health and Environmental Medicine at NYU Langone Medical Center, told CBS News.

Trasande and his team are planning to present the findings to policy makers so they can make corresponding regulations and laws to limit pollution in the country. The researchers quantified the resulting effects of pollution, so lawmakers can easily grasp its impact not only socially but economically as well.

Dr. Trasande added the staggering economic cost can be avoided by limiting emissions from automobiles and coal-fired power plants. It is also recommended for individuals to use air filters and close windows of the house and reduce time spent outdoors, especially on days with high levels of air pollution.

There will be further research according to Dr. Trasande to determine the effects of particulate matter in any of the pregnancy stages. As of the moment, the study findings are limited in the U.S., but researchers hope they could conduct one that will cover globally. To know more effects of pollution during pregnancy, check out the video below:

31. Mexico City Choking While Cleaner Vehicles Are Exported
Millions of people in Mexico City are choking on the worst air quality in 14 years, as cars and trucks add to the pollution with their outdated emissions controls. And it isn't as though Mexico lacks access to the best technology. The nation's export-oriented factories, the focus of a $20 billion investment boom, ship motor vehicles to countries with strict pollution limits. Yet Mexico's requirements are less stringent so cars, pickups and commercial trucks sold domestically don't live up to the same emissions standards as the models made for foreign buyers.

Mexico's weaker pollution controls are worsening the thick layer of smog basting the capital, which got so bad in early April that city officials banned 40 percent of all vehicles from the streets. Transportation accounts for almost half of Mexico City's air pollution, which according to government data kills as many as 2,700 people annually.

“We produce some of the best vehicles sold in the U.S. or Europe," Edmundo Molina, an energy researcher at the Monterrey Institute of Technology, said on April 14th. “The paradoxical thing is why we use technology here that's not as good compared with other countries. And the reason has to do with regulation.”

While low-polluting fuel is sold in Mexico City, it has yet to be made available nationwide by Petroleos Mexicanos, the state-owned oil company known as Pemex. That makes it difficult to introduce vehicles with more modern emissions controls, according to the Mexican Automobile Industry Association, a trade group representing automakers.

Boosting tax breaks on new models also would help modernize the fleet of heavy vehicles, according to Miguel Elizalde, head of the country's trade association for bus and truck makers. The average age of heavy vehicles in Mexico is 17 years, he said. The group welcomes an update in regulation that would raise emissions standards to those in the U.S. or Europe “but we need legal certainty to define the planning of the vehicles and make sure there is no surge in imports of used vehicles bought in the United States.”

Pemex will provide ultra-low sulfur diesel across the entire country by the end of 2018, the company said.

“The negotiations are like a game of the chicken or the egg, in which one party says, ‘Give me the gasoline first,' and the other says, ‘No, because we don't have vehicles in which to use it,'” said Fatima Masse, an environmental policy analyst at the Mexican Competitiveness Institute, a Mexico City-based think tank.

The situation in the capital only has gotten direr since a 2015 Mexican Supreme Court ruling eased a program forcing motorists to leave their cars at home one day of the week. As a result, 600,000 more cars are on the streets every day, said Gabriela Nino, public policy director at the Mexican Environmental Rights Center, a nonprofit lobbying group.

Now, with the blanket of smog seemingly entrenched over the capital for weeks, the city has been struggling to bring down ozone levels. Officials even took the unpopular step of forcing a fifth of all cars off the road once a week until June, regardless of their emissions levels.

The government, Pemex and automakers are discussing ways to adopt more advanced emissions controls, said Nino, who has participated in the talks. Progress won't come without a cost. "In the end, the industry passes the cost of this technology change on to the consumer,” she said. "It's one of the pending issues that are affecting air quality.”
32. New Jersey Changes Emissions Test Rules for Motor Vehicles

Drivers in New Jersey will have to take their vehicles to a private inspection station for re-testing if they fail emissions testing under new rules that take effect next month. Motorists are currently permitted to get a second test at state inspection stations.

MVC chief Raymond Martinez said the state currently pays for the second test. Under the new rules, motorists must go to a private station for re-inspection to insure their vehicles are prepared before bringing it to inspection.

Martinez says the state is charged $20.29 by contractors for each inspection and officials are looking for ways to reduce costs.

Vehicles from 1995 and older will no longer need to be inspected so private garages will not need to buy equipment to test tail pipe emissions.

33. Dealer Brings 'Forbidden Fruit' Used Electric Cars to Boulder, Colorado

Some markets are stronger than others for certain types of cars. Think Subarus in the Northeast or the Rocky Mountains, convertibles in Florida, and pickup trucks in Texas. Used-car dealers carefully watch auctions to find cars in less demand elsewhere that they can sell locally for more money. Now, a used-car dealer in Boulder, Colorado, has made a business out of nabbing electric cars intended to be sold only in California, and offering them to buyers in Colorado—who end up with much lower net costs, thanks to the state’s uniquely hefty incentives.

Green Eyed Motors sells a Kia Soul EV for the price of a regular Soul (after credit)
It's not quite a loophole, but Green Eyed Motors of Boulder appears to have found an intelligent niche, at least in the short term. Colorado's somewhat convoluted electric-car tax credit provides an income-tax reduction worth up to $6,000 the first time an electric car is registered in the state.

Colorado's law differs from those in many other states, not only for its high maximum but also in that the credit applies to used cars just as it does to new cars.

There's some math involved, based on a car's battery capacity and its purchase price, that prevents most electric cars from qualifying for the full $6,000. Still, upwards of $5,000 is the norm for a new Nissan Leaf—and Green Eyed Motors advertises several of its cars as qualifying for the full credit.

What the company does is apparently unique within the state's borders.

The dealership actively seeks out cars from other states, including those that would normally be unavailable outside California or a handful of other coastal locales. In fact, Green Eyed Motors advertises directly on its site that all its electric cars are imported into Colorado from other states, ensuring that they will qualify for the rebate.

Since Green Eyed Motors is casting a wide net, they look beyond the Nissan Leafs that are most common nationwide. That means that Colorado buyers can locally buy a normally unavailable
used electric car, like a Fiat 500e or a Chevrolet Spark EV, saving them the effort of buying one unseen and having it trucked in from California.

That's not to say that Green Eyed Motors only deals in eco-friendly cars; the company has its share of luxury SUVs that might net 15 mpg combined. After all, even in Colorado, the market for California-only electric cars is pretty small.

### 34. Environmental Groups File Lawsuit over Pollution from U.S. Aircraft

Three environmental groups filed a lawsuit against the Environmental Protection Agency to press for faster action in setting limits on greenhouse gas emissions from U.S. aircraft. Earthjustice, the Center for Biological Diversity and Friends of the Earth filed the lawsuit to force the agency to complete its "endangerment finding," a step in the EPA rule-making process that would allow the agency to regulate carbon dioxide emissions from U.S. aircraft.

Any "unreasonable delay" in setting emission standards for aircraft violates the law and the EPA's duty under the Clean Air Act, according to the lawsuit filed in U.S. District Court for the District of Columbia.

Carbon dioxide emissions raise average temperatures, contributing to climate change. U.S. aircraft account for 3 percent of U.S. total CO2 emissions. There currently are no restrictions on greenhouse gas emission from aircraft.

The United States accounts for half of worldwide CO2 emissions from aircraft. Emissions from the aviation sector are projected to triple by 2050 without regulations.

The EPA was expected to finalize a proposal for an endangerment finding in mid-2014. But last June it issued only a preliminary scientific finding on the emissions.

The environmental groups want the agency to publish its final finding, opening it up to a public comment period, before President Barack Obama leaves office. The agency has said it plans to implement a global carbon dioxide emissions standard being developed by the United Nations' International Civil Aviation Organization.

The EPA is expected to finalize the endangerment finding this summer, spokeswoman Laura Allen said. The agency would then undertake a rule-making process to adopt standards "at least as stringent as the ICAO standards" and formally propose them in 2017, she said.

The standards expected to be adopted by the ICAO later this year are aimed at makers of small and large planes alike and would apply to all new aircraft models launched after 2020. Environmental groups have argued that the standards would make barely a dent in emissions from the aviation sector, one of the fastest-growing carbon emissions sources.

### ASIA PACIFIC

### 35. China's Environmental Law Helping To Win "War on Pollution"?

Since China’s minister for environmental protection, Chen Jinjing, took office a year ago, public interest in – and scrutiny of – environmental issues has intensified. The Environmental Protection Law, which came into effect at the start of 2015, gave Chen an opportunity to make real changes,
and according to official data and other sources, is already delivering results in China’s “war on pollution”.

At the annual gathering of the NPC and the CPPCC in March 2015, Chen said that the new law would be no “paper tiger” and would have “real teeth”. A year later, and the law appears to be making major advances – and the most obvious impact has been in tackling smog. “There have been improvements in the number of good air quality days, the number of poor air quality days, and year-round PM2.5 levels,” Chen said at political meetings in Beijing earlier this month.

In 2015, 74 cities (the first wave to implement new air quality standards) saw average PM2.5 levels drop by 14.1% year-on-year, according to government data. “NASA satellites recorded falling levels of particulate matter in China’s east and central regions. The entire Pearl River Delta met annual PM2.5 standards last year, and to achieve that in such an important region has increased our confidence,” Chen said at this year's conference.

International environmental organizations also believe that China has achieved meaningful improvements in curbing its air pollution last year, from extremely high levels recorded in 2014. A recent study from Greenpeace found that from 2014 to 2015, PM2.5 levels (the dangerous fine particles that cause pollution) fell by 10.3%. However, the same report pointed out that 80% of cities still have poor quality air.

In addition, China’s economic slowdown has prompted shutdowns of factories that are major causes of smog.

Public sentiment has reacted cautiously to claims of clear improvements in air quality. In the winter of 2015-2016 (when pollution is typically worse because of the greater demand for heating), many parts of the country have suffered severe fog and haze. In Beijing, the first ever red smog alert was issued, cars were banned and schools closed.

When discussing China’s efforts to deal with air pollution, Chen explained that the curbs on smog will be delivered in three stages:

- In the first, emissions far exceed the ability of the authorities to deal with them effectively and efforts made during this stage only manage to yield small improvements.
- In the second stage, government effort and regulations are ramped up, but outcomes fluctuate hugely, and are vulnerable to environmental factors such as, wind speed, humidity and rainfall.
- In the third stage, pollution is reduced to the point where outcomes aren’t so dependent on weather conditions, and eventually, smog is reduced to manageable or ‘safe’ levels.

According to Chen, “China is currently in the second of those three stages, and moving towards the third.”

Li Yan, deputy program director at Greenpeace East Asia, told the press that the implementation of the central government policies at a local level can be challenging. Last year, the Ministry of Environmental Protection (MEP) shone light on polluting enterprises and targeted local governments. The leaders of the steel-producing city of Linyi in Shandong were the first to be summoned by the ministry under the new law’s powers.
In the following five days, the city shut down production at 57 plants while action to improve air quality was taken. The crackdown was so drastic, and swift, that it disrupted cash flows between firms, led to mass job losses, and increased the risk of a local financial crisis.

At that time, the environment ministry was castigated on social media networks for hampering economic growth and employment through draconian and arbitrary measures. Some commentators said that environmental protection rules should be relaxed during times of economic uncertainty. “The Ministry withstood that pressure and gave prompt rebuttals, shifting mainstream opinion to the view that China should not give the green light to polluting firms during tough economic times,” explained Ma Jun, head of green NGO the Institute for Environmental and Public Affairs.

The handling of Linyi’s pollution problems has underlined how the MEP has taken decisive action in response to shortcomings at a local level, where there is often a shortage of manpower and resources, and a weak grasp of environmental issues.

At a press conference, Chen was critical of the view that protecting environment was incompatible with economic growth. We need to use environmental protection to encourage economic transformation and upgrading,” he said.

As ever, enforcement at a local level will be crucial. The updated environmental law has given legislators more powers to oversee local government and delivery will be monitored closely by the National People’s Congress, China’s main legislative body. “Those responsibilities need to be enforced, local governments need to abide by the law if the companies are going to abide by the law themselves,” said Chen.

One sanction included in the new law should, in theory at least, focus minds among companies about the consequences of pollution. These include daily accumulative fines which are imposed when the law is breached. The law hugely increases the cost of those breaches, by removing the previous cap on fines.

Daily fines were imposed in 715 cases in 2015, with a total of 569 million yuan (£57 million) collected. But application of fines has been patchy and, a case covered in Chinese media recently has garnered much attention. In mid-March, the MEP ordered an investigation after a provincial environmental protection body fined a factory in Jiangsu province just US$90 for dumping waste water.

Ma Jun says fines need to be much tougher. “It seems that not many firms were actually given daily fines in this past year.” He added that there still is not enough disclosure of environmental information, either by government or businesses.

A notable achievement of the Environmental Protection Law has been its support of public litigation. Last year national courts accepted 53 environmental public interest litigation cases, which is major progress, said Wang Canfa, professor at the China University of Political Science and Law, and the founder and director of the Beijing-based Center for Legal Assistance to Pollution Victims.

36. Chinese Premier: ‘Protect the Environment While Pursuing Development’
China’s Premier Li Keqiang declared a “war on pollution” at the opening of the country’s annual National People’s Congress meetings in March two years ago and President Xi Jinping pledged an “iron hand” against polluters in 2015. This year, Chinese officials have toned down their rhetoric on environmental protection in favor of more tempered language and a re-elevation of the economy as the top priority.

“We need to protect the environment while pursuing development and achieve development in a well-protected environment, making sustained efforts to build a sound ecological system,” Li said in his address March 5th at the opening of the annual National People’s Congress. “We need to take serious action to prevent and control air, water and soil pollution, and intensify ecological conservation and restoration efforts.”

The current economic slowdown has helped to keep carbon emissions and energy consumption in check, likely reducing the need for tough language, even as the government continues a major effort to reduce overcapacity in heavily polluting industries such as steel and coal and transition to a more consumer-driven, innovative economy.

The 10 days of National People’s Conference meetings could culminate in completion of China’s 13th Five-Year Plan, covering 2016–2020. China’s central government released a high-level outline of the plan at the start of the meetings. While it included few specific environmental targets—and comments from officials—it cast some light on what to expect:

- China will aim to reduce water consumption by 23 percent, energy consumption by 15 percent and reduce carbon emissions per unit of gross domestic product by 18 percent compared to 2015 levels by 2020, Li said.
- The Five-Year-Plan outline includes an energy consumption cap of 5 billion metric tons of standard coal equivalent by 2020. While proposed earlier, it marks the first time the country has outlined that goal in a planning document.
- A total annual water consumption cap of 670 billion cubic meters by 2020 also was outlined in the plan, a goal the government expects to meet by enforcing previously announced strict water management policies and closer monitoring of major water-consuming industries.
- The country will conduct a second national source pollution census by 2020 and expand the kinds of pollution covered, including airborne emissions of volatile organic compounds targeted, with a goal of lowering those emissions by 10 percent by the end of 2020.
- During the next five years, a special campaign for treating hazardous waste will be conducted. It will include a census on hazardous waste and heavy metals, with a specific focus on waste ash with high heavy-metal content.
- China plans to address growing urban waste issues by increasing incineration rates and constructing more garbage treatment facilities and to increase wastewater treatment rates to 95 percent in urban areas and above 85 percent in counties.

Other goals include continuation of previously announced policies, such as strict controls on setting up ecological redlines that would disallow certain business activities in crucial areas marked for protection and streamlining planning policies and documents that historically have created bureaucratic overlap leading to confusion over what was allowed in areas.

Last year, total energy consumption was 4.3 billion metric tons of standard coal equivalent, according to National Bureau of Statistics data. With economic growth rates slowing, the new national cap goal of 5 billion metric tons could be reached before 2020, some observers said.
Xie Zhenhua, the country's special envoy on climate change, said March 7 that China’s carbon emissions are “still increasing,” but projected they could plateau for several years before peaking between 2025 and 2030.

Some local governments are facing difficulties meeting environmental targets, partly due to a sluggish business environment and strained budgets, officials said. “As their local economy gets more depressed and they are getting less fiscal revenue, some local governments are losing the initiative for pollution treatment,” Wu Xiaoqing, vice minister of the Ministry of Environmental Protection, said on the sidelines of the Beijing meetings March 7.

The central government has laid out a goal that major cities meet good air quality levels 80 percent of days by the end of 2020, which could put pressure on some cities, Wu said. “Most can probably fulfill the targets, as long as they take efforts to treat air pollution,” Wu said. “A smaller proportion, because of the economic pressures and structural adjustments, whether they can meet targets is uncertain.”

The 13th Five-Year Plan is expected to establish more direct lines between the Ministry of Environmental Protection and provincial environmental protection bureaus and with those bureaus and municipal and local bureaus below them. (See story below.) Local environmental protection bureaus now answer directly to local governments, which in some instances has led to conflicts of interest and avenues for corruption or local protectionism.

In February, the environment ministry warned local governments that it would not approve environmental impact assessments for new projects if they do not meet air, water and soil pollution reduction targets, if there is major damage to their local ecology, or if they ignore ecological redline policies.

China met several environmental goals under the 12th Five-Year Plan (2010–2015), the government said late last year. Among those were goals for airborne emissions of sulfur dioxide and nitrogen oxide, and goals for water pollution, including chemical oxygen demand and ammonia nitrogen in wastewater. And during the course of the five years, energy consumption per unit of GDP dropped by 18.2 percent.

Massive amounts of solar and wind capacity being added in China, as well as goals for increasing nuclear and hydropower capacity significantly by 2020, also should play a major role in keeping carbon emissions in check.

37. China Hopes Streamlined Approach Aids Environmental Enforcement

It is often said that China has good environmental laws but poor enforcement. At the annual National People's Conference (NPC) meetings in Beijing, which ran through March 16, it became clear that China's leaders are trying to change that. The country's environmental bureaucracy structure is beginning to undergo a profound shift that could lead to greater oversight and enforcement from the top national ministerial level all the way down to local government.

China’s Ministry of Environmental Protection (MEP) has started a pilot reform in 17 provinces, state-level municipalities and autonomous regions to give the MEP a direct line of control over provincial environmental protection bureaus. Likewise, the provincial bureaus will have direct lines to the environmental bureaus below them, at the local level, China’s environment minister, Chen Jining, said at a press briefing on the sidelines of the NPC meetings March 11.
“This is a matter of great significance,” Chen said. “We currently have an environmental management system that is separated into unconnected blocks, and there are many difficulties to overcome that.”

The current system has allowed local governments to interfere with environmental bureaus under their jurisdiction, resulting in poor environmental protection practices and an erosion of the ability of environmental officials to strictly enforce laws, Chen said. “A culture of impunity abounds and it must be reformed,” he said.

The initial pilot program should take about a year to establish, according to Chen, with a full rollout of the system by the end of 2018.

Guangdong provincial Environmental Protection Bureau head Lu Xiulu disclosed March 8 that the country’s economically dynamic southeastern province will be among those implementing reforms in the initial pilot.

In another new measure, local governments are required to report how they fulfilled environmental protection goals last year, and those findings will be given to the NPC Standing Committee next month, Pu Changcheng, a member of the NPC environmental protection committee, said at a press briefing March 11. “In the future, local governments will have to report their environmental performance to the People's Congresses that oversee them and this will become regular policy that should help local governments fulfill their responsibilities,” Pu said.

And the MEP has been working with the Ministry of Finance on a top-down approach for funding environmental protection bureaus, which will include oversight of pay and promotions, taking that role away from local governments, said the ministry's Chen.

The NPC is still in process of drafting environmental tax reforms, “not to increase taxes but to better establish a system that encourages companies to discharge less pollutants,” said Chen. Earlier at the meetings, NPC officials disclosed that environmental tax reforms will be on the agenda for 2016, and it will pursue amendments to the country's Wildlife Protection Law, Marine Environmental Protection Law, Water Pollution Control Law and Nuclear Safety Law.

The MEP announced in February that it was undergoing an internal restructuring that would dissolve the Pollution Prevention and Treatment Department and the Pollution Emissions Total Control Department and replace them with departments directly dealing with air, soil and water pollution. “This reform is very broad. It is not just a matter of two departments becoming three departments, but also involves other reforms, such as convergence regarding environmental impact assessment reforms,” Chen said. “This work is ongoing.”

### 38. Buffett-Backed New-Energy Car Company Takes on Tesla in China

BYD Co., the Warren Buffett-backed Chinese car-and-battery manufacturer, could boost deliveries of electric vehicles by as much as three times this year in its home market, underscoring the rising demand that is prompting Tesla Motors Inc. to step up its expansion.

BYD could sell as many as 150,000 new-energy vehicles this year, compared with the 58,000 it delivered in 2015, Chairman Wang Chuanfu said at a March 29 briefing in Hong Kong. The company surged to a peak in more than five months in intra-day trading in Hong Kong after predicting first-quarter profit may rise more than 50 percent from a year earlier.
China has stepped up the building of charging infrastructure and rolled out incentives to encourage automakers and consumers to switch to electric vehicles as part of a broader initiative to mitigate the toll that rising car ownership is exacting on the environment. Industrywide new-energy car sales surged more than threefold to 331,000 units last year as the government pushes to reach its target of having 5 million of the vehicles on its roads by the end of the decade.

“The Chinese government has more comprehensive policy support on new-energy cars than other governments, leading to the industry’s explosive development last year,” said Wang. “The rapid growth will remain from 2016 to 2018.”

BYD, which counts Buffett's Berkshire Hathaway Inc. as a shareholder, reported full-year net income rose almost sevenfold to 2.82 billion yuan ($433 million) from a year earlier. Its sales of new-energy vehicles, the term China uses to describe electric vehicles and plug-in gasoline-electric autos, jumped three times to 58,000 units last year.

For Tesla, the rising sales of battery-powered cars signal a rising acceptance by consumers for electric cars. The automaker said in February that it has started taking orders for its Model X in China with deliveries to begin in the second quarter, giving customers in the world's largest auto market access to the new sport utility vehicle before it debuts in Europe.

39. World Bank Approves $500 Million to Curb Smog in China

The World Bank has agreed to lend $500 million to China to fund projects that can reduce air pollution in and around Beijing. The projects are tied to renewable energy and pollutant reduction measures as well as for electric and compressed or liquefied natural gas vehicles in the region around the capital, which also includes Tianjin, Hebei and neighboring areas, the Washington-based lender said in a March 23 statement.

The loan is part of a broader plan to finance $1.4 billion for such projects during the next six years, with another $500 million from Huaxia Bank Co. The remainder comes from equity contributions of other institutions, the World Bank said.

China intends to get 15 percent of its energy from renewables and nuclear by 2020, up from 12 percent in 2015.

40. U.S., China Offer New Environmental Goods Staging Proposals

Trade negotiators from the U.S. and China separately introduced new staging proposals aimed at advancing an Environmental Goods Agreement (EGA) March 4 during a three-day negotiating round in Geneva. The goal of the EGA talks is to reduce and ideally eliminate tariffs on a list of more than 650 environmental goods, such as solar panels, bicycles, electric motors and hydraulic turbines.

The proposed U.S. and Chinese schedules of concessions, also known as staging offers, would allow countries to phase in their tariff reductions gradually for certain sensitive product categories.

Last year, China disappointed EGA parties when Beijing said it would not seek to conclude an EGA deal at the World Trade Organization's 10th ministerial meeting in Nairobi, Kenya. This year, participants are optimistic that China's leadership of the 2016 G-20 summit could encourage party leaders to strike a deal at or ahead of the G-20 leaders' summit in September.
In addition to the staging offers, EGA participants discussed process steps to move the negotiations forward and their expectations for a final deal. The agreement would ideally build on commitments undertaken by Asia-Pacific Economic Cooperation (APEC) members to reduce tariffs on a list of 54 environmental goods.

The 17 WTO members involved in the EGA negotiations are: Australia, Canada, China, Chinese Taipei, Costa Rica, the European Union, Hong Kong, Iceland, Israel, Japan, New Zealand, Norway, Singapore, South Korea, Switzerland, Turkey and the U.S.

Geneva trade officials said the next round of EGA negotiations, which will be hosted by Australia, could take place in April or May, although a date has not yet been confirmed.

Participants said there is a need to engage in greater technical negotiations among customs officials and build momentum ahead of the mini-ministerial trade meeting scheduled to take place on the sidelines of the Organization for Economic Cooperation’s July meeting in Paris.

41. VW to Recall 3,877 Cars in India for Excess CO Emissions

German automaker Volkswagen said it will recall 3,877 Vento cars for "inconsistent carbon monoxide emissions" in a test carried out by Pune-based Automotive Research Association of India (ARAI). The company also said it is suspending production and sales of the manual gearbox version with immediate effect. The recall pertains to Vento cars manufactured from April 1, 2015 onwards and those equipped with 1.5 liter diesel engines and manual gearbox.

"Volkswagen India is analyzing the issue and will propose technical measures to ARAI to solve this inconsistency at the earliest. Once approved and confirmed by the competent authorities, the company will implement the measures and resume the production and sales of the relevant vehicle. The same technical measures will also be implemented in the impacted vehicles that are already with customers," the company said in a statement, adding that the latest recall is not connected to the "global nitrogen oxide emissions."

Last year, the company had announced the recall of 323,700 cars manufactured between 2008 and 2015 after ARAI tests found out that nitrogen oxide emission levels from these vehicles exceeded 5-9 times the standard permissible emissions under test conditions.

"The cars announced for recall today would be a part of the cars which were announced for recall last year," a spokesperson of the company told TOI, indicating that the company will aim to fix both the problems simultaneously.

In the latest case, the company claimed that the ARAI observed during the conformity of production (regular periodic tests) that the manual transmission version of Vento 1.5 liter diesel engines showed inconsistencies in the CO emissions that "sometimes" exceeded the threshold limits.

The company clarified that none of these cars contain any emission masking software.

42. Supreme Court Pushing Aggressively Against Diesel Cars in India?

The Supreme Court order banning the registration of vehicles with diesel engines displacing 2 liters and more may cover only the National Capital region, but its impact on buyer sentiment is country-wide, say industry executives. Sales of petrol cars and SUVs in January-February 2016
grew 7% from a year earlier, whereas those of diesel-driven personal vehicles fell 7.3%, industry sources said, citing the ban announced in December and the narrowed gap between the prices of the two fuels as the key reasons. The share of diesel vehicles in overall passenger vehicle sales shrank to 42% in the first two months of this year from 45% in the year-earlier period.

About 4 lakh (400,000) units of diesel vehicles with 2-litre or heavier engines are sold in the country annually, industry experts said. The NCR comprising Delhi and its satellite cities is the biggest automobile market, and absorbs 5-8% of this diesel vehicle supply. Across India, Mahindra & Mahindra has more than 50% share of the market for diesel-run vehicles displacing 2 liters or more, while Toyota has about 20% and Tata Motors less than 5%. Overall, NCR accounts for nearly 12% of passenger vehicle sales in India, with Delhi making up for 7%.

The ban was scheduled to end on March 31st, but the court extended it until further orders. This and the suggestion of an environmental compensation charge on diesel vehicles have worried auto makers at a time when the market has returned to sluggishness after showing some promise. They are unhappy also with the budget announcement to impose an infrastructure cess, where too diesel vehicles attract a higher levy than petrol.

A bench headed by Chief Justice TS Thakur also suggested the levy of a steep environmental compensation charge on diesel vehicles as a possible condition to lift the ban. Any decision on imposing the environmental compensation charge will further hurt an industry that is already hit by the recently introduced infrastructure cess and lackluster sales and may affect employment generation, industry leaders warned.

The CJI suggested two ways out for car makers.

Either continue the ban on fresh registration for six months or they agree to the environment compensatory charge of 30% that would reduce the running expenses gap between petrol and diesel cars and act as a disincentive to buy diesel vehicles, which are considered to be more polluting.

"We don't want to target any one. But this is your city and the air you breathe in comes from the same environment," the CJI said. Car makers, who were represented by a battery of senior advocates such as Gopal Subramanian, CA Sundaram, CS Vaidyanathan and P Chidambaram, objected to the suggestion saying the industry was already facing sluggish demand. Besides, the
budget had slapped an infrastructure cess on them ranging from 1% to 4%, they said, and claimed that diesel vehicles were not necessarily more polluting than petrol vehicles.

Amicus curiae Aparajita Singh cited an Environment Pollution Control Authority report to claim that the court's efforts to clean up the city air, by cracking down on fresh registration of large diesel vehicles as also levying an environment compensatory charge on commercial vehicles to deter them from entering the city, had worked.

To be sure, sales of diesel vehicles have been on the decline even before the court imposed the ban in NCR to test its impact on the quality of air. In the financial year ended in March 2015, diesel car sales dropped 5.7% from the previous year, while those of petrol cars rose 12.35%. Diesel has been increasingly moving out of the radar of Indian buyers ever since the government removed subsidy on the fuel, reducing the price gap with petrol.

In 2011, diesel was 35% cheaper than petrol, while now the difference is just 19%. Auto makers had invested heavily in diesel technology in India and made changes to product mix to benefit from customer preference to diesel when that fuel was sharply cheaper.

Now, with buyer preference again shifting to petrol and authorities discouraging the sale of diesel vehicles, the most impacted are luxury brands such as Mercedes-Benz, BMW and Audi. Mahindra and Toyota are also at the receiving end. These companies are reworking on production and supply strategies.

43. Supreme Court Mulls Congestion Cess on New Vehicles

After jolting the sluggish automobile industry by proposing a heavy green cess on fast-selling diesel cars, the Supreme Court had automakers pushing the panic button by proposing a congestion charge on all new car purchases. The suggestion came after the court rejected the complaint of heavy and medium truck manufacturers that registration authorities in the National Capital Region had misinterpreted the apex court's order banning sale of diesel cars and SUVs with engine capacity of 2000 cc or more and were refusing to register trucks and buses.

A bench of Chief Justice T S Thakur and Justices A K Sikri and R Banumathi sternly rejected the plea and said, "No trucks will be registered for now. The city is choked with vehicles. Where is the space for parking these cars and trucks? There should be a congestion charge levied with purchase of every new vehicle. It should be levied in the Supreme Court premises also where advocates bring big cars in large numbers choking the parking space." The court also extended the deadline for conversion of all taxis into CNG mode by another month that would allow some time to big aggregators like Ola and Uber.

44. No Fitness Nod To Old Diesel Vehicles, Ghaziabad Told

The additional transport commissioner (western region) has issued directions to the Ghaziabad regional transport department that only No-Objection Certificates (NOCs) are to be issued to diesel vehicles older than 10 years and petrol vehicles older than 15 years in the areas falling under NCR. The direction means that vehicles that are past this date cannot be issued fitness renewal certificates.

The decision comes after an incident where several transporters approached the transport department at Noida and placed before officials two instances where work for checking fitness
and issuing fitness renewal certificates was undertaken by Ghaziabad transport department office for two trucks older than 10 years.

The transporters had alleged that the transport department had flouted the ban on fitness renewal for older vehicles and that their vehicles should also be allowed fitness certificates.

The communication issued by the additional transport commissioner (western region), RK Upadhyay, was dated January 5 this year, but was received at the Ghaziabad transport office only on March 8, after the recent goof-up.

“Following the directions, there will be no fitness certificate issued to vehicles as specified. They will only be allowed to take NOCs and get their vehicles registered out of NCR areas,” said Mayank Jyoti, regional transport officer (RTO).

In a bid to reduce air pollution, the National Green Tribunal (NGT) had ordered in April last year that diesel vehicles more than 10 years old and petrol vehicles more than 15 years old will not be allowed registration in NCR areas.

In neighboring Noida, transport department officials said that they were allowing fitness of vehicles only for the purpose of providing NOCs. “We have implemented the orders last year itself. We are allowing fitness certificate only for vehicles that take the NOC and move out of the region,” said Rachna Yaduvanshi.

Meanwhile, in order to further discourage use of diesel vehicles, the RTO has also ordered that the neighboring Hapur district, which falls under Ghaziabad transport region, register only those autos that run on CNG fuel and no new registration or permits of autos or tempos that run on diesel be allowed. “Apart from Hapur, the same condition would apply to Khurja center falling under Bulandshahr district. These areas now have availability of CNG fuel,” Jyoti added.

45. Japan Wants Fuel-Cell Car, Hydrogen Station Boom by 2020

Japan is aiming to have 40,000 hydrogen-powered cars on its roads by 2020, with plans for a 20-fold expansion to 800,000 by 2030, according to a report released by the Ministry of Economy, Trade and Industry on March 16th outlining the future use of hydrogen and fuel cells.

The country, whose prime minister has vowed to turn it into a “hydrogen society” as a way to diversify energy sources and cut carbon dioxide emissions, currently has about 400 fuel cell vehicles and about 80 hydrogen stations either operating or soon to operate, according to the report, which was revised from an earlier version released in June 2014.

Japan also plans to double the number of hydrogen stations to about 160 by the time the fiscal year ends in March 2021, boosting that to 320 in the following five years. Japan's fiscal year begins in April.

Honda Motor Co. announced last week that it is beginning sales of its Clarity Fuel Cell sedan in Japan. Honda, Toyota Motor Corp. and Hyundai Motor Co. are championing fuel cell vehicles to eliminate tailpipe emissions, while offering range and refueling times similar to internal-combustion engines.
As part of the hydrogen push, Japan also has been promoting home fuel cells that are capable of producing electricity and hot water, with a goal of 5.3 million units by 2030. Currently, the number of installations stands at about 150,000, according to the ministry.

The price of a polymer electrolyte fuel cell should be reduced to 800,000 yen ($7,000) by 2019, from a current subsidized 1.42 million yen, according to the document. For a solid oxide fuel cell, the price needs to be cut to 1 million yen by 2021, from 1.77 million yen now.

46. Toyota Leads Hydrogen Supply Chain Test Project

Toyota Motor Corp. and partners will begin a project to use hydrogen produced from renewable energy to power forklifts to test the feasibility of a low-carbon hydrogen supply chain. Electricity generated at a wind-power plant in Yokohama City near Tokyo will be used to separate hydrogen and oxygen from water, the partners including Toshiba Corp. and Iwatani Corp. said in a statement March 14. The hydrogen will be transported in a hydrogen fueling truck to a factory, a vegetable and fruit market, and two warehouses to be used for fuel cell-powered forklifts, according to the statement. “This low-carbon hydrogen supply chain is expected to reduce CO2 emissions by at least 80 percent compared with a supply chain using forklifts powered by gasoline or grid electricity,” the partners said in the statement. Japan plans to build a “hydrogen-based society” to encourage the use of fuel cells to power cars, homes and office buildings. Trial operations will begin this fall with two forklifts, to be increased to 12 for the fiscal year beginning April 2017, the partners said. Yokohama City, Kawasaki City, and Kanagawa Prefecture will also take part in the pilot project, which is supported by Japan's Ministry of the Environment.

Mitsubishi's Existence at Risk As Fraud Case Widens

For the second time in about a decade, Mitsubishi Motors Corp. faces a scandal that could affect the company's existence. The Japanese automaker has improperly tested the fuel economy of its cars for the past quarter century, widening the scope of misconduct that executives initially said dated back to 2002.

The Mitsubishi board has formed a panel of three ex-prosecutors to investigate for about three months. Until then, customers, investors and minicar partner Nissan Motor Co. may be left waiting for information about the number of affected models and details of compensation. "I'm taking this as a case that could affect our company's existence," President Tetsuro Aikawa told reporters during a press conference Tuesday. "My mission is to solve the issue."

The deepening crisis is the worst since the automaker covered up defective axles that led wheels to detach in fatal accidents, prompting multiple bailouts from Mitsubishi Group companies.

Mitsubishi hasn't decided how it will compensate customers, Aikawa said. The company is in discussions about reimbursing Nissan, which was supplied about three-quarters of the 625,000 minicars that were improperly tested and relied on manipulated data. Nissan has since voluntarily stopped sales of the Japan-only models, called Dayz and Dayz Roox.

The EPA and the California Air Resources Board also announced an investigation of whether models sold in the U.S. meet fuel economy regulations. The EPA has instructed Mitsubishi to provide additional information on vehicles sold in the U.S. and will direct the company to conduct additional testing, EPA spokeswoman Julia Valentine said in a statement in Washington.
Japan's transport ministry asked Mitsubishi to re-submit findings from its investigation of improper testing methods by May 11. An initial report that the company provided the regulator ahead of a deadline was insufficient, a ministry official said.

In addition to potential payouts to customers and Nissan, Mitsubishi may have to pay back government tax rebates that its minicars shouldn't have been eligible for, Ryugo Nakao, an executive vice president, has said.

Nissan first uncovered fuel economy discrepancies when working on development for the next generation of the minicars. CEO Carlos Ghosn said that Nissan will decide on the future of the partnership after further verification.

Mitsubishi had set stretch fuel economy goals for its engineers to achieve. Aikawa, 62, and other executives attended meetings where the company raised targets for the Nissan Dayz, Dayz Roox and Mitsubishi eK Wagon and eK Space minicars, Nakao said.

Japan’s government is forming a task force to take steps that would prevent irregularities in vehicle testing, Transport Minister Keiichi Ishii told reporters after a cabinet meeting on April 25th in Tokyo. Manipulation of fuel-efficiency tests is "extremely serious," he said.

47. Emission Fiasco: Volkswagen Faces Searching Questions in NGT

The Indian arm of German auto major Volkswagen, which had denied installing "cheat device" in their cars, faced searching questions from the National Green Tribunal which came down heavily on it for violation of emission norms in the country.

"You announced a recall of 323,700 lakh vehicles in December last year. Why have you not recalled these vehicles till date? What are you doing to rectify the problem in your vehicles," a bench, comprising Justice M S Nambiar and Expert Member B S Sajwan, asked the automobile giant.

The green panel asked Volkswagen to file an affidavit by May 19 stating what action it was planning to take with regard to vehicles allegedly fitted with the disputed software.

It also quizzed the automobile company over its earlier submission which had stated that "on road" emissions from its cars were 1.1 times to 2.6 times higher than applicable BS-IV norms.

The counsel appearing for the auto major told the tribunal that recall of vehicles is a long procedure and it would take some time. He also said the company was developing a new software and would submit a proposal to Automotive Research Association of India (ARAI) in this regard.

When the bench asked the company whether the new vehicles fitted with EA 189 diesel engines were equipped with the controversial software or not the counsel for the company sought more time to seek instructions.

Advocate Sanjeev Ailawadi, appearing for one of the petitioners, said that the company has been selling faulty cars since 2010 and till date they have not done anything to rectify the problem which is causing health hazards. "Various lawsuits have been filed against Volkswagen. Now the company is going for out of the court settlement with the government agencies and private petitioners. They have neither recalled nor made any modification in the engines," he said.
The matter is listed for next hearing on May 19.

The Tribunal had last year issued notices to the Centre, Volkswagen and ARAI on a plea by Delhi residents and a school teacher seeking a ban on sale of its vehicles for alleged violation of emission norms.

On January 6, the green panel had directed the German automobile major not to sell any diesel vehicle in India fitted with "cheat device" and give an undertaking in this regard.

48. CSE, ICCT Call for Tighter and Random Testing of Cars in India

In the aftermath of the Volkswagen scandal, new tests on diesel vehicles across models by government agencies in the UK, France and Germany have revealed that emissions of oxides of nitrogen (NOx) in these automobiles were far higher than prescribed standards. The tests were conducted on Euro V and Euro VI vehicles. In the UK, 37 vehicle types were tested while Germany ran tests on 56 vehicles over six months. "Tests have found higher levels of NOx emissions in test-track and real-world driving conditions than in the laboratory for all manufacturers' vehicles, with results varying significantly between different makes," a UK report said.

According to the International Council on Clean Transportation, the agency behind the VW expose, a review of the tests conducted by the German ministry for transport found on-road NOx emissions from certain cars to be up to 18 times higher than the norm. The European tests assume significance in the light of the ongoing debate in the Supreme Court on the issue of diesel emissions in Delhi. Researchers in the Delhi-based Centre for Science and Environment (CSE) claim that while the US, Germany, France, the UK, China and South Korea have verified the on-road emissions of diesel cars after the Volkswagen emissions scandal last year, India has not done anything except for a "secret probe" into the vehicle models manufactured by the German carmaker.

CSE shared the UK government's recent test results with TOI, which reveal that, unlike Volkswagen, the vehicles tested did not use any "test cycle manipulation" but emitted more NOx than they were supposed to.

"Existing laboratory tests designed to ensure that emission limits are met have been shown to be inadequate. However we have already secured a tough new 'real driving emissions' test in EU legislation. From next year, vehicles will have to meet emissions limits in real driving conditions across a wide range of typical operating temperatures," the UK report said.

Anup Bandivadekar, program director (India) at the International Council on Clean Transportation (ICCT) said, "Poor on-road performance of Euro 56 diesel cars is contributing to poor air quality across European cities. India could avoid Europe's diesel folly by making alternatives to diesel passenger cars more attractive wherever possible -or by contrast making diesel car purchase unattractive -adopting the world harmonized light duty testing procedure (WLTP) as well as real-driving emissions (RDE) tests for upcoming BS VI norms and instituting a rigorous in-service testing program that selects well maintained vehicles at random and tests their on-road emissions performance."

CSE researchers who have been tracking the Volkswagen controversy said India should at least test on-road emissions of diesel vehicles regularly to regulate them accordingly. "Introduce in-service compliance regulations for vehicles. Emissions cannot be allowed to deteriorate beyond the official limit when vehicles are still in use. Authorities will have to do regular tests like the
certification test on a limited sample of vehicles to ensure compliance," said Anumita Roy Chowdhury, head of CSE's clean air campaign. She added that in case of non-compliance, it should be made mandatory for the companies to recall the vehicles and pay penalty for the lapse.

49. Hot Weather Shoots Up Ozone Pollution in Delhi

Levels of tiny pollution particles (PM 2.5) are relatively lower now than in winter. But there is no relief from dirty, toxic air in the city. With the summer heat rising, ozone (O3) levels are breaching the safe standard at several locations in the city.

O3 levels were the highest on Sunday in all of April, according to monitoring by System of Air Quality and Weather Forecasting and Research (SAFAR) under the ministry of earth sciences. O3 was also the lead pollutant along with PM 2.5 on Monday in Delhi’s air quality index (AQI) assessed by the Central Pollution Control Board (CPCB).

This despite the ongoing odd-even scheme to limit emissions from private vehicles every day. Experts feel Delhi needs stronger, long term pollution curbing measures to bring down this summer pollutant as well as address winter smog.

"High temperatures have a direct correlation with ozone pollution. High nitrogen dioxide (NO2) emissions reacting with volatile organic compounds (VOCs) in high temperature leads to ozone formation. We need to study the emissions to understand why levels are high. But the main sources are automobiles, thermal power plants, coal burning and even biomass burning," said Manju Mohan, professor, Centre for Atmospheric Sciences at IIT Delhi who conducted a study on O3 emissions in the city. "Land use change leading to urban heat island (UHI) can also increase local temperature and in turn lead to ozone formation," she added. UHI is any area that is significantly warmer compared to surrounding areas, mainly due to concretization and lack of green cover.

Scientists at the Delhi Pollution Control Committee (DPCC) said it's a "summer problem" mainly linked to vehicular emissions. "We are not sure what can be done immediately to bring it down," they said.

According to the America Lung Association, exposure to O3 can trigger immediate health impacts like shortness of breath, wheezing and coughing, asthma attacks, increased risk of respiratory infections, pulmonary inflammation and many others. Among long term impacts are harm to the central nervous system, chronic obstructive pulmonary disease (COPD), reproductive and developmental harm among others. Dr TK Joshi from the Centre for Occupational and Environmental Health (COEH) said O3 is a "highly reactive gas compared to nitrogen dioxide. Methyl isocyanate (MIC) that was released in the Bhopal disaster for instance is also a very reactive gas. It's extremely harmful for children because their lungs are still developing. My advice is to move away or avoid high traffic areas for people who are already vulnerable." Joshi who was consulted by Delhi government for odd-even too said "I was in support of the odd-even scheme. There is no option but to reduce traffic emissions," he said.

Anumita Roy Chowdhury, head of Centre for Science and Environment (CSE's) clean air campaign said high O3 levels indicate that the strategy should be control gases and not just natural pollution particles like dust. "The weather now is just right for ozone to form. NOx from tailpipes are contributing to formation of ozone. While O3 may be created where there is pollution already like heavy traffic areas, it can dissipate and travel to less polluted areas too. Even the west has suffered O3 pollution. They are trying hard to control NOx," she said.
Mohan said the recommendation would be to cut NO2 emissions from transport sector and power plants.

50. Diesel Ban: Mercedes Benz Proposes To Shift Its Vehicles to Bio-Diesel

To beat the Supreme Court ban on large diesel vehicles, global auto major Mercedes Benz has proposed to shift its diesel cars and other vehicles in India to the environment friendly bio-diesel. "Mercedes has given me a letter that they can use 100% bio-diesel in their cars and buses," Road transport and highways minister Nitin Gadkari said.

"Mercedes India chief has told me that the standards which we have prescribed for bio-diesel can be easily used to power their motors," he added.

The Supreme Court in December last year had banned registration of diesel SUVs and high-end vehicles with engine capacity of over 2000 cc citing pollution diesel vehicles emitted.

As per a recent government draft notification on use of bi-diesel, the newly manufactured vehicles fitted with compression ignition engine compatible to run on diesel or mixture of bi-diesel up to 100% bio-diesel will be type approved as per the prevailing diesel emission standards.

However, the final notification from the road transport and highways ministry on 100% use of bio-diesel is yet to come.

Gadkari said that major automobile and construction equipment companies including JCB too have shown their willingness to use bio-diesel which would be a major step in minimizing high pollution levels.

"We are going to issue the notification in this regard soon. I am already in talks with petroleum ministry on how to make bio-diesel available at petrol pumps," he said.

The National Policy on Biofuels had proposed a 20% blending ratio for both biodiesel and ethanol by 2017. However, Gadkari's ministry decided to allow 100% bio-diesel for vehicles citing its low pollution level and less reliance on imported crude fuel.

With rising pollution impacting public health and becoming a hotly debated national issue, India has been pushing for cleaner fuel. Biodiesel has several advantages over traditional fuels. It is renewable, biodegradable and emits less carbon dioxide. It can also easily take the place of conventional diesel without the need for auto makers to modify engines. Waste cooking oil, seeds of jatropha, Soybean along with sugarcane bagasse are the sources of bio-diesel.

51. China Easing Registration for Electric, Hybrid Cars

China is promoting the purchase of electric and hybrid vehicles by easing restrictions on obtaining license plates for those cars when compared to higher polluting vehicles, the Ministry of Public Security said on April 18th. Some cities have lottery systems to obtain license plates, and high fees to register them. But Beijing, Shanghai and Shenzhen are among cities that have waived those lottery and fee requirements for all-electric and hybrid owners. The State Council said some 330,000 electric vehicles and 250,000 hybrid vehicles were registered in the country by the end of 2015, a far cry from the more than 5 million such vehicles China wants to have on its roads by the end of 2020. The ministry issued a call for citizens to vote through April 30th on styles of license
plates for electric and hybrid vehicles, to help officials differentiate them for traffic management policies being put in place in cities like Beijing, which experience heavy smog.

52. Chinese Province Considers Air Pollution Motivation Plan

Top officials in Zhengzhou, capital of Henan province in central China, could be liable for fines of up to 500,000 yuan ($77,000) if they fail to meet targets for annual average concentration levels of particulate matter, according to an April 5th report on the Zhengzhou Environmental Protection Bureau website.

Alternatively, officials would be rewarded the same amount if they meet the targets for the administrative areas they govern.

China has been putting into place more measures for evaluating local officials not only on their economic performance, but also their environmental performance. This is the first known call to penalize officials for failing to meet targets related to difficult-to-control and diffuse air pollution problems.

Zhengzhou had the fifth-worst air quality in 2015 and was among the top 10 worst cities for air quality every month that year except November, according to the Ministry of Environmental Protection. The Henan provincial government set a target for the capital last year for average annual concentrations of 157 micrograms for large particulate matter (PM 10) and 85 micrograms for small particulate matter (PM 2.5).

Under the new proposal, they must meet targets below 79 micrograms per cubic meter for PM 2.5 and below 150 per cubic meter for PM 10.

Since China implemented an air pollution control action plan toward the end of 2013, there have been some signs of progress reducing pollutants, particularly harmful PM 2.5 levels, Chen Jining, head of the Ministry of Environmental Protection, said at an annual press conference during the National People's Congress meetings in Beijing in early March. Chen said annual average intensity of PM 2.5 in 74 major cities was down 14 percent compared to the year before in 2015, with an average of 55 micrograms per cubic meter for those cities.

Shenzhen, a major city in South China's Guangdong province, for example, has been piloting a system for the past few years for ranking officials under 100 different criteria, with 14 of those criteria looking at environmental performance. Previously, Hubei and Shandong provinces implemented measures to reward officials for meeting air pollution targets, but those policies did not include fines.

The Zhengzhou policy also states that counties that fail air quality goals for two months must implement measures to reduce pollution, and if they fail three consecutive months, they will be ordered to halt production at all air pollution sources in their jurisdiction.

LATIN AMERICA

53. Latin America, Caribbean Countries Back Climate Action

Latin American and Caribbean environment ministers agreed to fast-track and coordinate public policy in areas ranging from climate change and air quality to safe management of waste and chemicals. In a document signed at a forum in Cartagena, Colombia, environment ministers from
33 countries agreed to accelerate their climate change adaptation and mitigation efforts and their financing of the implementation of the Paris Agreement, including transfer of climate technologies and capacity building, according to a March 31 statement from the United Nations Environment Programme (UNEP), which co-hosted the forum. The Cartagena Declaration also calls for more financing to reduce emissions of short-lived climate pollutants, including black carbon, a major component of soot from fossil fuel combustion; methane; hydrofluorocarbons; and ground-level ozone. The ministers also agreed to establish a regional network on chemicals and waste.

54. Sao Paulo Begins Hydrogen-Powered Bus Service

Brazil's first three hydrogen-powered buses have begun full-time commercial circulation in Sao Paulo, the country's largest city. The buses, which emit only water vapor, use a hydrogen fuel-cell propulsion system to power electric motors, cells that are resupplied with hydrogen at a station installed as part of the project. The Sao Paulo Urban Transport Co. (EMTU), an arm of the state's Metropolitan Transport Secretariat, received the buses for tests last June through a project financed by the United Nations' Global Environment Facility and Brazil's Mines and Energy Ministry. Sao Paulo will run economic feasibility tests on the buses, which cost $1 million each, with hopes that private companies will have 20 more in circulation in Sao Paulo within a decade, EMTU Planning Manager Ivan Carlos Regina told the press. Only three other countries—Canada, Germany and the U.S.—have such buses in circulation. Home to 20 million people, Sao Paulo has the world's largest urban bus fleet and the country's worst urban air pollution.

AFRICA

55. Botswana Concerned about Air Pollution Health Hazard

The deputy permanent secretary in the Ministry of Minerals, Energy and Water Resources, Dr Obolokile Obakeng said there is a rising concern on the significant health threat posed by sulfur emissions. He said this at the official opening of a two day lower sulfur emissions workshop which was organized by the Department of Energy and the United Nation Environment Program (UNEP).

He said vehicle emissions pose a serious threat to human health and well-being, especially in urban and peri-urban areas where the human population is too concentrated.

He added that there are significant social and economic benefits to be gained by curtailing the health impacts resulting from intense exposure to sulfur emissions.

Dr Obakeng noted that, as a country, Botswana has been making strides in introducing cleaner fuels and the government only plays a facilitative role in ensuring sufficient supply of liquid fuels into the country. He said the direct procurement of fuels for sale is undertaken by multinational oil companies and some citizen oil companies.

He however said the supply and availability of cleaner fuels is dependent on the readiness and willingness of oil companies adding that the government will therefore continue to play a facilitative role in ensuring availability of such fuels in the country.

UNEP's program officer, Ms. Jane Akumu said the sulfur emissions are a health and environment hazard adding that sulfur, which is naturally found in crude oil when highly concentrated in diesel results in high tailpipe Particulate Matter and Sulfur Dioxide (SO2) emissions. "This condition
causes diseases such as asthma, lung cancer and other respiratory diseases," Ms. Akumu continued to say.

She said according to World Health Organization, 2011 research, particulate matter emissions affects people more than any other pollutant in the world contributing to at least 3.7 million premature deaths annually.

She said by implementing on low sulfur fuels in Botswana the country will improve the air quality and protect the environment.

A representative from the Ministry of Transport and Communications, Mr. Kingsley Lesole said there is congestion of motor vehicles in cities saying efforts to curb air pollution by motor vehicles should be maintained. He said that encouraging stakeholders to maintain their vehicles will reduce the risk of chronic diseases such as Cancer, Asthma and others, fuel consumption, medical costs and add value to their vehicles hence enhancing cleaner environment.

Adding to the presentation on traffic emissions monitoring in Botswana, Mr. Moabi Mmolawa of Department of Waste Management and Pollution Control said that there is need for environmental information database and stakeholders must collaborate to work together to fight the problem.

MIDDLE EAST

56. Israel Readies New National Air Pollution Plan

Air pollution kills three times as many Israelis each year as road accidents, crime and terror combined, Environmental Protection Minister Avi Gabbay said February 29, announcing the impending release of a new national plan to combat air pollution. “Air pollution kills and we're determined to deal with it,” he told the 11th annual Environment 2050 business forum in Tel Aviv, calling air quality improvement the ministry's “main goal,” even at the expense of industrial development.

Although he did not share details of the new plan, Gabbay’s comments were the ministry’s first formal admission that regulatory limits on polluting emissions will not be sufficient to meet government goals and industry could be required to make structural changes.

Singling out the need for more government intervention in the northern port city of Haifa—a focus of regulatory friction and anti-pollution protests in recent months—Gabbay said he intends to “dilute” Israel's petrochemical industry by moving some existing facilities from Haifa Bay to less populated locations.

There is “no question” that the nation's petrochemicals industry is “too big” for the city, he said, questioning whether Israel should operate any oil refineries at all.

In response, Shlomi Basson, deputy director-general for environmental quality and safety at Israel's Oil Refineries Ltd., said during a later session that his company has invested more than 1.2 billion shekels ($308 million) to reduce emission levels by “hundreds of percents” in the past three years and “environmental considerations are now an integral part of all our business planning.
“The situation today is not what it once was,” he continued to broad applause, questioning “why the public, whose pressure has become an excessive factor in government decision-making, doesn't take on transport. They're a larger source of pollution, but we're an easier target.”

Shraga Brosh, president of the Israel Manufacturers Association, said total industrial emissions now account for 21 percent of Israel’s air pollution—compared to 51 percent from electricity generation and 28 percent from transport.

“It is clear to all industrialists today that we need to deal with pollution. And we are,” he said, despite “endless regulations, approvals and shutdowns that never stop.”

Shuli Nezer, the ministry’s senior deputy director-general for industry, said factory emissions have dropped in recent years, “significantly improving air and water quality.” By contrast, the public has “totally lost faith” in the government and its dealings with industry, she said, “preventing any productive discussion of the issues.” The “public debate, which has even become violent in recent months, is not necessarily based on facts,” she concluded.

57. Israel MoEP Enforcing Vehicle Exclusion Rules; To Retrofit 700 Diesel Trucks

As part the Israeli Ministry of Environmental Protection’s (MoEP’s) action plan to reduce pollution in Haifa Bay, Israel Police are actively enforcing exclusion rules that bar heavy vehicles in downtown Haifa Bay at certain times of the day.

Data from the Haifa municipality shows that until January 2016, some 600 heavy vehicles (more than 12 tons) would be on the roads in downtown Haifa every day during rush hour. However, since Israel Police began actively enforcing rules, that number has fallen to 200 vehicles, a 60% decrease. The MoEP expects the number of heavy vehicles in the area to drop even further, as police continue to enforce the rules. As of March 14, 2016, they already handed out 192 tickets to violators, totaling NIS 96,000 (US$24,768) in fines.

The traffic prohibitions are part of the creation of Israel’s first low-emission zone, an area restricted to polluting diesel vehicles. This is within the framework of the Haifa Bay Action Plan to Reduce Pollution and Environmental Risks.

MoEP is leading a dramatic process that for the first time ever, is shutting polluting vehicles out of an Israeli city. The move to reduce the number of polluting trucks on the road integrates with a series of other measures to reduce vehicular air pollution in Haifa Bay, such as the massive installation of vapor recovery systems in gas stations, the move to convert buses and garbage trucks to natural gas, and more. All of these measures will lead to the goal to turn the city of Haifa into a low-emissions zone that will be restricted to polluting vehicles. Such areas are operational in more than 200 cities across Europe that suffer from air pollution.

According to the MoEP, Haifa Bay is one of Israel’s air pollution hotspots due to its high concentration of industrial plants, including an oil refinery and chemical and petrochemical industries, alongside high transport loads and port activities.

The situation is exacerbated by the physical proximity of a wide range of hazardous material sources—including an ammonia tank and fuel farms—to population centers, and by topographic and climatic conditions that aggravate air pollutant dispersion. As a result, pollutant emissions and hazardous material risks threaten a population of more than half a million residents living in a 165 square kilometer metropolitan area.
The Haifa region began air quality monitoring some 30 years ago; the metropolitan area now has the densest air quality monitoring network in Israel with 27 continuous monitoring stations that measure criteria pollutants including sulfur oxides, nitrogen oxides, ozone, particulates and more.

Based on the results of monitoring and sampling, MoEP initiated an air pollution reduction action plan for Haifa Bay in February 2008. Implementation of best available technologies (BAT) led to a 65% decrease in NMVOC emissions between 2009 and 2015.

However, in light of the environmental and health data still being collected, and in accordance with the precautionary principle, MoEP decided that additional steps are necessary to reduce pollutant emissions to the environment significantly while at the same time expanding monitoring and increasing epidemiological research on air pollution-related mortality and morbidity in Haifa Bay. MoEP thus launched a new environmental action plan for Haifa Bay in 2015.

The action plan sets regional targets for the reduction of air pollutant emissions from industrial sources in Haifa Bay and calls for reducing NMVOC emissions by a further 48% by 2018 relative to emissions in 2014.

A number of the measures target the stationary industrial sources. However, vehicles in Haifa Bay contribute more than half of NOx emissions; a quarter of NMVOC emissions; and a quarter of PM2.5 emissions in the region. Diesel vehicles, while responsible for only 20% of the kilometers traveled, contribute 75% of the fine particles emitted by transportation.

The action plan is targeting making Haifa the first city in Israel that is free of polluting diesel smoke. Measures to achieve this include:

- Establishing Israel’s first “Low Emission Zone” to restrict the entry of diesel vehicles unless equipped with particulate filters.
- Launching a pilot project for at least 30 public transport buses powered by natural gas, including the maintenance and fueling infrastructure.
- Promoting the movement of trucks in Haifa’s Carmel Tunnels by means of lower tariffs in order to minimize truck traffic in the city’s most densely populated area, thereby reducing population exposure to pollution and noise by 97%.
- Supporting the purchase of 22 new trucks powered by natural gas and installing about 12 particulate filters in the rest of the diesel truck fleet, thus making Haifa the first city in Israel to operate a low-pollution garbage collection fleet.
- Supporting the operation of 500 electric taxis through financial incentives.
- Providing incentives and support for the installation of particulate filters in diesel vehicles (especially trucks and buses) in Haifa Bay.

Related specifically to that last item, the MoEP published a tender on 7 March to select car repair shops in Haifa Bay that will be authorized to install diesel particulate filters in heavy vehicles. The MoEP will fund the installation of these filters in 700 heavy vehicles, at a cost of NIS 11 million (US$2.8 million).
Owners of diesel vehicles that want to have the cost of the installation covered by the ministry will have to get it done at an authorized shop, which will receive compensation from the MoEP. Garages have until 4 May 2016 to submit proposals.

**GENERAL**

58. Atmospheric Carbon Dioxide Levels Are Showing a Startling Increase

Atmospheric carbon dioxide concentrations have spiked more in the period from February 2015 to February 2016 than in any other comparable period dating back to 1959, according to a scientist with the National Oceanic and Atmospheric Administration’s Earth System Research Laboratory. The change in average concentrations from February of last year to February of this year was 3.76 parts per million at the storied Mauna Loa Observatory in Hawaii, leaving the concentration at 404.02 parts per million for February, based on preliminary data.

Pieter Tans, lead scientist of NOAA’s Global Greenhouse Gas Reference Network, confirmed that the increase, reported previously by New Scientist, represented a record year-over-year growth for Mauna Loa. He also said that in addition to the stark rise in carbon dioxide levels over the past year, researchers have now observed four straight years of increases of more than 2 parts per million in the atmosphere.

“We’ve never seen that,” Tans said. “That’s unprecedented.”

Indeed, the average annual increase during 2015, of 3.05 parts per million of carbon dioxide at Mauna Loa, was also the highest in the record, according to NOAA — exceeding the previous record of 2.93 parts per million in 1998, which was also a strong El Nino year.

Pre-industrial levels of carbon dioxide were just 280 parts per million, rather than over 400 right now — and when the measurement record began at Mauna Loa in the late 1950s, were below 320 parts per million. So we have come a very long way, and very fast.

Tans said the reason is very clear: Rates of fossil fuel burning remain at historically high levels, releasing 10 billion metric tons of carbon into the atmosphere annually. “The emissions are at a record high, therefore the growth rate of atmospheric CO2 is also at a record high,” he said.
However, there also appears to be a role for the El Niño phenomenon in the records this year. “CO2 tends to rise much faster during and just following El Niño events,” wrote Ralph Keeling, director of the Scripps Institution of Oceanography carbon dioxide program and son of Charles David Keeling (after whom the iconic graph of rising greenhouse gas concentrations is named), last October. At the time, Keeling forecast that because of the current El Nino event, we would probably never see CO2 levels decline below 400 again “in our lifetimes.”

In that post, Keeling also explained why CO2 goes up so much during El Nino. It’s because of the way the phenomenon tends to drive droughts across the tropics, which in turn leads forests, like those in Indonesia, to lose carbon in wildfires — which happened at a massive scale in 2015. Drought also stunts forest growth, which leads to less carbon dioxide removal from the atmosphere, Keeling wrote.

“The loss of carbon from tropical forests in El Niño years is temporary as the forests tend to regrow in normal years, building back their biomass and sucking CO2 out of the air in the process,” Keeling concluded. “But the eventual recovery from this El Niño won’t bring us back below 400 ppm, because its impact will be dwarfed by the global consumption of fossil fuels, pushing CO2 levels ever higher.”

Of late, the growth rate for carbon dioxide concentrations in the atmosphere has been around 2.2 parts per million per year.

Greenhouse gas concentrations in the atmosphere fluctuate over the course of each year, forming a classic “saw-toothed curve” (seen above), due to the way that some parts of the Earth’s system (like trees and plants) pull more carbon out of the air during the northern hemisphere spring. That means that the level in February of this year, 404 parts per million as measured at Mauna Loa, will decline somewhat over the coming months. But overall, despite these fluctuations, the trend has been steadily upward.

59. February Breaks Global Temperature Records by 'Shocking' Amount

February smashed a century of global temperature records by “stunning” margin, according to data released by NASA. The unprecedented leap led scientists, usually wary of highlighting a single month’s temperature, to label the new record a “shocker” and warn of a “climate emergency”.

(Earth System Research Laboratory, NOAA)
The NASA data shows the average global surface temperature in February was 1.35°C warmer than the average temperature for the month between 1951-1980, a far bigger margin than ever seen before. The previous record, set just one month earlier in January, was 1.15°C above the long-term average for that month.

60. Bunkerers Join in Concerns over Global Sulfur Regulations

The International Bunker Industry Association (IBIA) has agreed to partner with the Trident Alliance to raise mutual concerns about the potential for uneven enforcement of the worldwide cap on fuel sulfur content, due to take effect in 2020.

There is a growing debate in the industry over whether the 0.5 percent cap should be postponed until 2025; the International Chamber of Shipping is working with refiners to meet the 2020 target, under the assumption that the IMO will choose not to push back implementation. Whether it does or not, the EU is pushing ahead with equivalent low-sulfur requirements out to the 200-nm line, and has its own stringent enforcement framework in place.

Trident says that uniform enforcement is important, and that it will not be easy to achieve. “The 0.1% sulfur limit in Emission Control Areas has now been in place for over a year, and still significant gaps in enforcement remain. (See story above.) However, the enforcement challenges of the ECA zones pale in comparison to what authorities will face at the implementation of the Global Sulfur Cap. Given how critical it is for both environment and business, this challenge cannot be shied away from no matter how difficult it may be to resolve”, said Anna Larsson, Chair of the Trident Alliance.

IBIA is concerned by the fact that flag states are tasked with enforcement under the current IMO regulation, and “believe[s] that there needs to be more clarity about the legal framework and the areas of jurisdiction,” said Peter Hall, CEO of IBIA. Trident and IBIA intend to promote full compliance worldwide, ensuring that rule-abiding ship operators are not at a disadvantage to less scrupulous operators using cheaper, higher sulfur bunkers, they say.

“If speaking with a united voice we can press for transparent and robust enforcement of sulfur regulations, which will address those that try to evade the system rather than penalize minor transgressions,” said Hall.

61. WHO Finds Unhealthy Environments Contribute to 12.6 Million Deaths Annually

Environmental risk factors, such as air, water and soil pollution, chemical exposures, climate change, and ultraviolet radiation contribute to more than 100 types of diseases and injuries, amounting to 12.6 million people dying each year as a result of living or working in an unhealthy environment, according to a global assessment undertaken by the World Health Organization (WHO).

The second edition of the report, titled 'Preventing Disease through Healthy Environments: A Global Assessment of the Burden of Disease from Environmental Risks,' reveals that since it was first published a decade ago, deaths due to noncommunicable diseases (NCDs), mostly attributable to air pollution, including exposure to second-hand tobacco smoke, amount to as much as 8.2 million of these deaths, nearly two-thirds of the total deaths caused by unhealthy environments. At the same time, deaths from infectious diseases, such as diarrhea and malaria, often related to poor water, sanitation and waste management have declined. Increases in access
to safe water and sanitation have been key contributors to this trend, alongside better access to immunizations, insecticide-treated mosquito nets and essential medicines.

Looking across more than 100 disease and injury categories, the report finds that the vast majority of environment-related deaths are due to cardiovascular diseases, such as stroke and ischemic heart disease. Regionally, the report finds that low- and middle-income countries in the WHO South-East Asia and Western Pacific Regions had the largest environment-related disease burdens in 2012. Low- and middle-income countries bear the greatest environmental burden in all types of diseases and injuries, however for certain NCDs, such as cardiovascular diseases and cancers, the per capita disease burden can also be relatively high in high-income countries.

The main message emerging from the assessment is that premature death and disease can be prevented through healthier environments. The report emphasizes cost-effective measures and proven strategies that countries can take to improve the environment and prevent sickness. These include reducing the use of solid fuels for cooking, heating and lighting and increasing access to low-carbon energy technologies; adopting tobacco smoke-free legislation; improving urban transit and urban planning, and building energy-efficient housing; promoting safe physical activity; and increasing access to safe water and adequate sanitation.


Tesla Motors has unveiled the Tesla Model 3, the electric vehicle that it hopes will hit the “mass-market” and lifts its total sales to 500,000 units a year by 2020 – a ten-fold increase on its current production. This was no April fool’s release. It was actually unveiled at the company’s California headquarters in the evening of March 31 local time. The event was broadcast live on the net, along with an option to reserve a vehicle, even though it will not go into production until late 2017.

“You will not be able to get a better car for that price,” Tesla founder and chief executive Elon Musk said of the $US35, 000 vehicle. Musk said that 115,000 reservations had already been received in the first 24 hours, and that’s before any of them had seen the vehicle.

Musk said the company had slowly transitioned to low-volume, high price and high performance cars, to “show the world that an electric vehicle can be the best car”, through to an SUV and now, a lower priced high volume vehicle.

The Model 3 looks similar to the Model S, although it will cost less than half the price.

“It is very important to accelerate transition to sustainable transport,” Musk said in his opening remarks. “This is important for future of the world,” he added, pointing to record high Co2 levels in the atmosphere, a sharp rise in average global temperatures last year, and the health impacts of vehicle emissions.

Musk said the Model 3 will fit 5 adults. The instrument panel has been compressed, and the front seats brought “a little further forward”. The rear roof pane is “one big piece of glass”. And it will fit a 7 foot surfboard inside, Musk said.

The high efficiency electric motor provides zero to 60 mph (100kmh) acceleration in less than six seconds. It is equipped with electric all-wheel drive.

Musk said the development costs and learnings of the Model S and the Model X are key for bringing down the cost of the Model 3.
Tesla has sold 100,000 units of its upmarket, high-performance Model S sedan, and is bringing its vulcan-winged Model X into production as well. The Model 3 will be priced at $US35,000 in the US, less various tax incentives.

By the time production of the cheaper Model 3 is in full swing, Tesla’s so called “gigafactory” in Nevada will be in full swing, producing battery storage for its EVs and for household and grid applications. In 2012, when the Model S was released, production was just over 3,000 vehicles.

The company now has 3,600 superchargers world-wide, and this will be doubled by the end of next year, Musk said, and the number of outlets will also more than double that to 441 locations.

63. Sea Levels Set To 'Rise Far More Rapidly Than Expected'

Sea levels could rise far more rapidly than expected in coming decades, according to new research that reveals Antarctica’s vast ice cap is less stable than previously thought. The UN’s climate science body had predicted up to a meter of sea level rise this century - but it did not anticipate any significant contribution from Antarctica, where increasing snowfall was expected to keep the ice sheet in balance. According a study, published in the journal Nature, collapsing Antarctic ice sheets are expected to double sea-level rise to two meters by 2100, if carbon emissions are not cut.

Previously, only the passive melting of Antarctic ice by warmer air and seawater was considered but the new work added active processes, such as the disintegration of huge ice cliffs.

“This [doubling] could spell disaster for many low-lying cities,” said Prof Robert DeConto, at the University of Massachusetts Amherst, who led the work. He said that if global warming was not halted, the rate of sea-level rise would change from millimeters per year to centimeters a year. “At that point it becomes about retreat [from cities], not engineering of defenses.”

As well as rising seas, climate change is also causing storms to become fiercer, forming a highly destructive combination for low-lying cities like New York, Mumbai and Guangzhou. Many coastal cities are growing fast as populations rise and analysis by World Bank and OECD staff has shown that global flood damage could cost them $1tn a year by 2050 unless action is taken.

The cities most at risk in richer nations include Miami, Boston and Nagoya, while cities in China, Vietnam, Bangladesh and Ivory Coast are among those most in danger in less wealthy countries.

The new research follows other recent studies warning of the possibility of ice sheet collapse in Antarctica and suggesting huge sea-level rises. But the new work suggests that major rises are possible within the lifetimes of today’s children, not over centuries.

“The bad news is that in the business-as-usual, high-emissions scenario, we end up with very, very high estimates of the contribution of Antarctica to sea-level rise” by 2100, DeConto told the press. But he said that if emissions were quickly slashed to zero, the rise in sea level from Antarctic ice could be reduced to almost nothing.

“This is the good news,” he said. “It is not too late and that is wonderful. But we can’t say we are 100% out of the woods.” Even if emissions are slashed, DeConto said, there remains a 10% chance that sea level will rise significantly.
Prof David Vaughan, at the British Antarctic Survey and not part of the research team, said: “The new model includes for the first time a projection of how in future, the Antarctic ice sheet may lose ice through processes that today we only see occurring in Greenland. “I have no doubt that on a century to millennia timescale, warming will make these processes significant in Antarctica and drive a very significant Antarctic contribution to sea level rise. The big question for me is, how soon this all could begin. I’m not sure, but these guys are definitely asking the right questions.”

Active physical processes are well-known ways of breaking up ice sheets but had not been included in complex 3D models of the Antarctic ice sheet before. The processes include water from melting on the surface of the ice sheet to flow down into crevasses and widen them further. “Meltwater can have a really deleterious effect,” said DeConto. “It’s an attack on the ice sheet from above as well as below.”

Today, he said, summer temperatures approach or just exceed freezing point around Antarctica: “It would not take much warming to see a pretty dramatic increase [in surface melting] and it would happen very quickly.”

The new models also included the loss of floating ice shelves from the coast of Antarctica, which currently hold back the ice on land. The break-up of ice shelves can also leave huge ice cliffs 1,000m high towering over the ocean, which then collapse under their own weight, pushing up sea level even further.

The scientists calibrated their model against geological records of events 125,000 years ago and 3m years ago, when the temperature was similar to today but sea level was much higher.

Sea-level rise is also driven by the expansion of water as it gets warmer and in January scientists suggested this factor had been significantly underestimated, adding further weight to concerns about future rises.

Recent temperatures have been shattering records and it was recently announced that the Arctic ice cap had been reduced to its smallest winter area since records began in 1979, although the melting of this already floating sea ice does not push up ocean levels.

64. Lightweight Materials Increases GHG Emissions, Improves Fuel Economy

The use of lightweight materials (carbon-fiber reinforced plastic, wrought aluminum, etc.) in vehicle manufacture results in higher vehicle-cycle greenhouse gas emissions, but also in improved fuel-economy, which leads to a net benefit as far as total life-cycle greenhouse gas emissions go, according to
a new study from Argonne National Laboratory.

The improved fuel economy of lighter-weight vehicles is primarily the result of a reduced weight. As far as the differences between the various lightweight materials used as a substitute for steel — the use of wrought aluminum led to lower total life-cycle greenhouse gas emissions in all assumed cases, whereas the use of carbon-fiber reinforced plastic (CFRP) or magnesium only led to a lower net total in most cases.

The researchers used The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model (GREET) developed at Argonne for the energy and emissions data utilized.

The new study was published in the ACS journal Environmental Science & Technology.

65. Global Renewables Grew At Fastest Rate on Record in 2015: Research

Renewable energy generation capacity expanded by 8.3 percent last year to 1,985 gigawatts globally, the fastest annual rate on record, data from the International Renewable Energy Agency (IRENA) showed. The strong growth was mainly due to a continued decline in technology costs. Overall, capacity has increased by roughly a third over the last five years, mostly fueled by new installations of wind and solar energy.

Wind power capacity rose by 17 percent, or 63 gigawatts (GW), from the previous year as the cost of onshore wind turbines fell. Solar power capacity increased by 37 percent, or 47 GW, due to declines in the price of photovoltaic modules, according to IRENA's Renewables Capacity Statistics 2016.

"Renewable energy deployment continues to surge in markets around the globe, even in an era of low oil and gas prices," IRENA's director general Adnan Z. Amin said in a statement. "Falling costs for renewable energy technologies, and a host of economic, social and environmental drivers are favoring renewables over conventional power sources," Amin added.

Regionally, the fastest growth in renewable generation capacity was in developing countries. In Central America and the Caribbean it increased at a rate of 14.5 percent last year while capacity in Asia rose by 12.4 percent.

66. Climate Data Since Vikings Cast Doubt on More Wet, Dry Extremes

Climate records back to Viking times show the 20th century was unexceptional for rainfall and droughts despite assumptions that global warming would trigger more wet and dry extremes, a new study showed recently. Stretching back 1,200 years, written accounts of climate and data from tree rings, ice cores and marine sediments in the northern hemisphere indicated that variations in the extremes in the 20th century were less than in some past centuries.

"Several other centuries show stronger and more widespread extremes," lead author Fredrik Ljungqvist of Stockholm University told reporters of findings published in the journal Nature. "We can't say it's more extreme now."

Pinning down links between global warming and rainfall is vital to planning billion-dollar investments in everything from irrigation for food production to flood defenses along rivers.
Ljungqvist said many existing scientific models of climate change over-estimated assumptions that rising temperatures would make dry areas drier and wet areas wetter, with more extreme heatwaves, droughts, downpours and droughts.

The 10th century, when the Vikings were carrying out raids across Europe and the Song dynasty took power in China, was the wettest in the records ahead of the 20th, according to the researchers in Sweden, Germany, Greece and Switzerland. And the warm 12th century and the cool 15th centuries, for instance, were the driest, according to the report, based on 196 climate records. Variations in the sun's output were among factors driving natural shifts in the climate in past centuries.

Ljungqvist said the findings did not mean current climate change, blamed on rising man-made greenhouse gas emissions, was less of a threat than thought. "Absolutely not," he said, adding that the pace of warming had increased in recent years and that the 20th century was the warmest in the records.

Last December, 195 nations agreed to shift from fossil fuels and aim for zero net greenhouse gas emissions by 2100 to rein in rising temperatures.

Other climate experts who were not involved in the study said it highlighted complexities in predicting global warming. "This paper adds to the growing evidence that the simple paradigm of 'wet-gets-wetter, dry-gets-drier' under a warming climate does not apply over land areas," said Ted Shepherd, a professor at the University of Reading.

James Renwick, of Victoria University of Wellington, said it was always hard to match century-long data with recent decades of warming. "We know that human-induced climate change is already affecting the hydrological cycle", he wrote, with evidence such as recent drought in Syria that he said was the worst in 900 years.

67. Aviation Emissions Control Under Intense Debate

As the Global Aviation Dialogues (GLADs) closed in Utrecht, where a range of member state, industry and NGO stakeholders discussed a market-based measure (MBM) to limit emissions, observers noted that discussions over differentiated responsibility have made little progress.

Rich and poor countries are split on whether individual airlines should only pay for their own emissions offsets within the MBM, called the 'individual' approach, or whether airlines should pay according to average sector growth in the region where they are registered, called the 'sectoral' approach.

Developed countries are understood to favor an individual approach as their industries are expected to grow less after 2020 than those in developing countries - meaning large, established airlines would not pay for the offsets of their fast growing competitors. Developing countries would prefer a sectoral approach so that offset costs are shared more widely, while the US is expected to push for a compromise deal.

The latest MBM draft has been criticized by NGOs. The text suggests that a number of exemptions will be made in the years following the introduction of the MBM in 2020, for example the least developed countries may have until 2026 to fully comply. Such exemptions are controversial. As it stands, the draft MBM text “doesn't even achieve” ICAO’s goal of achieving carbon neutral
growth beyond 2020, as nearly 40% of the emissions concerned could be excluded in the scheme’s early years, WWF said in a joint statement of six NGOs.

The draft MBM also lacks “strict criteria and clear safeguards” against double-counting, where the same offsets are included in separate climate policies, such as countries’ carbon reduction commitments under the UNFCCC, NGOs said.

The quality of offsets used in the MBM, particularly international forestry credits such as REDD+, has also been questioned. While discussions to agree ‘guidance’ on offset quality are ongoing, NGO observers are calling for binding rules. They highlight the need, for example, for a ‘negative list’ which would exclude offset types that do not meet specific quality requirements.

“Offset quality criteria are only effective if they are binding. Without mandatory rules and a negative list that bans the known offsetting activities with harmful impacts, airlines could inadvertently buy credits with adverse climate impacts, creating a completely dysfunctional MBM,” NGO Carbon Market Watch said.

All 191 ICAO member states are invited to attend a further round of negotiations in May, ahead of a final decision on the MBM at the triennial general assembly, from 27 September to 7 October.

An updated draft of the MBM is expected to be circulated in the month ahead.

More than 80 NGOs sent a joint letter to negotiators arguing that ICAO’s own sustainability criteria precludes many international carbon offsets, forestry included. Experience with the world’s largest voluntary carbon market, the Clean Development Mechanism, has proven that issues like double counting are unlikely to be resolved by many offsets, the letter argues.

Emissions reductions for aviation and shipping were left in the hands of ICAO and the International Maritime Organization following international transport’s last minute exclusion from December’s Paris climate deal at the UN’s climate agency, the UNFCCC.

In a draft of the MBM proposal, ICAO outlined eight criteria for MBM offsets, including that the CO2 reductions generated are ‘additional’ to those already agreed and ‘represent permanent emissions reductions’.

“ICAO’s own standards rule forests and land offsets out from the start, because they need to be permanent emissions reductions, which is impossible to prove for forests since they are reversible. ICAO needs to come up with a serious plan and stop tinkering at the edges,” said Hannah Mowat, campaigner at forestry NGO FERN.

Forestry offsets face further criticism for their impact on local communities, meaning the NGO letter has additional support from social justice and human rights groups. Another MBM criteria from ICAO is that the offsets should ‘do no harm’, the letter notes.

In place of offsets, the NGOs recommend a global aviation CO2 tax on airline operators, the revenues of which would go toward the Green Climate Fund or the Adaptation Fund. Offsetting is widely discredited as a suitable climate solution as it does not lead to absolute emissions reductions, FERN added in a policy report.

The debate around offsets is polarized, however. A separate coalition of conservation NGOs released a statement arguing that REDD+ is essential for curbing aviation emissions. Forestry
offsets are supported by industry too. The worldwide airline association IATA says that REDD+ credits do fall in line with ICAO’s sustainability criteria. “Carbon offsetting has been found to be a far more cost-effective way to address CO2 emissions than for example carbon levies or passenger taxes,” IATA said.

Winning global agreement on how the airline industry is charged for carbon emissions blamed for climate change will be the top item on Alexandre de Juniac’s agenda when he becomes director of the International Air Transport Association this summer. “If we have a system of taxing carbon emissions, it’s got to be global—it’s got to be applied across-the-board, not so that some zones pay and others don’t,” de Juniac, the outgoing chief executive officer of Air France-KLM Group, said in an interview on April 7th. “You can’t have a system that penalizes some airlines and not others.”

“This is a heavy subject on which IATA has a key role to play in working in collaboration with ICAO,” de Juniac said. De Juniac announced earlier this week that he is leaving the airline to take the top post at industry lobby group IATA, after the mandate of Tony Tyler expires in June. He will move into the position sometime around July, subject to discussions with the outgoing director.

ICAO will convene for an additional preparatory meeting from 11-13 May.

68. U.S. EPA Head Backs ICAO Aircraft Plan Despite Slow Pace

U.S. Environmental Protection Agency Administrator Gina McCarthy backed international efforts to curb greenhouse gas emissions from aircraft but admitted she had hoped for a more aggressive schedule for the reductions. “We were hoping for something that would be a little bit more aggressive in time line, but we certainly recognize this has to go through the [International Civil Aviation Organization] process and we were very supportive of the outcome and we hopefully get that over the finish line but do a job of marrying that with really good market-based measures that can be put in to place across all our countries,” McCarthy told reporters on April 5th at a breakfast sponsored by the Christian Science Monitor.

The EPA has proposed a rule that would find that greenhouse gas emissions from aircraft pose a danger to the public and environment and should be regulated under the Clean Air Act. With that, the EPA also issued an advance notice of proposed rulemaking suggesting the agency will likely follow international standards. The EPA’s final endangerment finding is expected in June.

An ICAO committee in February recommended adoption of what would be the first requirement that airplane manufacturers curb carbon dioxide emissions from planes. The standards, which would apply to new aircraft engines beginning in 2023, are estimated to prevent 650 million metric tons of carbon dioxide emissions by 2040, according to the Obama administration.

Environmental advocates have derided the ICAO standards as insufficient, which could make the EPA a new battleground over aircraft as it pursues any eventual regulations.

McCarthy said she hopes any future EPA rules would be able to link up with international market mechanisms for reducing aircraft emissions.

The European Commission in March began public consultation on the use of emissions trading or a similar framework with an eye toward the ICAO agreement.
69. Call To Tighten Global Fuel Efficiency Standards for Ships

Countries have been urged to tighten UN fuel efficiency standards for new ships as the current regulatory regime is too weak, an NGO study shows. National officials will meet in an expert working group in Brussels to discuss the EU’s position ahead of a meeting at the UN’s International Maritime Organization (IMO) later this month. IMO members will be voting on whether to review the fuel efficiency standards, known as the EEDI, for the period after 2020.

A new study published by CE Delft on behalf of green transport NGOs Seas at Risk and T&E compared ships that fell under the EEDI and ships that did not, between 2013 and 2015. Regardless of EEDI regulation, the study found that all ships easily met the efficiency standards.

John Maggs, senior policy advisor at Seas At Risk, said: "What is now clear is that recent improvements in ship design efficiency are the result of the market, not the EEDI."

A review of the EEDI is currently underway but an IMO working group led by Japan has recommended that the review be dropped and the existing standards retained. But this will only "prevent a reversion to the worst designs of the past", T&E said.

The European Commission only has observer status at the IMO, but is understood to favor increasing the EEDI targets. Few EU member states contested the Japanese proposal to drop the EEDI review, suggesting little appetite for increasing the targets.

The existing EEDI set a baseline for 2013 from which new ships must be 10% more efficient by 2015, 20% by 2020 and 30% by 2025. The study shows that at least two-thirds of containerships, half of general cargo ships and a quarter of tankers launched in 2015 already achieved greater fuel efficiency than the 2020 requirements without using innovative new technologies.

There is an economic imperative to increase the fuel efficiency of ships as fuel is one of the largest costs for ship operators. Existing policy has done little to push efficiency innovation beyond this innate cost incentive, T&E concluded.

T&E and Seas at Risk sent a letter to EU climate and transport ministers last month urging them not to drop the review of the EEDI targets as “this would seriously undermine the IMO’s credibility and send out a highly problematic message to other sectors taking action against climate change”.

70. What Are The Most Effective Ways Of Promoting Electric Cars?

Norway has the highest battery-electric vehicle market share of any country worldwide. A new study investigated the incentives that have persuaded consumers to purchase electric vehicles in Norway, revealing that up-front price reductions (such as exemptions from purchase tax) are the most powerful incentives.¹

An astounding 80% of increases in CO2 emissions in the past 45 years have come from road transport. Electromobility — a road transport system in which vehicles use electricity for propulsion — has been proposed as a method of reducing greenhouse gas emissions from the

transport sector. Indeed, electric vehicles emit less CO2 than conventional, internal combustion engine-powered cars but also provide enhanced energy efficiency, lower user costs and reduced noise and air pollution.

Norway, where this study was conducted, has become a global leader in electromobility. It has the highest market share of Battery Electric Vehicles (BEVs) of any country worldwide. Over 70,000 BEVs are registered in the country, and they accounted for almost 20% of new car sales in 2015.

One reason for Norway’s high electric-vehicle market share is the incentives the Norwegian government offers, which make BEVs more or less the same price as conventional vehicles. Government policy in Norway also offers incentives such as free parking to make electric vehicles more convenient and cost-efficient to use. The success of the incentives in Norway makes it a valuable case study for regions aiming to achieve similar.

This study used the results of a survey of almost 3,400 BEV owners in Norway to investigate which incentives are the most important in deciding to buy a BEV, and which groups of buyers are most likely to respond to which incentives.

The researchers investigated the effect of seven different incentives: exemption from purchase tax, exemption from VAT, vehicle license-fee reduction, exemption from road tolling, free parking, bus-lane access and free ferry tickets. They asked respondents to rate the incentives on a scale of 1 to 10, from not important to very important. They also asked the BEV owners whether they would have purchased a BEV today if a given incentive was not in place.

The results showed that exemptions from purchase tax and VAT were critical incentives for over 80% of respondents. Exemption from road tolling and reducing the vehicle license fee were critical to half of the sample, while the remaining incentives were critical for particular groups.

There were differences in which incentives people responded to most based on their age, gender and education. However, because of the similar price of BEVs and conventional vehicles in Norway, income was of less importance. There were also differences based on the location of respondents. For example, residents in Trondheim — where road tolling is extensive — were keen on incentives that reduce the costs of usage, while respondents living near to the capital of Oslo gave priority to bus-lane access (which provides significant time savings for commuters during rush-hour traffic). This suggests local management of incentives is important.