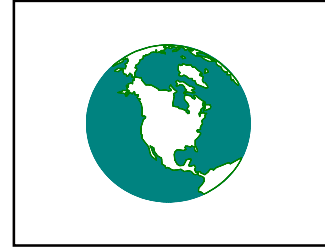


Michael P. Walsh
 3105 N. Dinwiddie Street
 Arlington, Virginia 22207
 USA
 Phone: (703) 241 1297 Fax: (703) 241 1418
 E-Mail mpwalsh@igc.org
 Michael@theicct.org
<http://walshcarlines.com>



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EUROPE

1. EEA Makes Case for Stricter Air Pollution Standards

Upgrading the EU's air pollution standards to match the recommendations of the World Health Organization (WHO) would reduce PM2.5 concentrations by a third, according to an EU report. This would lead to 144,000 fewer premature deaths compared to the current situation, the European Environment Agency (EEA) said. It estimated that long-term exposure to PM2.5 caused 432,000 premature deaths in 2012.

In 2013, 87% of Europe's urban population were still exposed to fine particle pollution levels exceeding levels deemed safe by the WHO, down from over 90% in 2012, according to the EEA's annual report. But the less strict European standard was only exceeded for 9% of the urban population.

The EEA also estimated, for the first time, the number of premature deaths caused by nitrogen dioxide (NO₂) emissions, at around 75,000 per year in Europe. The annual limit value for NO₂ was "widely exceeded" across Europe in 2013 with Italy, the UK, Germany, France and Spain having the most premature deaths due to exposure to the pollutant, the report said. 93% of all local breaches occurred close to roads, it added.

Green group T&E said the NO₂ figures reassert that last month's decision by environment ministers to weaken new EU limits on diesel car NO_x emissions was "deplorable". MEPs are expected to block the proposal in the European Parliament's environment committee on 14 December.

The EEA report also found that eutrophication caused by ammonia and nitrogen oxides, in addition to plant damage caused by ozone, are still "widespread across Europe".

It added that 17,000 premature deaths were caused by ground-level ozone in 2012.

2. Air Pollution Linked to Asthma in Children and Teens

Exposure to air pollution early in life may contribute to the development of asthma in childhood and adolescence, a European study suggests. Researchers followed more than 14,000 children from birth through ages 14 to 16 and found those born in communities with more polluted air were more likely to develop asthma than other kids, particularly after age 4.

While previous research has linked asthma to air pollution exposure in early childhood, the current study offers new evidence that this connection extends into adolescence, said lead author Dr. Ulrike Gehring, a researcher at Utrecht University in The Netherlands.

"Exposure to air pollution is thought to cause asthma by effecting the size and structure of the developing lung as well as the developing immune system," Gehring said. "The exact mechanisms behind the association between air pollution exposure and asthma in children, however, are not clear."

To look at the link between asthma and air pollution, Gehring and colleagues examined concentrations of nitrogen dioxide, a byproduct of fossil fuels that can contribute to smog, and so-

called particulate matter, a mixture of solid particles and liquid droplets that can include dust, dirt, soot and smoke.

Then, they examined questionnaire data about the children's respiratory health that was collected several times during childhood. Parents were asked if kids were diagnosed with asthma, prescribed asthma drugs or experienced wheezing. Parents were also asked if kids had sneezing, congestion or itchy, watery eyes when they didn't have colds.

The study included kids from Germany, Sweden and The Netherlands.

Overall, the risk of asthma by ages 14 to 16 increased with increasing exposure to nitrogen dioxide and particulate matter at the birth address, but not with exposure levels for the address at the end of the study.

Researchers didn't find a link between air pollution exposure and allergies.

One limitation of the study is that researchers used air pollution measurements from 2008 to 2010 for the entire duration of follow-up, the researchers acknowledge in *The Lancet Respiratory Medicine*. Researchers also didn't look at air quality at school or daycare centers, which might differ from where the children lived.

It's also possible that children growing up near major, heavily trafficked roadways, who are at the greatest risk for exposure to air pollution, may differ from kids who grow up in other locations like suburbs in other respects, such as lower socioeconomic status, that also increase asthma risk, said Steve Georas, a researcher at the University of Rochester Medical Center who wrote an accompanying editorial.

Even so, the findings add to a growing body of research linking asthma to pollution, Georas said.

3. Dirty Air Killing Thousands Prematurely



Queueing traffic on the M1 motorway leaving Leeds in the rush hour recently.

Motorists are being urged to cut down on needless road journeys to reduce the thousands of premature deaths linked to air pollution each year in Yorkshire alone. A new campaign, 'Drive Less, Live More', launched by road safety charity Brake and partners at the start of Road Safety Week in York, highlights the human cost of both the region's and the country's heavy reliance on cars.

Some 2,567 deaths of people aged 25 and over in the region were attributable to "human-caused particulate matter air pollution" in 2010, the charity's research shows.

Commuters contribute greatly to the problem, the campaign's research suggests - more than a third of the region's workforce (36 per cent) drives to work.

In total, the use of motor vehicles in Yorkshire contributed almost a quarter - 23 per cent - of carbon dioxide emissions produced in the region in 2012.

Nationally, air pollution is estimated to kill 52,500 people each year, while five people die and 64 people are seriously injured on UK roads on average every day - a rise of four per cent on the previous year.

Gary Rae, director of communications and campaigns at Brake, acknowledged that not everyone has freedom of choice in the way they travel but that there were huge benefits of driving less.

4. Member States to Push For Weaker Pollution Law

Member states are negotiating whether to push for new flexibility in the revised National Emission Ceilings (NEC) Directive to make it easier for them to comply. One such flexibility would allow countries to breach their annual emissions reduction commitments during dry summers or cold winters, provided an average is met over three years.

Member states are due to finalize their position for negotiations with the European Parliament in December.

The three-year rule would apply if countries can demonstrate that adjusting energy policy to deal with the seasonal change “would lead to disproportionate costs, substantially jeopardize national energy security or pose a substantial risk of energy poverty for a significant part of the population”, a draft Council document said.

The European Commission proposed 2030 targets for the revised law with a view to linear progression to this point, including binding intermediary targets for 2025. The three-year flexibility would undermine this and lead to significant health risks, NGOs say.

A separate flexibility being considered by member states is for a non-linear progression to the 2030 target to be justified if it “is economically or technically more efficient”. NGOs say this too could lead to government inaction.

Member state representatives are expected to discuss the ambition level for reductions in SO₂, NO_x, ammonia, PM_{2.5} and volatile organic compounds emissions soon.

A majority of member states wants to exclude methane from the directive, contrary to the Commission’s proposal.

A spokesman for the Luxembourg presidency said it is “working on a solution with the highest ambition possible, acceptable to a large number of delegations.”

A number of measures voted for by the Parliament last month are unlikely to be backed by the Council, including binding intermediary targets for 2025.

The Commission has set a target proposal of a 52% reduction in the health burden of air pollution by 2030 compared to 2005 levels. It appears according to reports that many member states would like to see this goal weakened but the Commission is strongly against weakening the reduction target below 50%.

5. VW Scandal Continues

VW Discloses ‘Irregularities’ in Vehicle Carbon Levels

Volkswagen AG has announced that it discovered “irregularities” in the settings of some its vehicles during the certification process, the latest in a series of emissions issues involving the company’s diesel fleet. Volkswagen, in a November 3rd statement, said carbon dioxide levels and fuel consumption figures were “set too low” for some models as they underwent certification testing.

The automaker estimated that around 800,000 vehicles could be affected. No details were provided about which Volkswagen vehicles are affected, but Volkswagen did say the majority of the affected vehicles have diesel engines.

The carbon dioxide issues were discovered as a result of an internal investigation into the automaker's diesel fleet following the September admission that 482,000 Volkswagen diesel-engine vehicles that were sold in the U.S. contained defeat devices. That technology allowed diesel versions of the Volkswagen Passat, Beetle and other models to pass federal emissions tests despite emitting far more nitrogen oxides pollution than allowed under normal driving conditions.

The automaker said it was too early for a "reliable assessment" of the scale of the carbon dioxide and fuel consumption irregularities, but it set an initial estimate of the economic liability for this issue at about \$2.19 billion.

Volkswagen previously estimated that the defeat device issue with its diesel fleet, which affects about 11 million cars worldwide, would cost the company at least \$7.3 billion. It faces civil penalties from the U.S. Environmental Protection Agency that are likely to be significant, possible criminal charges from the U.S. Justice Department and fines from other countries where the cars were sold.

Volkswagen said it will "immediately start a dialogue" with the appropriate regulatory agencies regarding the consequences of the new findings. Volkswagen's Supervisory Board said in a separate November 3rd statement that a special committee established to investigate emissions issues will meet with the board soon to consult on additional measures and consequences. "The supervisory board is deeply concerned by the discovery of irregularities found when determining CO2 levels for the type approval of Volkswagen Group vehicles," the board said. "The latest findings must be an incentive for the supervisory board and the board of management to do their utmost to resolve such irregularities and rebuild trust."

The US EPA has levied significant fines against automakers in the past for overstating the performance of their vehicles. Kia Motors Corp. and Hyundai Motor Co. in 2014 agreed to pay a \$100 million civil penalty and forfeit about \$200 million in credits after overstating the performance of several vehicles, which emitted more greenhouse gases than they were certified for by the EPA. The Kia-Hyundai enforcement action represents the largest civil penalty ever assessed under the Clean Air Act.

The House Energy and Commerce Committee sent a requesting Volkswagen Group of America provide more information about the latest allegations, including a full description of any software that was used to defeat emissions controls and an overview of how that software works. The committee also asked Volkswagen to disclose any additional make and model year vehicles that the automaker knows or suspects may contain undisclosed auxiliary emissions control devices that could affect vehicle compliance with federal pollution standards. The letter requested a response by November 17th.

Brussels Asks VW to Clarify CO2 Emissions

The European Commission has given Volkswagen 10 days to report the extent to which it underestimated CO2 emissions of new cars. Climate commissioner Miguel Arias Cañete wrote to the beleaguered carmaker after it declared that it had wrongly claimed too low CO2 emissions for some models.

At a press conference, a spokeswoman said it was too early to say whether the Commission would penalize Volkswagen for breaching EU car CO2 legislation. "Before going into the procedure of imposing fines or anything of such nature we first want to see what Volkswagen has to say," the Commission spokeswoman said.

In his letter, Mr. Arias Cañete has asked Volkswagen CEO Matthias Müller which vehicle models are affected and by how much CO2 emissions were underestimated for each model. The information is needed because the Commission is compiling its assessment of new car CO2 emissions under the car CO2 regulation, the spokeswoman said.

With vehicle taxation linked to CO2 emissions in many EU countries, false CO2 claims are likely to be damaging, and Volkswagen has set aside €2bn to deal with the problem.

Volkswagen Executives Reportedly Knew About False Emission Results a Year Ago

Volkswagen executives were aware of the false fuel efficiency and emission test results for at least a year before the public was informed about it, according to a report by German newspaper, Bild am Sonntag. It reported that Volkswagen CEO Martin Winterkorn had known about the discrepancy by spring of 2015.

Winterkorn had promised that Volkswagen would reduce fuel consumption emissions by 30 percent by 2015. However, the Bild am Sonntag report claims that Volkswagen engineers could not achieve that number and instead opted to cheat emissions tests for 800,000 vehicles, which were mainly sold in Europe. In order to falsify emission tests results, Volkswagen used artificially high tire pressures as well as adding diesel fuel to the engine oil mixture.

The company previously pinned the blame on rogue elements in its workforce. Volkswagen America CEO Michael Horn blamed software engineers for installing defeat devices that were used to cheat emissions tests results. The new report claims that Volkswagen executives had insider knowledge about the actions that led the scandal.

Winterkorn resigned as Volkswagen CEO in September following the company's admission that it had deceived United States regulators about the emissions test results. Volkswagen declined to issue a comment regarding whether any other company executives know about the inaccuracies stated in its fuel efficiency and carbon dioxide output.

Volkswagen Market Share Shrinks

The Volkswagen Group's European sales fell in October, the first full month since a scandal erupted over the carmaker's rigging of emissions tests. The group's share of new car registrations in Europe fell from 25.9% in October 2014 to 25.1% last month.

Volkswagen's sales are "still holding up relatively well" despite some signs of weakness in Germany and the UK, but a faster decline is likely in the coming months, said analysts at Evercore ISI. There are no signs that wider diesel car sales have been particularly hit by the Volkswagen affair, although diesel's market share is shrinking in Europe, the analysts added.

Total sales across the Volkswagen group were down 0.5% year on year, while sales of Volkswagen-branded passenger cars fell by 0.2%. Other brands in the group, including Škoda and Seat, also saw falls, the figures from car manufacturers' association ACEA showed.

However sales increased for other Volkswagen brands, including Audi and Porsche.

Volkswagen's figures are in contrast to wider growth in the car market, with total registrations up by 2.8% year on year in October. Total car sales in Europe increased by 2.9% between September and October 2015.

VW Emissions Scandal Prompts German Tax Avoidance Probe

The Volkswagen Group, already set for billions in losses over its emissions reporting scandal, now faces the possibility of additional financial liabilities as authorities examine whether to levy personal environmental tax avoidance fees and as the government contemplates tax evasion charges. The company has asked to be able to pay any personal tax liabilities that its customers might owe because of tax benefits they received for the vehicles' supposedly low emissions.

Volkswagen spokesman Claus-Peter Tiemann said the global fallout from the revelation alone will cost the automaker an estimated 2 billion euros (\$2.16 billion). In Germany, however, a further knock-on effect is being anticipated, as the false emissions and fuel use levels give rise to the prospect of tax avoidance. Although the amount of potential tax avoidance isn't yet known, authorities have estimated it to be in the millions. VW's Tiemann said the actual amount of tax owed will be known once the company has completed testing the real carbon dioxide emissions level in its cars.

According to German tax laws, the country's annual motor vehicle tax (Kraftfahrzeugsteuer) since July 2009 has been based on carbon dioxide emissions; a linear tax rate of 2 euros (\$2.16) per gram and kilometer for carbon dioxide emissions is charged for each vehicle. In addition, diesel cars registered between July 1, 2009, and Dec. 31, 2013, that comply with Euro 6 regulations—the European Commission-driven standard for acceptable levels of exhaust emissions of nitrogen oxide and other pollutants—earn 150 euros (\$162) of tax relief from the first day of registration.

Once VW has completed the carbon dioxide emissions tests, tax authorities will look at the real emissions levels of each vehicle and determine their correct motor vehicle tax category and calculate how much tax relief was incorrectly applied to determine the revised tax liability. The reassessed tax amount, plus 6 percent annual interest, would be payable.

There is some uncertainty over who would be held liable for any reassessment of motor vehicle tax, based on the revised carbon dioxide figures, because under German tax rules, it is drivers who pay the tax, not manufacturers. Even so, Volkswagen has said it wants to foot the bill for the millions of euros in unpaid motor vehicle taxes and the added 6 percent annual interest.

In a letter to the 28 EU finance ministers, Volkswagen Chief Executive Officer Matthias Mueller pleaded for authorities to make an exception. "The Volkswagen Group will vouch for any additional taxes that must be offset—we would be very grateful, if you would be willing, if necessary, through appropriate legal or administrative measures, to ensure that the competent tax authorities do not burden our customers but Volkswagen directly with any additional taxes," the letter said.

VW spokesman Tiemann added that the company "will take responsibility for settling any additional taxes resulting from the carbon dioxide issue. Volkswagen is in contact with the authorities regarding this."

Mueller's plea appears to have resonated with German Transport Minister Alexander Dobrindt. The motor vehicle tax “also applies retroactively,” Dobrindt said, adding that his ministry is working with the German finance ministry on a “VW law” to ensure “customers are not burdened with additional costs with the motor vehicle tax but that Volkswagen is instead.”

Meanwhile, the state prosecutor of Braunschweig—a VW manufacturing town near the company's headquarters in Wolfsburg—is investigating whether understating carbon dioxide emissions levels constitutes a case of tax avoidance. This is part of a wider inquiry into individuals embroiled in the emissions case.

Braunschweig state prosecutor spokesman Klaus Ziehe told reporters that the state prosecutor's office is pursuing a case against the VW Group, namely against individuals at VW, on two proceedings: one into the manipulation of diesel emissions, which was opened in early October, and one into false carbon dioxide emissions levels, which was initiated in early November.

Ziehe said the primary target of both proceedings is suspected fraud and competition law violations, and that while tax fraud isn't the primary target, it would also fall under its line of investigation. He couldn't elaborate on the scope of fiscal investigations because “tax offenses are under an obligation of secrecy.”

Ziehe said the investigations “will take a long time” and wouldn't be completed by the end of 2015, suggesting that it could take “a period of several years in both proceedings.”

Although Ziehe said he couldn't elaborate on the likely penalties that would be imposed if VW were found guilty of fraud because the investigations are still at an early stage, he noted that fraud is “normally” punishable by fines in smaller cases, or imprisonment of up to five years for each offense. Violations of competition law are punishable by fines or imprisonment of up to two years, he said.

Germany Investigating Emissions Beyond VW

Germany's Federal Motor Vehicle and Transport Authority (KBA) said it is investigating the possibility of elevated levels of nitrogen oxide emissions from diesel cars manufactured not only by Volkswagen, but by other automakers as well.

“Volkswagen Group vehicles and those of other leading manufacturers are being inspected,” the KBA said in a statement, noting that the investigation involves 50 different vehicles from German, Italian, Japanese and American automakers.

“On the basis of raw data, partially elevated levels of nitrogen oxide in different driving and environmental conditions have thus far been detected,” the KBA added. “This data is being further evaluated in talks with the affected manufacturers and licensing parties—only afterwards will legally conclusive results be available.”

The vehicles being examined include those manufactured by Audi, BMW, Ford, Mercedes, Opel, Porsche, Smart and VW, as well as foreign manufacturers, Alfa Romeo, Chevrolet, Dacia, Fiat, Honda, Hyundai, Jeep, Land Rover, Mazda, Mitsubishi, Nissan, Peugeot, Renault, Toyota and Volvo.

The investigation involves more than 50 vehicles from domestic and international manufacturers with various diesel engines whose pollutant output is measured on roller dynamometers as well

as through portable emissions measurement systems on roads, it said. Around two-thirds of the readings have been carried out.

VW Wins Approval to Repair Most Diesel Engines

Volkswagen AG said it has approval to repair most of its rigged European diesel engines and made a deal with U.S. regulators to resubmit questionable software for review in 85,000 other vehicles, signs of progress in its effort to overcome the two-month-old emissions crisis.

German automotive regulator KBA has approved a software update for 2.0-liter diesel motors and has agreed in principle to a plan for 1.6-liter engines, Chief Executive Officer Matthias Mueller told about 1,000 company executives on November 23rd in Wolfsburg, Germany. The costs and complexity of the fixes, which apply to more than 90 percent of the affected vehicles in Europe, are “manageable,” he said in excerpts of the speech obtained by the press.

The U.S. Environmental Protection Agency and California Air Resources Board agreed to let Volkswagen seek approval for a revised version of software in 85,000 diesel engines that had been targeted in the latest probe by U.S. regulators, the company said. Assuming it is approved, the fix should cost in the mid-double-digit millions of euros, Volkswagen said.

Both deals show movement toward solutions in the scandal Volkswagen is facing on three fronts: cheating software installed in about 11 million vehicles worldwide with 1.2-, 1.6- and 2.0-liter diesel engines; irregular carbon dioxide ratings on about 800,000 vehicles; and questionable software in the larger diesel engines in the U.S.

While the European fix won't apply in the U.S., it does show a path forward for most of the cars that had cheating software worldwide. Europe is chiefly affected, with a recall planned for as many as 8.5 million vehicles.

The 1.2-liter diesel probably only needs a software update, with the plan to be presented to the KBA by the end of the month, Mueller said. The repair for the 1.6-liter engine is less complex than initially suspected. In addition to upgraded software, the cars will need “relatively simple changes” to the air filter system, according to the CEO. He didn't elaborate on the cost of expected regulatory fines and lawsuits in the U.S. and Europe.

“Our assumption that substantive changes to the motor would be necessary have not come true,” Mueller said in the speech. He didn't comment on what affect the fixes could have on the vehicles' acceleration and fuel economy.

The U.S. Environmental Protection Agency and the California Air Resources Board said Nov. 20 that they were investigating Volkswagen, Audi and Porsche models with 3.0-liter diesel engines as far back as the 2009 model year, after initially focusing on newer versions. VW had rejected the initial claims, straining its relations with the regulators. Three pieces of software installed to help control the cars' emissions systems weren't properly declared in an application for approval, and one of them “is regarded as a defeat device according to applicable U.S. law,” Audi said. A defeat device alters emissions control systems in a way that violated clean air laws.

Appointed in the wake of the scandal, Mueller said he plans to present an interim report on the status of the investigation in mid-December as the final results will still take several months. Ultimately, he plans to present a new strategy by mid-2016. The goal is to shake up the company's autocratic structure and refocus on three topics: digitalization, sustainability and integrity.

"We need a bit more Silicon Valley," said Mueller.

Volkswagen, Audi Suspend Two Engineers Implicated To Emission Test Scandal

German car manufacturer Volkswagen along with its luxury brand Audi announced that it has suspended two engineers that are implicated with the recently discovered emission test scandal. On November 19th, Volkswagen and Audi notified United States regulators that more than 85,000 of their vehicles with V6 3.0-liter diesel engines were fitted with emission controlling equipment capable of cheating test regulations.

The emission controlling equipment were not disclosed to US regulators.

Audi said that it has launched an investigation in order to get to the bottom of the problem. The company added that it is trying to determine whether its employees in technical development and other departments deliberately added the emission controlling equipment.

Audi acting chairman Berthold Huber said, "We are surprised and shocked by the emissions news from the US. Now the causes for such grave mistakes must be found and eliminated. This has utmost priority."

The V6 diesel engines were designed and assembled by Audi at its factory located in Neckarsul, Germany. The engines are widely used in premium car models from Audi, Volkswagen and Porsche. Reports indicate that affected engines bear the model years between 2009 through 2016.

The recent Audi suspension will put the current number of officials implicated to the scandal to eight, which include at least six working at a senior capacity.

VW's CO2 Deception Spreads to More Gasoline Engines

Volkswagen Group's scandal over false CO2 emissions figures affects more gasoline engines than previously disclosed. The automaker said in a statement that it has now identified 430,000 VW, Audi, Skoda and Seat models from the 2016 model year affected by its disclosure that CO2 emissions may have been understated in up to 800,000 vehicles.

VW said on November 3rd that it was investigating irregularities that may have arisen in determining the CO2 figures for type approval of about 800,000 vehicles. The automaker at the time named one gasoline unit - the 1.4-liter ACT gasoline engine in VW Polo with cylinder on demand technology. The rest of the engines were diesels.

The company's latest statement said it had identified "implausible" CO2 data in the three-cylinder 1.0L TSI gasoline engine used in the VW Polo, and Seat Ibiza and Leon hatchbacks, as well as the four-cylinder 1.8L TFSI offered with the Leon SC coupe and Sport Tourer wagon. The four-cylinder 2.0L TFSI used in the Golf and Passat was also listed.

VW Jettas with four-cylinder 1.2-liter and 1.4-liter TSI engines were also listed.

All the Audi and Skoda models listed were TDI diesels.

Out of the 430,000 cars with false CO2 emissions, some 282,000 were VW brand vehicles, 83,000 were Skodas, 32,000 were Seats and nearly 16,000 were Audi models. Some VW Caddy and VW Multivan models sold by VW's light commercial vehicle brand are also on the list.

VW said it is informing the relevant type approval authorities of the latest findings, including the German Federal Motor Transport Authority.

VW owners may demand compensation because CO2 emissions are related to fuel economy so their cars are more costly to drive than they had been led to believe. The fuel efficiency deviations were in some cases between 10 percent to 15 percent, VW has said.

German newspaper Bild am Sonntag reported on November 8th that several VW engineers have admitted manipulating engine emissions because CO2 reduction goals set by former CEO Martin Winterkorn were difficult to achieve.

A VW of America spokeswoman said the CO2 issue will not have an impact on the U.S. market. Carbon emissions are calculated differently in the U.S. than in Europe.

MEPs to Investigate Volkswagen Scandal

The European Parliament will investigate alleged regulatory failures by the European Commission and member states that led to the Volkswagen emissions scandal. The Parliament agreed to establish a 45-member inquiry committee to investigate the alleged failure of the Commission to introduce tests reflecting the real-world driving conditions.

Member states and the Commission have agreed on testing rules that would allow carmakers to overshoot agreed emission limits by up to 110%. MEPs will hold a separate vote in January on whether to veto these test rules.

The inquiry will also investigate the alleged failure of member states to establish effective penalties to dissuade manufacturers from infringements. MEPs will also look into whether the Commission and member states had evidence of the use of 'defeat devices', which Volkswagen used to cheat emissions tests, before the scandal emerged in September.

MEPs approved the formation of the inquiry 354 votes to 229, with 35 abstentions. The inquiry will report its findings within 12 months of starting work, with interim results due after six months.

VW Receives Approval to Fix Diesel Cars in Europe

Volkswagen AG won regulatory approval for technical plans to fix 8.5 million diesel engines in Europe equipped with software that cheats on emissions tests, enabling the company to start resolving a scandal that has hurt sales since September. The recall program, scheduled to start early in 2016, applies to 1.2-liter, 1.6-liter and 2.0-liter engines, and the German clearance extends across the European Union's 28 national markets. The 1.2-liter and 2.0-liter engines need only a software upgrade, while the 1.6-liter engine also will require installation of a piece of mesh to regulate air flow. The company expects to start notifying affected customers in the next few weeks and said it will repair their vehicles in stages, beginning with those that need only a software update. Work will start on the 1.6-liter vehicles that need the hardware fix by the third quarter of next year, according to Volkswagen.

The final approval by automotive regulator KBA will let Volkswagen start repairing the bulk of cars that carried the test-rigging software, though the clearance doesn't apply in the U.S., where the issue first came to light three months ago and where regulators have widened a probe. Volkswagen has spent that time trying to rebuild its reputation amid heightened scrutiny and was able to determine last week that separate suspicions of potentially illegal discrepancies in carbon-dioxide emissions readings were unfounded. (See story below.)

The EU anti-fraud office OLAF said on December 16th that it is investigating loans Volkswagen received from the European Investment Bank to produce cleaner engines.

Volkswagen Releases Initial Findings of Investigation

The Volkswagen Group has announced that it is making progress on all five of the priorities it set at the end of October: The technical solutions for customers in Europe have been devised, presented to the authorities, and positively evaluated by them. These solutions will begin to be implemented in January 2016. The emissions investigation is producing results, and initial consequences have already been drawn based on the findings to date. The implementation of the new structure is proceeding according to plan, and the process of developing a new strategy has commenced.

For the first time, the Company provided detailed commentary on the status of its investigation, which is being coordinated by a special committee of the Supervisory Board. Approximately 450 internal and external experts are involved in the investigations, which are being conducted in two phases. An internal review, being conducted by a task force of experts from various Group companies with a clearly defined mandate and a deadline, is focused on the mandate to investigate relevant processes, reporting and monitoring systems, and the associated infrastructure. Group Audit will provide its findings to the external experts of Jones Day. The Supervisory Board has given this internationally respected law firm a parallel mandate to completely clarify the facts and responsibilities – i.e., among other things, it has been asked to conduct a forensic investigation. In connection with its work, Jones Day is being provided with operational support by the audit firm Deloitte.

Extensive internal investigations, which were subject to external independent review, did not confirm the suspicion of irregularities during the CO₂ certification process. Now, the first significant findings in the investigation of the nitrogen oxide (NO_x) issue are available. Group Audit's examination of the relevant processes indicates that the software-influenced NO_x emissions behavior was due to the interaction of three factors:

- The misconduct and shortcomings of individual employees
- Weaknesses in some processes
- A mindset in some areas of the Company that tolerated breaches of rules.

It is clear that, in the past, deficiencies in processes have favored misconduct on the part of individuals. This is true, for example, for test and certification processes affecting our engine control devices, which were not suited to preventing use of the software in question. Group Audit has suggested specific remedies to correct this. We are concentrating on structuring these processes more transparently and systematically. For example, in the future, software for engine control devices will be developed more strictly in accordance with the 4-eyes principle. In addition, the bodies responsible for the release of such software are being reorganized. They will be given more sharply defined and binding powers and responsibilities. Deficiencies were also found in reporting and monitoring systems. The main problem there was that responsibilities were not

sufficiently clear. Volkswagen will now further sharpen them. Group Audit also found deficiencies in some areas of Volkswagen's IT infrastructure. These deficiencies will also be remedied. Volkswagen will introduce IT systems that allow individual processes to be monitored with greater efficiency and transparency. This will simultaneously reduce our dependence on individuals when problematic processes have to be identified and, if necessary, escalated.

The Company has already drawn a key conclusion based on Group Audit's findings, namely that its testing practice must undergo comprehensive changes. Volkswagen has decided that in the future emissions test will be evaluated externally and independently. In addition, randomly selected real-life tests to assess emissions behavior on the road will be introduced.

More time is required for the external investigation for two reasons. The first is that they have a massive volume of data to screen. At present, 102 terabytes of information have been secured, which is the equivalent of the information contained in approximately 50 million books. More than 1,500 electronic data storage units have been collected from approximately 380 employees. The second reason is that their investigation of the facts takes legal responsibility into account. Therefore, their findings must not only be plausible and consistent, but must also hold up in court. Volkswagen plans to provide a status update on the external investigation at its Annual General Meeting on April 21, 2016.

The information that has been screened to date has largely explained the origin and development of the nitrogen oxide issue. It proves not to have been a one-time error, but rather a chain of errors that were allowed to happen. The starting point was a strategic decision to launch a large-scale promotion of diesel vehicles in the United States in 2005. Initially, it proved impossible to have the EA 189 engine meet by legal means the stricter nitrogen oxide requirements in the United States within the required timeframe and budget. This led to the incorporation of software that adjusted nitrogen oxide emission levels according to whether vehicles were on the road or being tested. Later, when an effective technical process was available to reduce NOx emissions, it was not employed to the full extent possible. On the contrary, the software in question allowed the exhaust gas treatment additive "AdBlue" to be injected in variable amounts such that the NOx values were particularly low when vehicles were in the test bay, but significantly higher when vehicles were on the road.

As a first step, nine managers who may have been involved in the manipulations were suspended.

Technical solutions, which have been positively evaluated by the German Federal Motor Transport Authority ("Kraftfahrtbundesamt"), are now available for the European variants of the EA 189 engine type affected. Volkswagen is thus ensuring that the models affected in Europe will meet all legal requirements in the future. (See story below.)The costs of implementing these solutions will be manageable in technical, manufacturing, and financial terms. The software of the 2.0 and 1.2 liter TDI will be updated. For the 1.6 liter TDI, a so-called flow transformer will be used that increases the measurement precision and, in combination with redesigned software, will optimize injection quantity.

Now that the technical solutions have been approved, Volkswagen is working intensely on plans to implement them. The recall of the highest-volume variant, the 2.0 liter TDI, will begin in January 2016. The recall of the 1.2 liter TDI is currently scheduled to begin in the second quarter. The implementation phase for the 1.6 liter models is planned to begin in the third quarter to allow time to prepare for the hardware modification. Under the current plan, the entire initiative will take at least all of calendar year 2016. Matthias Müller, Chairman of the Board of Management, promised: "Volkswagen will not rest until this matter has been resolved once and for all to our customers'

satisfaction." Volkswagen will inform the owners of the affected vehicles individually as to when their vehicles will be updated. Volkswagen guarantees that the solutions will be implemented free of charge. The company waives any statute of limitations for the technical solutions, and will provide an appropriate replacement vehicle if required.

Due to far stricter nitrogen oxide limits in the United States, it is a greater technical challenge to retrofit the vehicles such that all applicable emissions limits can be met with one and the same emissions strategy. To this end, Volkswagen is cooperating closely with the United States Environmental Protection Agency (EPA) and the California Air Resources Board (CARB). The solution designed for North America will be presented as soon as it has been approved by the responsible authorities.

Parallel to overcoming the crisis, Volkswagen is also instituting a comprehensive new alignment that affects the structure of the Group, as well as its way of thinking and its strategic goals. Volkswagen will be managed in a more decentralized fashion in the future, and its brands and regions will be granted more independence. All these structural changes ultimately aim to reduce managerial complexity and ensure that the Group can be effectively led over the long term.

At an organizational level, with the appointment of Dr. Christine Hohmann-Dennhardt, the Integrity & Law area will be represented as its own department on the Group's Board of Management in the future – a clear indication that these issues are extremely important to Volkswagen.

The renewal of personnel in the Group has recently again been given new impetus. Since the beginning of 2015, the Group's Board of Management has seen six new members join, seven of the brands have had their top personnel changed, and eight departments falling within the CEO's area of responsibility now have new heads. Müller stated: "The team with which we wish to address the challenges of the coming months and years is in place." The details of the new structure are to be worked out in the first quarter of 2016. The new structure will be in place Group-wide by the start of 2017.

VW Sales in U.S., Europe Hurt by Diesel Emission Scandal

It's been a little more than three months since the Volkswagen diesel emission scandal erupted into the public eye. Over that time, VW has revealed multiple violations of emissions rules across the globe for roughly 11 million of its TDI diesel cars sold not only by Volkswagen but also Audi and Porsche.

And details of its proposed fix for 482,000 2.0-liter four-cylinder diesels and 85,000 3.0-liter V-6 diesels in the U.S. remain under assessment by the EPA and the California Air Resources Board. (See story below.)

It's not every day that one of the world's three largest automakers admits to flouting the laws of another country, deliberately, over a period of many years. So one of the most pressing questions in the global auto industry has been the impact of the scandal on sales of Volkswagen vehicles, in North America, its home market of Germany, and elsewhere.

The impact on sales for the month of September was mild, since it was only known during the last third of the month--and many sales during that period had been in process for a few days. Sales figures for the month of December and the full year aren't out yet, so it's really the two most recent months that will show any impact.

For the month of November, VW Group sales globally were down 2.2 percent over November 2014: It delivered 833,700 vehicles worldwide, down from 852,900. But that average includes sales increases in China and Europe that offset much steeper declines in North America and elsewhere.

For the 11 months to date of this year, VW Group deliveries fell to nearly 9.1 million from 9.26 million in 2014--a decline of 1.7 percent.

In the U.S., October sales were essentially flat over the same month last year: 30,387 this year against 30,313 in 2014. Those sales may have been supported by a \$2,000 "loyalty bonus" discount offered to current Volkswagen owners on October 7, good only through November 2.

After the bonus expired, total sales for the month of November fell 24.7 percent, from 31,725 to 23,882 deliveries. That 25 percent decline for November roughly corresponds to the percentage of U.S. sales represented by TDI diesels.

Every diesel vehicle sold by VW, Audi, and Porsche has been pulled off sale until regulators approve modifications to bring their emissions into compliance and those changes are implemented by dealers.

In other markets, declines varied.

November sales of Volkswagen vehicles in the U.K. fell by 20 percent, and other VW Group brands--including Seat, Skoda, and Porsche--also logged lower sales. The Society of Motor Manufacturers and Traders reported 12,958 Volkswagen registrations in the U.K. during November, against 16,196 in November 2014.

Vehicle sales in the U.K. market were up 3.8 percent overall, meaning that Volkswagen's market share dropped from 9.4 percent a year ago to 7.2 percent last month. And in Europe as a whole, according to an analysis, Volkswagen lost market share as a small sales increase failed to keep pace with a surging market.

Data from the Brussels-based Association of European Carmakers showed an overall sales increase of 13.7 percent last month, with registrations rising to 1.12 million cars. Sales of the Volkswagen brand rose just 3.1 percent, with VW Group sales as a whole gaining 3.9 percent--meaning market leader Volkswagen's share tumbled from 13.5 percent to 12. 2 percent.

Volkswagen CO2 Problem Smaller Than Expected

Volkswagen announced recently that it overestimated how many cars had incorrect CO2 ratings and the extent of the discrepancy in affected models. It has handed its findings over to the German transport authority, KBA, which will oversee a "re-measurement exercise" to check whether the assessments are correct. KBA is due to make a decision soon.

Volkswagen said its internal investigation of the problem found no unlawful activity.

Nine Volkswagen models, including the popular Golf and Polo, were found to have "slight deviations" in their fuel consumption figures. All of the models had Euro 6 diesel engines.

Volkswagen said last month that it suspected over 800,000 of its cars had higher on-road CO2 emissions than they were marketed as having. But this was not confirmed by the internal investigation, the firm said.

Further action by KBA will only be required if a model's CO2 figures are confirmed as inaccurate, Volkswagen added.

The carmaker said it may also have overstated its profit risk in relation to false CO2 claims, which it had estimated at €2bn. The economic impact of the issue will depend on the outcome of the re-measurement exercise, it said.

The company's US shares rose 8% following the announcement and 5% in London.

Volkswagen Removed From Environmental Index

Volkswagen AG has been suspended from the FTSE4Good Index Series, which is designed to help investors identify companies that best manage environmental, social and governance risks. On December 8th, FTSE Russell, a global index provider, announced it suspended Volkswagen due to the company's actions to mislead government agencies and consumers over the presence of illegal software in the car manufacturer's diesel engine vehicles. FTSE Russell said companies that are suspended from the FTSE4Good Index Series are not eligible to be added back to the indexes for at least two years. Volkswagen was suspended as part of the index provider's semiannual review, which saw the addition of 40 companies and removal of 32 companies. Volkswagen in September admitted that as many as 11 million diesel vehicles worldwide had engines equipped with defeat devices that allowed the vehicles to pass emissions tests despite emitting more pollution than allowed under normal driving conditions. Since news of the scandal broke, Volkswagen has seen its chief executive officer resign, had its credit rating downgraded by several ratings agencies, and has been targeted by hundreds of civil lawsuits by consumers and investors.

6. EU Data Shows Most Automakers Comply With CO₂ Emissions Limit

Almost all automakers that sell cars in the European Union complied in 2014 with an obligation to keep their vehicle carbon dioxide emissions below 130 grams per kilometer (g/km; 209 grams per mile) on average, the European Commission has announced. The exception was British luxury sports car manufacturer Aston Martin, which exceeded its required carbon dioxide emissions level by 0.382 g/km, according to the commission.

As a consequence, Aston Martin will face an "excess emissions premium," the commission said, adding that it will issue a notification "followed by a debit note" to Aston Martin.

The commission's decision making on compliance by manufacturers was complicated, however, by the admission by Volkswagen that there were "irregularities" in its stated vehicle carbon dioxide and fuel economy figures. It had delayed a decision on compliance and any possible excess emissions premium for Volkswagen, and "the 2014 data for the Volkswagen Group will be confirmed by a separate decision as soon as possible," the commission said.

Volkswagen has been caught up in revelations about its use of secret software to circumvent tests for air pollutant emissions in the U.S. and subsequently said an internal investigation had also turned up issues around its test data for carbon dioxide emissions.

Automakers active in the EU are required to keep their cars' emissions on average below 130 g/km by a 2009 regulation ((EC) No 443/2009). The obligation covers all new vehicles from 2015, but in 2014 was required of 80 percent of each manufacturer's new passenger cars registered in the European Union.

The excess emissions premium for noncompliance is calculated on a sliding scale from 5 euros (\$5.30) to 95 euros (\$101) per g/km over the limit per vehicle. Aston Martin, which sold about 1,500 cars in the EU in 2014, is likely to face a minimal levy.

The European Environment Agency (EEA) on November 26th published confirmed data on private car emissions in 2014—with the exception of Volkswagen—as the basis for commission decisions on any excess emissions premiums. According to the EEA data, new cars sold in the EU in 2014 on average emitted 123.4 g/km of carbon dioxide, the same level as contained in provisional data issued in April. Carbon dioxide emissions data is derived from standardized vehicle tests.

The EEA said in a statement that following Volkswagen's notification of irregularities, “it is not possible to assess at this stage the extent to which incorrect data from vehicle manufacturers may alter the analysis and conclusions.”

William Todts, transport manager with Transport & Environment, an advocacy group that has been prominent in highlighting shortcomings in EU procedures for vehicle emissions tests, told reporters that the compliance data for carbon dioxide emissions for cars “lacks credibility.” Car emissions test procedures in the EU commonly produce results that cannot be replicated in real driving conditions, with carbon dioxide emissions from cars on the road about 40 percent to 50 percent higher than the values achieved in tests, Todts said.

He added, however, that Toyota “seems to have achieved the emissions goals also in reality,” and PSA Peugeot Citroën was working with Transport & Environment on generating real-world carbon dioxide emissions data for its cars, which would be publicly disclosed. Todts could not say when disclosure might start.

Under an EU regulation adopted in March 2014, automakers also must prepare for a tougher carbon dioxide emissions target of 95 g/km for new cars in average, which will start to take effect in 2020.

7. UK Chancellor Announces £600m Low Emission Vehicle Boost, Cuts DEFRA Budget

A £600 million boost to encourage the uptake of ultra-low emission vehicles (ULEVs) over the next five years was among government spending plans laid out by the Chancellor on November 25th. Chancellor George Osborne also recently announced cuts to four department's spending.

And, as well as laying out the detail on spending cuts at Defra, George Osborne said he would delay the removal of the 3% diesel supplement on company car tax until 2021, which will leave drivers of such vehicles facing higher than expected bills from next April.

However, there were no changes in the Vehicle Excise Duty in order to take into account emissions such as NO₂ and particulate matter from vehicles, as was called for last week by the Environmental Audit Committee.

Elsewhere, the Chancellor's Autumn Statement also committed more than £300 million to cycling investment over the next five years, including the £114 million Cycle Ambition City scheme to construct segregated cycle lanes of 115km in Birmingham and 56km in Manchester.

Between 2015-16 and 2020-21, the government said it will spend more than £600 million to support the uptake and manufacturing of ULEVs in the UK "maintaining the leadership that has seen 1 in 4 of all European electric vehicles built here and keep the UK on track for all new cars to be effectively zero emission by 2040".

According to the Treasury, this investment will save 65 million tonnes of carbon and "help deliver the Long Term answer on urban air quality".

The Society of Motor Manufacturers and Traders (SMMT) welcomed the £600 million funding for ULEVs for helping to "maintain the UK's position as Europe's fastest growing market for these new technologies".

In his House of Commons speech, Mr. Osborne said: "The development and sale of ULEVs will continue to be supported – but in light of the slower than expected introduction of more rigorous EU emissions testing, we will delay the removal of the diesel supplement from company cars until 2021."

The Treasury said that the new EU real world driving (RDE) test procedures confirmed last month to gradually come into force from 2017 "will ensure new diesel cars meet air quality standards even under strict real world driving conditions".

Meanwhile, the Chancellor also revealed the extent of central government departmental spending cuts, with the announcement that day-to-day spending on the environment will be cut by 15%. This was less drastic than previous suggestions earlier this month that Defra would be facing cuts of around 30% to its spending. However, Defra is still set to be 'streamlined' – reducing its administration budget 26% by 2019/20 in a bid to save £123 million.

The 15% savings are to be delivered through efficiencies within the department and across its network. Defra will become a more 'digital department' with shared back office functions and roles devolved to the local frontline.

At the same time, Defra will continue to cut regulatory red tape for businesses with a view to secure net savings of £470 million by the end of the current Parliament.

Elsewhere, the Department for Transport (DfT) has agreed to make resource savings of 37% by 2019-20, while Transport for London will need to make a 6% efficiency saving to its annual budget with the announcement that it will lose its resource grant from the government over the next five years.

And, with local authorities at the forefront of the government's draft UK air quality plan, the Chancellor announced reductions to the local government grant of £6.1 million by 2019-20, although the Treasury said that overall spending in this area would be higher in cash terms by then than it is currently.

The Department for Communities and Local Government (DCLG), meanwhile, will need to make resource savings of 29% over the next five years "through better financial management and further efficiency".

8. 2015 EU Transport Scoreboard

The 2015 edition of the EU Transport Scoreboard compares Member State performance in 29 transport-related categories and highlights the five top and bottom performers in each of these categories. As of this year, it is also possible to track Member State progress over time.

The scoreboard can be consulted either by country or by one of the following categories:

- **Internal Market:** One of the Commission's priorities is to create a deeper and fairer internal market. This category includes indicators such as the market share of rail undertakings competing with the main operator and the employment share in high growth transport enterprises. It also includes the number of pending court cases for an alleged infringement of EU law and the state of transposition of EU transport directives.
- **Investments and infrastructure:** Investment in transport infrastructure has a huge potential in boosting growth and jobs. Member State performance is measured here in indicators such as the perceived quality of transport infrastructure and progress towards completion of the TEN-T core network.
- **Energy Union and innovation:** Transport accounts for 24% of all greenhouse gas emissions and for 32% of all energy used in Europe. Research and innovation are key to progress in this area. Member State performance is shown for example in the share of renewable energy in transport fuel consumption and private expenditure in research and development.
- **People:** The Commission works towards safe, available and affordable transport for everyone. This category includes indicators on road and rail safety, as well as customer satisfaction with urban, rail and air transport. It also highlights the percentage of women employed in the transport sector.

How are EU Member States performing?

In **Austria**, the share of renewable energy in transport fuel consumption is the third highest in the EU. Its road safety score has improved and now corresponds to the EU average.

The quality of **Belgium's** port infrastructure is rated very positively, putting Belgium in third place EU-wide. The infrastructure for the other modes of transport is also rated highly. It has room for improvement as regards its road safety score.

Bulgaria has a high share of electrified railways, over 71%, and its total share of renewable energy in fuel consumption for transport corresponds to the EU average. However, it is among the Member States with the highest number of road fatalities in Europe.

Croatia scores 100% in the number of transport related directives transposed into national law, bringing it to the top of the ranking. The average time it takes to import and export goods by sea can be expected to improve with further progress in completing the TEN-T core network.

Cyprus has no rail network, so several indicators of the scoreboard do not apply to it. It has the highest percentage of women working in transport in the EU (32%). However, there is a relatively high number of court cases because of alleged infringements of EU law pending, especially in the road sector.

The **Czech Republic** scores highly in the share of women employed in transport, taking the second place in the EU. Competition both in the freight and passengers' rail market has grown considerably in recent years.

Drivers in **Denmark** spend less time in traffic jams than anywhere else in the EU. The share of renewable energy in transport fuel consumption is above EU average and rising. The average time it takes to import and export goods into and out of Denmark by sea is amongst the shortest EU-wide (5.5 days).

Estonia and **Denmark** share the title of the EU's top performer as regards the average time to import and export goods by sea. Estonia receives relatively low ratings for its transport infrastructure apart from its port infrastructure, which is rated positively.

Finland's quality of rail, port and air infrastructure is rated second best in the entire EU. Ratings for its road infrastructure have deteriorated slightly. The share of employment in quickly growing transport enterprises in Finland has increased significantly in recent years.

France is rated highly for its road and railroad infrastructure, and the share of renewable energy in transport fuel consumption is high. Private expenditure in research and development is the second highest in the EU. However, the number of newly registered cars using alternative fuels is relatively low.

Germany gets high ratings for its transport infrastructure for all means of transport, although the ratings are slightly less positive than in the previous reporting period. Germany is also among the top 5 performers as regards the share of renewable energy in fuel consumption for transport.

In **Greece**, consumer satisfaction with rail, urban and air transport is higher than the EU average. However, drivers in Greece spend a lot of time in traffic jams. The share of women working in transport in Greece is one of the lowest in the EU, only 16%.

The share of women working in the transport sector is quite high in **Hungary** (26%). However, its score concerning the percentage of EU transport related directives transposed into national law is the lowest in the EU (96%).

Ireland records a perfect 100% score for the transposition of EU transport directives into national law. However, it has the lowest share of electrified railway lines in the EU as well as very few new cars that use alternative fuels.

As regards the use of alternative fuels in new passenger cars, **Italy** registers the highest number due to the sales of LPG and NG vehicles. Italy has a relatively high number of pending court cases concerning alleged infringements of EU law.

Latvia has very few pending court cases about alleged infringements of EU law in the area of transport and it scores a perfect 100% for transposing EU transport directives into national law. However, it records the highest number of road fatalities per million inhabitants in the EU.

Lithuania tops the EU ranking for the employment share in high growth transport enterprises with a wide margin. However, only very few new cars in Lithuania use alternative fuels.

Luxembourg leads the ranking as regards the electrification of railway lines, with more than 95% of its lines electrified. It receives excellent consumer satisfaction ratings as regards all modes of

transport. However, Luxembourg has the lowest share of women employed in transport in the entire EU.

Malta has no rail network, so a number of indicators in the scoreboard do not apply to it. In 2014, Malta recorded the best road safety score in the entire EU. The share of renewable energy in transport fuels and the number of new cars using alternative fuels are low.

The **Netherlands** receive the highest overall score in this year's scoreboard. The Dutch transport infrastructure is rated very highly, in particular the port and aviation infrastructure is perceived as the best in the EU. The Netherlands also take second place Europe-wide regarding the share of new vehicles using alternative fuels.

Poland has a high share of electrified railways (over 62%), as well as a high share of renewable energies in fuel consumption. Ratings of the quality of transport infrastructure in Poland are more positive than in the previous reporting period.

Portugal has already completed 100% of its TEN-T core network for roads, and the quality of the Portuguese road infrastructure is rated as the highest in the EU. Competition in both the freight and passengers rail market is lower than in other countries.

Romania's market share of rail freight companies competing with the main operator is the highest in Europe (56.8%). However, in the passenger market, the share is lower. Romania has improved its road safety score, but is still among the countries with the highest number of road fatalities.

Slovakia is among the top 5 performers as regards the share of new cars using alternative fuels and the employment in high growth transport enterprises. However, its air transport infrastructure is rated poorly.

Slovenia scores highly for private expenditure in research and development by transport companies. It has made progress in improving its road safety score. However, Slovenia is close to the bottom of the ranking as regards the share of women employed in transport, only 16%.

Spain is far advanced as regards the completion of the TEN-T core network. However, it scores among the lowest in the EU regarding the employment share in high growth transport enterprises.

Sweden takes the lead in the share of renewable energy in transport fuel and it is in third place in the share of new cars using alternative fuels. Swedish roads are amongst the safest in the EU. However, Swedish consumers are rather critical in their evaluation of air, rail and urban transport.

The **United Kingdom** is far advanced in its completion of the TEN-T core network, with the conventional rail network already fully completed. The market share of competitors in passenger rail is the highest across the whole EU (89.7%). The UK is also among the top 5 performers as regards the average time it takes to import and export goods by sea.

9. Sweden Considering Tax on Air Travel

The Swedish government has commissioned a study into how it could introduce a tax on air travel that would reduce the aviation industry's carbon footprint and lower the impact on the climate, the tax agency announced on November 5th.

Aviation plays a major role in growth and jobs in Sweden, “not least for the parts that are far from urban areas,” the announcement said. With its goal to become one of the world's first fossil-free welfare countries, the tax agency said it was “therefore reasonable to investigate how air travel can carry a larger share of the cost of their greenhouse gas emissions.”

The study into the potential tax will explore:

- how the tax can be developed to encourage more efficient transport and reduce climate impact;
- a framework that would encourage consumers to choose more environmentally friendly options; and
- how the tax can interact with other government policies, such as job creation and competitiveness.

The committee examining the tax, headed by General Counsel Gabriella Loman, will issue its report by November 30, 2016.

10. Lawmakers' Committee Rejects Proposed EU Exhaust Emissions Rule

The environment committee, in an evening vote on December 14th, rejected by 40–9, with 13 abstentions, a commission decision that would allow automakers to exceed legal limits on nitrogen oxides (NOx) from passenger cars by a factor of 2.1 through 2020.

Current EU laboratory tests on emissions of pollutants such as nitrogen oxides are widely regarded as flawed, with vehicles complying with pollutant limits during laboratory tests, but in some cases significantly exceeding those limits on the road. To account for uncertainties in real-world driving tests, the commission said vehicles should be able to exceed the legal limit for nitrogen oxides by 110 percent through January 2020 and by 50 percent thereafter.

Under the latest generation of EU limits on exhaust pollutants, known as Euro 6, nitrogen oxide emissions should not exceed 80 milligrams per kilometer (mg/km). The leeway the commission proposed, in effect, would increase the limit to 168 mg/km, dropping to 120 mg/km after 2020.

The environment committee resolution rejecting the proposal said allowing the commission's proposed exceedance would “result in a de facto blanket derogation from applicable emissions limits,” and the commission should submit a new proposal by April 1, 2016.

The environment committee's objection must be ratified by a vote of the full Parliament, which will take place during a January 18–21, 2016, session.

Environment committee lawmakers signaled during a meeting in November that they would push for a rejection of the commission's decision on the basis that it would give automakers too much leeway and would undermine the credibility of pollution limits in EU legislation. The scandal surrounding Volkswagen in the U.S., where the company was found to be using hidden software in some vehicles to cheat pollutant emissions tests, highlighted for lawmakers the extent to which legal limits were being flouted.

The European Parliament said in a December 14 statement that in rejecting the commission's proposed decision, environment committee members had taken into account an analysis by the commission's own in-house science service, the Joint Research Center that estimated an 18.75 percent to 30 percent margin of error for on-road car emissions tests.

A Commission spokeswoman told reporters that if the full European Parliament rejects the draft decision in January, then “the procedure stops,” and the commission could propose a new decision that a regulatory committee would vote on and that also would be subject to a potential European Parliament veto. Alternatively, the commission could put forward “a full legislative proposal,” that would have to be jointly decided on by the European Parliament and by EU member states represented in the Council of the EU.

New EU on-road tests for vehicle air pollutant emissions will take effect beginning in September 2017. Erik Jonnaert, secretary-general of the European Automobile Manufacturers' Association, said this date could be “in jeopardy” if the European Parliament blocks the proposal on leeway to meet emissions limits. A rejection in January “would increase uncertainty for the industry and leave little time to make the necessary changes to vehicles and assembly lines,” and would “delay the benefits for the environment,” Jonnaert said.

11. German Emissions Scandal Threatens To Engulf Mercedes, BMW

The results of the nitric oxide tests carried out by environmental group Deutsche Umwelthilfe (DUH) and German state broadcaster ZDF - who broadcast it on December 15 - appeared to show similar discrepancies between “test mode” and road conditions to those found in Volkswagen cars earlier this year, revelations that triggered one of the biggest scandals in German automobile history. In response to the report, a law firm representing Daimler, which owns Mercedes, sent a letter to the DUH that read, “Should you in any way present the accusation that my client manipulated its emissions data, we will act against you with all necessary sustainability and hold you responsible for any economic damage that my client suffers as a result.”

The law firm, called Schertz, also warned the DUH against publishing the letter itself, but the group defied this and posted the letter in full on its website.

“We have been massively threatened two more times, demanding that we take down the letter - we have told them we won't,” DUH Chairman Jürgen Resch told reporters. “For me it's a very serious issue, because in 34 years of full-time work in environmental protection, and dealing with businesses, I have never experienced a business using media law to try and keep a communication - and a threatening letter at that - secret.”

“How are we supposed to do our work as a consumer and environmental protection organization when industry forbids us from making public certain threats it makes?” an outraged Resch added. “I think the threat itself is borderline legal coercion.”

In the documentary, ZDF tested three diesel cars - a Mercedes C200 CDI from 2011, a BMW 320d from 2009, and a VW Passat 2.0 Blue Motion from 2011 - and showed that all three produced several times more nitric oxide on the road than they did in an official laboratory test. “The measurement results show that the cars behave differently on the test dynamometer than when they are driven on the road,” said the laboratory at the University of Applied Sciences in Bern, Switzerland, which carried out the tests.

The discrepancies were not small. While all three cars kept comfortably below the European Union's legal nitric oxide limit (180 milligrams per kilometer) in the lab, out on the road the BMW recorded 428 mg/km (2.8 times its lab result), the Mercedes hit 420 mg/km (2.7 times its lab result), and the VW Passat reached 471 mg/km (3.7 times its lab result).

Daimler did not respond to a request for comment from the press, but company spokesman Jörg Howe told the "taz" newspaper (Die Tageszeitung) that the company could not verify the test result and pointed out that the cars had already been used. "No one can rule out that they weren't damaged or manipulated by a third party," he said. He also said outside temperatures, road surfaces, and wind could all have played a part in the discrepancy. A spokesman for BMW denied to ZDF that it used any kind of manipulative device.

"The federal automobile authority [KBA] is currently carrying out tests on the affected Volkswagen diesel models as well as other major manufacturers of diesel cars ... the tests are taking place both on the 'roller' and on the street," the German Transport ministry said in a brief statement.

12. U.K. Extends Subsidies for Buyers of Greenest Cars

The U.K. government has announced a long-term extension to the plug-in car grant, backed by a £400 million (\$595 million) package. With the grant to continue from the previous deadline of February 2016 until at least the end of March 2018, the government says this will mean more than 100,000 people will benefit – double the number who have claimed the grant since 2011.

Announcing the extension, Transport Minister Andrew Jones says it means from next March, buyers of the greenest cars can save up to £4,500 (\$6,696) on the overall purchase price. "The U.K. is a world leader in the uptake of low-emission vehicles and the plug-in car grant has been key to that success," Jones said in a statement.

"We are determined to keep Britain at the forefront of the technology, increasing our support for plug-in vehicles to £600 million (\$893 million) over the next five years to cut emissions, create jobs and support our cutting-edge industries."

Nissan GB Managing Director Jim Wright said the decision reaffirms the government's commitment to the uptake of ultra-low-emissions vehicles. "This announcement, together with ongoing infrastructure developments, should see the growth and wider deployment of this technology continue," he said.

The grant was created in 2011 to encourage sales of ultra-low-emissions vehicles and has been instrumental in the U.K. becoming the biggest ULEV market in the European Union, and the fourth-largest in the world. Some 50,000 people have received the grant.

From next March, vehicles with a zero-emissions range of more than 70 miles (112 km) will benefit from a grant of £4,500. Vehicles with a shorter zero-emissions range, such as plug-in hybrid vehicles with a gasoline or diesel engine, will receive £2,500 (\$3,720).

Sales of ULEVs have doubled over the past year with motorists having a choice of 29 ULEVs on the market, five times as many as when the plug-in car grant was launched.

The U.K. is also at the forefront of the rollout of hydrogen-fuel-cell vehicles, which also are eligible for the £4,500 grant thanks to their zero tailpipe emissions.

The government also says it will continue to provide a grant to help ULEV owners have a dedicated charge point installed at their home. From next March, the electric-vehicle home-charge scheme will offer £500 (\$744) an installation, on average about half of the cost.

"To encourage zero-emission vehicles and maximize the number of everyday motorists who can benefit from government support, a price cap will also be introduced from March 1," the government statement says. Models with a list price of more than £60,000 (\$89,281) will not be eligible for the grant, but all vehicles with a zero-emissions range of more than 70 miles (113 km) will be eligible for the full £4,500 grant.

13. Rome Limits Cars as Many Italian Cities Struggle with Air Pollution

Rome is limiting auto circulation, and other Italian cities have been offering free bus rides to encourage public transport use as the country battles seasonal air pollution that has been worsened this year by long spells of no rain and little wind.

As it has done several times this fall, Rome has limited the number of cars and motorcycles on its roads using a system based on license plates. Vehicles with plates ending in an odd number were banned Monday and vehicles with plates ending in an even number were banned Tuesday.

"The high concentrations of particulate matter and nitrogen dioxide continue, aggravated by the weather situation of high pressure and absence of wind," Rome's city hall said. Traffic police scrutinized license plates of passing cars. Violators risk a 150-euro (\$165) fine.

In northern Turin, public transport was free for two days this month to try to entice commuters away from cars. Milan recently put limits on more-polluting diesel cars for three days, and the city's residents were asked to turn down thermostats by 1 degree. Parents accompanying their children to and from Milan's schools could ride free on buses and trams.

Little relief is in sight, with more rainless days predicted for the rest of the month.

"Smog, there's an alarm in all of Italy," read a headline in Turin daily La Stampa recently. Levels of particulate matter, considered especially harmful to health, are expected to run two or three times the level allowed by the European Union, especially in the Milan area, experts have predicted.

The Italian health and environment ministers have agreed to back anti-pollution measures with a special 5-million-euro (\$5.5 million) fund, in part to compensate cities for lost revenues when public transport is free on smoggy days.

Rome merchants have voiced fears that limiting cars will discourage shopping in the holiday gift-buying season.

14. UK Publishes Final Plan for Clean Air Zones

The UK government has confirmed plans to restrict the entry of polluting vehicles into five English cities to meet EU air pollution standards. Clean air zones (CAZs) will be introduced in Birmingham, Leeds, Southampton, Nottingham and Derby by 2020, under plans by the Department of Food, Environment and Rural Affairs (DEFRA) published recently. Older diesel buses, coaches, taxis and lorries will have to pay a charge to enter the cities while cleaner vehicles will get in for free.

Broader measures will apply in Birmingham and Leeds, who's CAZs will extend to older diesel-fueled vans. These cities will also have to implement park-and-ride schemes, alter road layouts and provide infrastructure for alternative fuels such as liquefied petroleum gas and electric recharging points.

DEFRA was required to publish the new plans by the end of the year after the UK Supreme Court upheld a challenge by legal NGO ClientEarth, stating that the government had not put in place sufficiently ambitious plans to comply with NO2 limits set in the EU's Ambient Air Quality Directive.

Cities other than the five named by DEFRA will be free to adopt CAZs, which will be divided into four classes. The toughest of these, class D, would cover private cars.

London has already outlined plans to tackle air pollution by introducing an 'ultra-low emission zone' (ULEZ) by 2020, retrofitting NO2 abatement to buses and requiring new taxis to be 'zero emission capable' from 2018. The ULEZ would be broadly equivalent to a class D CAZ.

"While London gets a clean air zone covering all vehicles, Birmingham gets a second class zone and Derby and Southampton third class, while other areas including Manchester and Liverpool are left out. We all have the same right to breathe clean air," said Alan Andrews of ClientEarth.

15. Poland Faces Court over Air Pollution

The European Commission is taking Poland to the EU court over "persistently" exceeding EU pollution limits for dust particles. The daily limit values of PM10 had exceeded limits set in the Ambient Air Quality Directive in 35 out of 46 air quality zones in the country for the last five years. In nine zones, the annual limits had been exceeded, the Commission said.

Poland received a final warning in February, but the "measures taken so far to limit this persisting non-compliance have been deemed insufficient", the Commission said.

Infringement actions for excessive fine dust particles are also being pursued against a number of other member states:

- Bulgaria has already been referred to the EU court over the issue.
- The Commission is also taking Greece to the EU court over poor waste management on the island of Corfu where the Temploni landfill is alleged to be breaching EU waste and landfill legislation. Problems at the site include improper management of biogas, missing treatment of liquid draining from the landfill, and the presence of waste not permitted for treatment at Temploni, the Commission said.
- Spain was given a final warning to implement the EU Timber Regulation and the Enforcement, Governance and Trade Regulation (FLEGT) of the Forest Law. The Timber Regulation bans illegally harvested wood from being placed on the EU market, while the FLEGT establishes a licensing scheme to verify the legality of timber imports from countries participating in the scheme. The Commission sent a formal letter to Spain on the issue in June, but the country has yet to designate competent authorities for the implementation of both regulations. Spain has two months to act. If it fails to do so, the country could be taken to the EU court.
- The Commission also requested Belgium, Cyprus and Greece to enact rules on the prevention of industrial accidents under the Seveso III Directive. They have two months to respond or potentially face court action.

16. EU Sues Germany for Using Banned Car Coolant

The European Union took Germany to court for permitting Daimler AG to use a refrigerant for car air conditioning systems that is banned because of its global warming potential. The European Commission said the German government breached a 2006 EU law prohibiting the air conditioning systems of autos certified after the start of 2011 from being filled with a refrigerant called R-134a. Stuttgart, Germany–based Daimler continued to produce and sell cars with R-134a, refusing to switch to a more climate-friendly coolant known as R1234yf because of flammability concerns that the EU says are groundless. “The German authorities did not take the necessary action to ensure that the vehicles were brought back in conformity with EU law by ordering Daimler AG to recall the vehicles and make the necessary technical adaptations,” the commission, the 28-nation bloc's regulatory arm, said in a statement. The case will be heard by the EU Court of Justice in Luxembourg. The spat has threatened to undermine the EU's goal of leading the fight against climate change and to fragment the bloc's single market. R-134a has a global warming potential higher than the limit set by EU law and Daimler's refusal to switch to R1234yf—which is made by Honeywell International Inc. and DuPont Co.—prompted France two years ago to suspend Mercedes-Benz auto sales in the country.

17. EU Ministers Weaken Proposed Air Pollution Cuts

Environment ministers from the European Union's 28-member States pushed back against cuts to emissions of nitrogen oxides, sulfur dioxide and other air pollutants that the European Commission, the EU's executive arm, said should be achieved by 2030. Meeting on December 16th in Brussels, the ministers agreed to a compromise position on a revision of the EU's National Emissions Ceiling Directive (NEC Directive, 2001/81/EC), which watered down national emissions reduction targets compared to the commission's December 2013 proposal.

When national targets contained in the directive are tallied, the EU-wide cut by 2030 that ministers agreed to for sulfur dioxide would be 78 percent, relative to 2005, compared to the 81 percent target the commission proposed. The cut for nitrogen oxides would be 62 percent compared to the commission's 69 percent; for non-methane volatile organic compounds it would be 39 percent compared to 50 percent; and for ammonia it would be 18 percent compared to 27 percent. Ministers also reduced a proposed emissions cut for fine particles (PM-2.5) from 51 percent to 45 percent, and dropped reduction targets proposed by the commission for methane.

The Council of the EU, which represents member states, said in a statement that methane was lowered “because of concerns about overlaps with future measures on climate and energy, linked to emissions of greenhouse gases.”

The proposed emissions cuts are provisional because the council must agree on the final revision of the NEC Directive in negotiations with the European Parliament. The council said it would seek “to reach an agreement in the short term” with Parliament on a final text of the NEC Directive. Parliament voted its position on the directive in October, in which it endorsed the air pollutant cuts the commission proposed.

The NEC Directive implements the EU's commitments under the Gothenburg Protocol to the United Nations Convention on Long-Range Transboundary Air Pollution, which aims to limit the main pollutants that cause acid rain.

The proposed revision of the directive goes beyond the Gothenburg Protocol by setting emissions reductions for 2030, but the revision also implements in EU legislation cuts that should be achieved by 2020 in line with amendments to the Gothenburg Protocol agreed to in 2012.

Ministers were unable to endorse the 2030 pollutant cuts that the commission proposed because of specific concerns in some countries about certain pollutants, according to Carole Dieschbourg, environment minister of Luxembourg, which holds the presidency of the Council of the EU through December 31. Dieschbourg said four “normally ambitious” countries—Austria, Denmark, Germany and Poland—“could not live with the numbers that have been proposed.” Denmark, for example, has high ammonia emissions from livestock farming and Danish farmers' groups complained that the country's ammonia reduction target was excessive and would lead to high costs.

During the meeting in Brussels, a number of ministers from other countries said they would only grudgingly accept the watering down of the reductions proposed by the commission. Swedish State Secretary for Climate and Environment Yvonne Ruwaida said Sweden was “not satisfied” with the compromise, which meant “member states with a more ambitious agenda are now in danger of suffering,” because of cross-border air pollution.

Karmenu Vella, EU commissioner for environment, maritime affairs and fisheries, signaled that discussions would continue on the level of emissions reductions, despite agreement among member state ministers that talks could be opened with the European Parliament to finalize the NEC Directive. The agreement among member states was a “good negotiating basis,” but “the process is still open,” Vella said.

Catherine Bearder, a British Liberal member of the European Parliament's environment committee, which will be involved in final negotiations with the council, said she will seek to overturn the council's position and reinstate higher reduction targets, including for methane.

NORTH AMERICA

18. VW Brand Sales Plunge 25% Amid Tight Supplies, Diesel Scandal Fallout

VW said its sales dropped 25 percent to 23,882 vehicles, its second-lowest monthly total of 2015 behind January. It was the steepest monthly decline for the VW brand since Sept. 2008.

The November decline reflects a 2,381-unit reduction in sales of non-diesel models in addition to shortfalls caused by the TDI sales freeze, which last month grew to include Touareg SUVs powered by the 3.0-liter V-6 diesel in addition to the 2.0-liter models that were grounded in September.

VW, in a statement, blamed the declines on the stop-sales orders. “Volkswagen is working tirelessly on an approved remedy for the affected TDI vehicles,” VW of America COO Mark McNabb said in the statement. “During this time we would like to thank our dealers and customers for their continued patience and loyalty.”

Diesels accounted for 5,462 of the 31,725 VW vehicles sold in November 2014, according to VW of America. After adjusting for the loss of diesels, deliveries of all other VW models fell by 2,381 units from November 2014, or 9 percent. VW's highest-volume nameplates were among the hardest hit, with Jetta compact sedan sales falling 23 percent and Passat midsize sedan deliveries dropping 60 percent.

The brand's roughly 650 U.S. dealers also had to battle tight inventories last month. Dealer stocks at the beginning of November were at their lowest levels of their previous 12 months, according to data from TrueCar.com. There were a few bright spots: Tiguan compact crossover sales surged

88 percent to 3,907 units while strong deliveries of the electric e-Golf and GTI hot hatch kept the Golf family afloat, posting a 3 percent gain.

Through 11 months, the VW brand's U.S. sales were down 4 percent to 318,484 vehicles.

19. Ontario Issues Compliance Order to Volkswagen

Ontario has directed Volkswagen Group Canada Inc. to provide it with detailed information on how it plans to address its use of devices or software to defeat emissions control technology on vehicles sold in the province. The Ministry of the Environment and Climate Change issued a Provincial Officer's Order on November 23rd giving the company until December 4th to provide details on all vehicles sold in Ontario with the defeat devices. The order also requires VW to provide detailed plans to address the problem in Ontario within three days of submitting such plans to either the U.S. Environmental Protection Agency or the California Air Resources Board.

20. Senators Warn Obama on Binding Climate Deal

President Barack Obama must submit to Congress for review any international agreement reached at a December UN climate summit that includes binding emissions targets or timetables, the Senate Environment Committee chairman said in a letter to the White House released on November 18th.

Any agreement "with binding timetables and targets must be brought before Congress for approval," wrote Sen. James Inhofe (R-Okla.), who chairs the Senate Environment and Public Works Committee, and Sen. John Barrasso (R-Wyo.), who chairs a Senate Foreign Relations subcommittee.

The letter was released at a hearing Inhofe held in his committee to focus on the push by nearly 200 nations to get a United Nations climate agreement at the talks in Paris. It is the latest salvo by Republicans in Congress who hope to undercut the administration's efforts to get a global climate accord signed at the Paris talks.

The senators, who have been circulating the letter for additional signatures in recent days, also warned the president that U.S. offers of aid to help vulnerable nations adapt to rising sea levels and other climate impacts could essentially be held hostage by the Republican-controlled House and Senate unless the global climate deal is submitted to Congress. .

Republicans in the House and Senate have long threatened to block such funding but have yet to have much success. The administration announced in November 2014 that it would pledge \$3 billion over four years to the Green Climate Fund, which has received more than \$10 billion in international pledges, mostly from developed nations.

In July, for example, the Senate Appropriations Committee voted 16-14 for a Democratic amendment to strip out Republican-authored language that would have required Obama to get a specific authorization from Congress to proceed with the aid. Republican Sens. Mark Kirk (Ill.) and Susan Collins (Maine) voted for the amendment, offered to the fiscal year 2016 funding bill for the State Department and related agencies.

The Obama administration has long sought a Paris agreement that is a mix of legally binding and nonbinding elements, with countries voluntarily putting forth pledges to cut emissions but subjecting those reductions to binding transparency and verification requirements. Thus, the

administration argues, the U.S. can likely agree to the Paris deal under Obama's executive authority without submitting it for Senate ratification.

Congress may bar funding “until the forthcoming climate agreement is submitted to the Senate for its constitutional advice and consent,” according to the letter from Inhofe and Barrasso, which Republican aides said would be sent to the president on November 19th.

The U.S. and other developed nations have pledged \$100 billion in annual public and private financing beginning in 2020, a finance offer that is widely seen as crucial to getting developing nations to sign onto the global climate deal in December.

The November Senate committee hearing—held as the House Science, Space, and Technology Committee also met to hone in on the Paris agreement across the Capitol—was the last salvo by Republicans to undercut Obama and U.S. participation in the Paris deal. They have opened attacks on multiple fronts, including attempts this week to kill carbon pollution limits for U.S. power plants.

Two Senate resolutions passed, but by votes of 52-46, well short of the two-thirds majority the chamber would need to overcome an Obama veto.

In the weeks ahead, Republican senators may offer a “sense of the Senate” resolution that they hope will be a sort of no-confidence vote in Obama's authority to sign on to the Paris deal.

Neither the Senate Environment Committee nor the House Science panel were able to procure an Obama administration witness for their respective hearings. At the House hearing, Chairman Lamar Smith (R-Texas) questioned the Obama administration's efforts to link climate change to increasingly severe and frequent storms and other weather events and said the president has pursued a go-it-alone strategy to circumvent Congress.

“There is a reason the president chose to bypass Congress in order to negotiate a climate deal on his own,” the House chairman said. He said Obama's acceptance of any deal in Paris would give away “control of U.S. energy policy to un-elected United Nations officials” and only seeks “to advance a partisan political agenda.”

If agreed to, the Paris deal would be the first to commit industrialized and developing nations alike to curb greenhouse gas emissions linked to rising global temperatures.

The Paris talks are being held just six years after similar negotiations toward a global climate agreement nearly collapsed at a 2009 Copenhagen summit.

21. VW Gets Extended Deadline from California for Diesel Emissions Plan Review

The California Air Resources Board said it was extending a deadline to approve or reject a diesel emissions repair plan submitted by Volkswagen AG for 2.0-liter vehicles until January 14th. On November 20th, VW submitted a repair plan to the Environmental Protection Agency and California Air Resources Board for 482,000 diesel Jetta, Beetle, Passat and Golf cars built between 2009 and 2015 with software that allows them to emit up to 40 times the legally allowable pollution in real-world driving.

In a letter to VW made public, the Air Resources Board said that after getting updates from VW this past week on its proposed plan, it would extend its deadline to consider the plan by about three weeks.

VW spokeswoman Jeannine Ginivan said the automaker continues "to fully cooperate with EPA and CARB as we work to develop an approved remedy as quickly as possible."

VW has said that newer vehicles will require a software upgrade, but older vehicles will require the addition of new emissions hardware, along with new software.

On Thursday, VW appointed compensation expert Ken Feinberg to design and manage an independent claims program that could include buyback offers, cash compensation or other remedies. VW faces more than 500 civil lawsuits over the diesel emissions.

The EPA and California are awaiting a separate repair plan from VW by early February for 85,000 larger luxury cars and SUVs with 3.0-liter engines with a separate emissions issue.

VW halted sales of 2016 2.0-liter diesel models in September and expanded the halt to larger 2016 diesel models last month. It also applies to certified pre-owned diesel vehicles on dealer lots.

VW faces investigations around the world, including from the U.S. Justice Department, and could face up to \$21 billion in U.S. fines for violating the Clean Air Act.

The EPA declined to comment on Europe's approval of the VW fix. Chris Grundler, who heads EPA's Office of Transportation and Air Quality, told reporters "that the Volkswagens in America are very different than those in Europe."

22. Volkswagen Consumer Lawsuits Sent to California Court

Consumer lawsuits against Volkswagen of America Inc. over the use of emissions cheating software in the company's diesel engine vehicle fleet have been transferred to a California district court (In re Volkswagen "Clean Diesel" Mktg., Sales Practices and Prod. Liab., MDL, No. 2672, transfer order issued 12/8/15).

The U.S. Judicial Panel on Multidistrict Litigation issued a December 8th order transferring 63 pending consumer lawsuits to the U.S. District Court for the Northern District of California and selected Senior District Judge Charles R. Breyer as the transferee judge. An additional 451 potentially related actions against Volkswagen were identified by the panel as "potential tag-along actions" that could also be sent to the San Francisco-based district court under the panel's conditional transfer process.

The Judicial Panel on Multidistrict Litigation, which is tasked with determining if civil actions pending in different federal district courts should be transferred and consolidated, said in its order that while many district courts could ably handle the litigation against Volkswagen, the Northern District of California is the appropriate district to oversee the consumer litigation.

The panel cited the high number of lawsuits filed in California and the likelihood of relevant documents and witnesses being present in California as reasons supporting its decision. In addition, the panel said it selected Breyer, who has presided over nine previous multidistrict litigation dockets, as the transferee judge because he is "thoroughly familiar" with how to handle

complex litigation. “We are confident that Judge Breyer will steer this controversy on a prudent and expeditious course,” the panel said.

The consumer lawsuits were filed on behalf of consumers who purchased or leased 482,000 diesel vehicles sold in the U.S. under the Volkswagen and Audi brands that were outfitted with illegal technology, known as defeat devices, that allowed the vehicles to pass emissions tests despite emitting more nitrogen oxides pollution than allowed under actual driving conditions.

In addition to civil lawsuits, Volkswagen also faces billions of dollars in civil penalties and possible criminal charges in the U.S. and Europe over the emissions scandal.

The panel made its decision just five days after a hearing in New Orleans on what court would be the proper venue to oversee the consumer litigation. Parties advocated for 28 different possible districts, including courts in Michigan, Texas, Tennessee, Virginia, Ohio and New York.

Volkswagen and the U.S. Justice Department both advocated for the U.S. District Court for the District of Michigan to be chosen as the transferee district. That district is home to both Volkswagen's Engineering and Environmental Office in the U.S. and the Environmental Protection Agency's automobile testing laboratory.

In its order, the panel acknowledged that the Volkswagen emissions controversy affected multiple districts across the U.S., including districts home to Volkswagen's manufacturing plants and U.S. corporate headquarters. “While all of these districts may yield some or even much discovery, no single district possesses a paramount factual connection to these cases,” the panel said.

The panel did not determine whether it should include in the multidistrict litigation claims brought by investors who purchased Volkswagen's preferred and ordinary American depository receipts, derivative securities that represent an ownership interest in shares of the foreign company. Volkswagen had requested that the securities claims, which allege the receipts were purchased at “artificially inflated prices,” should be assigned to the same Michigan court where the company requested the consumer claims be sent. The panel said the securities actions were not presently before them and it would address the question of the inclusion of those cases in the conditional transfer order process.

23. Cheap Gas Spurs SUV Sales and Puts U.S. Climate Goals at Risk

Surging demand for trucks and SUVs fueled by cheap gasoline is holding back improvements in U.S. fuel economy and greenhouse gas emissions, a new government report shows. The report, “Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 – 2015” reaches several conclusions:

- Average vehicle CO₂ emissions rate and fuel economy were unchanged in MY 2014
- Light truck fuel economy reached a record high at the same time as consumer demand for light trucks increased in MY 2014
- Vehicle power and footprint are trending higher while weight is fairly flat
- Many technologies continue to gain market share
- Consumers have an increasing number of high fuel economy/low CO₂ vehicle choices
- Most manufacturers decreased CO₂ emissions and improved fuel economy in MY 2014
- Manufacturers are producing many vehicles today that can meet future CO₂ emissions targets

The disconnect between consumer demand for larger, less efficient vehicles and the Obama administration's climate goals sets up a clash between the auto industry and federal regulators.

Mark Rosekind, who heads the National Highway Traffic Safety Administration, said in a Reuter's interview the administration will consider automakers' arguments that the shift away from cars makes it harder to hit the 2025 fleet average fuel economy target of 54.5 miles (87.7 km) per gallon.

But the landmark agreement announced in France, to transform the world's fossil fuel-driven economy in bid to arrest global warming, could make a cut in the target difficult for the U.S. government to accept. "Unfortunately there have been too many decisions that are made - 'Oh, prices went down, it's OK again,'" said Rosekind. "No, it's not."

Consumers are responding to signals from gas pumps, where a combination of relatively low taxes - federal gasoline taxes have not gone up since 1993 - and oil unleashed by hydraulic fracturing or fracking have pushed U.S. gasoline prices to an average of just over \$2 a gallon - the lowest level in six years.

In November, fuel efficiency of vehicles purchased fell sharply to 25 mpg - down 0.8 mpg from a peak in August 2014, said University of Michigan researcher Michael Sivak, who tracks fuel efficiency.

Nearly 59 percent of U.S. vehicle sales this year have been of sport-utility vehicles, pickup trucks or other larger vehicles, up from 54 percent last year, according to industry consultant Autodata Corp. Toyota Motor Corp says within two years its RAV4 SUV will displace the Camry mid-size car as its top-selling model in the United States.

The report from the Environmental Protection Agency shows that trucks are becoming more efficient, but those gains are largely being offset by the shift in some buyers from cars to trucks.

Automotive fuel efficiency rules are a cornerstone of President Barack Obama's climate policy. The administration has said better fuel efficiency will cut 6 billion metric tons of greenhouse gases over the lifetime of the vehicles sold between 2012 and 2025. That is more than the total amount of carbon dioxide emitted by the U.S. economy in 2010, the administration has said.

The fuel economy rules for 2017-2025 will cost the industry \$157.3 billion, according to Obama administration estimates, but would save consumers as much as \$488 billion at the pump assuming gas prices average \$3.53.

However, those goals are at risk. Federal regulators and California are working on a report, due in mid-2016 that will set the terms of bargaining with automakers over whether efficiency standards for a final 2022-2025 period should be eased, stay the same or made tougher. Automakers have met with regulators in recent months for day-long individual meetings to talk about their confidential future product portfolios and discussed how they plan to comply with the fuel efficiency increases.

"There is a huge gap looming between government projections and consumer purchases of highly fuel-efficient vehicles," said Gloria Bergquist, a spokeswoman for the Alliance of Automobile Manufacturers - the trade association representing major automakers. The industry group is

pushing proposals to allow automakers to get greenhouse emissions credits for adding technologies that could help avert crashes.

Environmentalists say automakers are not doing enough to cut greenhouse gas emissions. "They are driving up oil consumption and pollution and putting at risk U.S. compliance with the Paris global warming agreement," said Daniel Becker, director of the Safe Climate Campaign.

Renault-Nissan Chief Executive Carlos Ghosn said he is not betting on relief. "I'm not expecting it to become easier," he said earlier this year.

24. EPA Issues Final Renewable Fuel Standards

EPA is finalizing the volume requirements and associated percentage standards that apply under the RFS program in calendar years 2014, 2015, and 2016 for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel. EPA is also finalizing the volume requirement for biomass-based diesel for 2017.

The final requirements will boost renewable fuel production and provide for robust, achievable growth of the biofuels industry. The final rule considered the many public comments EPA received on the proposal, and incorporates updated information and data. EPA is finalizing 2014 and 2015 standards at levels that reflect the actual amount of domestic biofuel used in those years, and standards for 2016 (and 2017 for biodiesel) that represent significant growth over historical levels.

Final Renewable Fuel Volumes

	2014	2015	2016	2017
Cellulosic biofuel (million gallons)	33	123	230	n/a
Biomass-based diesel (billion gallons)	1.63	1.73	1.90	2.00
Advanced biofuel (billion gallons)	2.67	2.88	3.61	n/a
Renewable fuel (billion gallons)	16.28	16.93	18.11	n/a

(Units for all volumes are ethanol-equivalent, except for biomass-based diesel volumes which are expressed as physical gallons.)

Final Percentage Standards

	2014	2015	2016
Cellulosic biofuel	0.019%	0.069%	0.128%
Biomass-based diesel	1.41%	1.49%	1.59%
Advanced biofuel	1.51%	1.62%	2.01%
Renewable fuel	9.19%	9.52%	10.10%

The final 2016 standard for advanced biofuel is nearly 1 billion gallons, or 35 percent, higher than the actual 2014 volumes, while the total renewable standard requires growth from 2014 to 2016 of over 1.8 billion gallons of biofuel, or 11% higher than 2014 actual volumes. Biodiesel standards grow steadily over the next several years, increasing every year to reach 2 billion gallons by 2017.

On June 10, 2015, EPA published the proposed volume requirements and associated percentage standards that would apply under the RFS program in calendar years 2014, 2015, and 2016 for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel, and the proposed volume requirement for biomass-based diesel for 2017.

25. Public Health and Environmental Groups File Suit Against Smog Standard

Earthjustice representing the Sierra Club, Physicians for Social Responsibility, West Harlem Environmental Action, Appalachian Mountain Club, and the National Parks Conservation Association has filed suit to challenge the national ozone standards adopted in October. The EPA's standards are weaker than what medical experts have called for according to Earthjustice. They fail to protect against thousands of deaths and hospital and emergency room visits, and hundreds of thousands of asthma attacks that could be prevented by more protective standards, the groups contend.

The EPA set its new standards at the very weakest level it considered, 70 parts per billion (ppb), despite findings by the agency's science advisors that harms to health occur below this level, especially for vulnerable populations. The EPA also rejected calls from the National Park Service to establish a separate standard calibrated to protect trees, crops and other plants from ozone-caused damage.

"This standard leaves kids, seniors and asthmatics without the protection doctors say they need from this dangerous pollutant," said David Baron, an attorney at Earthjustice, the nonprofit law firm representing the coalition of health and environmental organizations. "The EPA has a duty to set standards that assure our air is safe to breathe. We say they violated that duty here."

This case is the latest in a series of court actions over more than a decade that seeks stronger protections against ozone pollution. In 2008, the Bush EPA set national standards for ozone at 75 ppb, weaker than the unanimous recommendation of the EPA's own science advisors. Earthjustice challenged the 2008 standards on the ground that the EPA's action was arbitrary and contrary to the language and purpose of the Clean Air Act. In March 2013, EPA missed its legally binding deadline to review and update the standards, and Earthjustice later secured a court-ordered deadline to enforce compliance.

Though the groups contend the 2015 standards are too weak, they are an improvement over the existing Bush-era standards. As a result, Earthjustice representing several health and environmental groups last month filed court papers to oppose a major coal company's efforts to roll them back.

26. Final Transportation Bill Supports Electric-Cars

Electric-car advocates can end the year on a high note, thanks to several provisions in the final Federal transportation bill approved earlier this month. The Fixing America's Surface Transportation Act (FAST Act) was signed by President Barack Obama on December 4. It authorizes funds for highway construction and maintenance and public transportation, but also includes a few provisions that should help promote electric cars.

- One of the items in the final bill is a mandate for the Department of Transportation (DOT) to designate corridors for electric-car charging and hydrogen, natural gas, and propane fueling on the nation's highways. These corridors will be chosen based on perceived demand for the infrastructure, the strategic importance of a stretch of highway, and pre-existing charging and fueling infrastructure. The DOT must designate these corridors by December 2016, with an update and re-designations every five years. Once a corridor is designated, officials will set goals for the deployment of infrastructure there.

- Another infrastructure-related measure authorizes the General Services Administration to install charging stations at its facilities for use by its employees and those of other Federal agencies. These stations will be made available for charging privately-owned electric cars; the people using them will pay for the electricity used. Electric-car drivers will have to pay fees substantial enough for the agencies to eventually recover the costs of installing and operating the stations.
- An additional measure extends provisions related to carpool-lane exemptions to plug-in electric cars and alternative-fuel vehicles through September 30, 2025.

And beyond the measures related to electric cars, there were a couple of other noteworthy items related to reducing transportation emissions.

- The bill also calls for the establishment of fuel-efficiency standards for passenger-car tires by December 2017.
- There is also a provision calling for "regulatory parity" for natural-gas vehicles by 2016, rather than 2019, as previously discussed. One of the expected outcomes of this measure is a new method for calculating fuel economy for natural-gas vehicles that allows more direct comparisons with gasoline and diesel cars. For now, though, Congress does not appear ready to approve a tax credit for natural-gas vehicles similar to the one already available for plug-in electric cars.

27. Ontario Funding Charging Stations for Electric Cars

The Ontario government will invest C\$20 million (\$15 million) in 2016 to build additional public charging stations for electric vehicles, the Ontario Ministry of the Environment and Climate Change said on December 8th. The funding from the C\$325 million (\$237 million) Ontario Green Investment Fund will provide grants to public and private sector partners to establish a network of fast-charging electric vehicle stations in cities, along highways and at workplaces, apartments and other public places, the ministry said in a statement. "This initial investment is just the start of many more bold steps we'll be taking to promote electric cars as a sustainable transportation choice and to reduce greenhouse gas pollution in other sectors," Environment and Climate Change Minister Glen Murray said in a statement issued at the global climate change summit in Paris. Full details of the program are to be unveiled before the end of December. The Canadian Vehicle Manufacturers Association welcomed the announcement as another step in transitioning the province's infrastructure to support electric vehicles and other autonomous car technologies that can reduce greenhouse gas emissions. "Consumers want confidence that the recharging infrastructure is in place to support a decision to buy electric," Mark Nantais, the lobby group's president, said in a statement. "CVMA supports this investment, as well as other mutually supportive policies such as consumer purchase incentives, supports for home and workplace charger installation, HOV lane access and building code changes." Ontario has about 5,400 registered electric vehicles, the ministry said.

28. Canada Commits to Fight Short-Lived Pollutants

Canada committed C\$35 million (\$26 million) toward global efforts to reduce short-lived climate pollutants, it announced at the Paris climate talks. The funding, including a C\$10 million (\$7.3 million) contribution to the international Climate and Clean Air Coalition Trust Fund, recognizes the need to reduce short-lived climate pollutants as part of a broader strategy to slow global

warming, Environment and Climate Change Canada said on December 8th. The remaining C\$25 million (\$18 million) will be allocated to mitigation projects with key partner countries, including efforts to reduce black carbon emissions in the Arctic. Short-lived climate pollutants, including black carbon, methane, tropospheric ozone and hydrofluorocarbons, have a shorter lifespan than other greenhouse gases and are also known to cause respiratory and other negative health effects.

ASIA PACIFIC

29. Beijing to Adopt World's Strictest Vehicle Emissions Standard

Municipal authorities in Beijing have started soliciting public opinion about proposed new vehicle emission standards. Under the proposal, which covers both passenger and commercial vehicles, Beijing's Environmental Protection Bureau is hoping to cut vehicle emissions by 30-percent in the next 7-years.

Director of the bureau's vehicle management office, Li Kunsheng, says it's time to adopt the world's strictest emissions standard in the city. "In the Beijing-Tianjin-Hebei region, fresh air is not enough. So we have to implement the most stringent emission standards in the world. Also, we need to give car makers around two years to produce new vehicles which adapt to the new emission standard."

Phase-6 of the emission standards will require passenger vehicles to pump out 40-percent less exhaust in 2-years' time. Vehicles with larger motors, such as buses and industrial vehicles, are going to have to cut their emissions by 50-percent.

Currently, vehicles in Beijing need to meet the fifth phase emissions standard, which went into effect in 2013 and is equivalent to the Euro 5 emissions cap.

Li Kunsheng says other measures will be adopted to help reduce emissions. "We have decided to install particle trap devices for heavy diesel vehicles and other vehicles with big emissions. It's hopeful that their pollutants emissions can be reduced by 90 percent."

It's been announced that the new emission standard is expected to be implemented in December, 2017.

The bureau estimates that pollutants emitted by vehicles will be cut by 30 percent by 2022.

For LDVs, Beijing 6 standard adopted California LEV III's ULEV 70 bin as the maximum emissions limits, 5 test cycles (FTP, cold temperature FTP, HWY, US06 and SC03), OBD II requirements as of the 2015 version, and a 200 thousand km durability requirement. And Beijing proposed a set of PEMS-based emissions limits for in-use conformity: not exceeding 1.2 times the FTP limits.

The HDV standards are more innovative! There are two sets of requirements in parallel: Euro VI equivalent engine-based emissions limits; and a set of full-vehicle based emissions limits. The full-vehicle emissions standard includes chassis dynamometer testing method and emissions limits as 1.2 times the Euro VI WHTC limits. Beijing also adopted CARB's newly released defeat device screening test requirements using PEMS testing. In addition, Beijing requires remote OBD testing as part of the in-use conformity requirements.

30. NGOs Win China's First Public Interest Environmental Lawsuit

The first public interest case taken under China's new environmental law has ultimately proved successful, providing a model for similar action elsewhere, but getting cases heard in central and western China remains difficult.

Late last month a court in China's south-eastern Fujian province ruled in favor of environmental groups that filed a lawsuit against a quarry company for pollution near the city of Nanping. The case was originally submitted on January 1, the same day a new environmental law came into effect, and was the first public interest case to be heard this year. The new law aims to give the authorities more power to enforce anti-pollution measures and fine wrongdoers, and also make it easier for some environmental groups to take cases against polluters.

Although few environmental NGOs have been able to have cases heard, the new environmental law has shown that it's possible for them to get favorable rulings from judges, said Wang Canfa, a professor at the China University of Politics and Law and founder of the Center of Legal Assistance for Pollution Victims.

The defendants in the case illegally quarried stone and dumped waste material between 2008 and 2011. Despite orders from the Ministry of Land and Resources to halt operations, the quarry's owners continued to build roads and damage local forests. In 2014, a Fujian court found three defendants guilty of the illegal appropriation of agricultural land and sentenced them to jail. Subsequently, Friends of Nature and Fujian Green Home Environmental Friendly Center filed a lawsuit asking the courts to order the plaintiffs to remove quarrying equipment and waste material, and to restore the forest to its original state.

The court ordered the quarry company to pay fines totaling 1.46 million yuan (\$230,000) in compensation for "loss of environmental benefits" and legal costs. The defendants were also given five months to restore the environment at the site, or a further 1.1 million yuan (\$172,000) will be levied in fines.

Wang Canfa says the court ruling could set precedents for future cases. First, the presiding judge demanded environmental restoration from polluters, whereas penalties under previous laws punished the act of pollution itself.

Second, it is also noteworthy that the Nanping court deemed the NGOs as suitable to bring the case before the Supreme Court interpretation of the new environmental has been issued. The law requires NGOs bringing a case to have been registered for five years, but organizations often re-register due to changes in name or management. Waiving this technicality will allow many more groups to bring cases, legal experts say.

Ge Feng, director of the legal and policy department at Friends of Nature, expressed satisfaction with the result, particularly the size of the fines: "In the past, fines and awards (to plaintiffs) weren't that high. This is important for cash-strapped NGOs."

The compensation for the loss of environmental benefits was also a new idea, which the court backed. Ge thinks those bringing other cases in the future will gain valuable insight from the Fujian quarry case. Evidence gathered by local prosecutors for the 2014 trial was vital to Friends of Nature's lawsuit.

Different organizations are facing different issues in bringing similar cases. Friends of Nature has submitted six this year, although three cases were rejected. However, Ge feels it is no longer as difficult to get a case heard as it had been previously. Hu Yulai, an environmental public interest lawyer in Beijing, also says cases he is handling are proceeding smoothly.

However, the China Biodiversity Conservation and Green Development Foundation is finding the process much more difficult, with only a handful of 21 cases the organization submitted this year being heard.

The main problems, said Ma Yong, the secretary of the foundation, are the capability of local courts to hear such cases, and judicial independence. "The courts are mostly taking a cautious approach. They are worried that cases will cause trouble for the local government, and as they haven't heard public interest cases before, they are unsure how to handle them or how to reach a verdict," Ma said.

Environmental courts in economically developed areas are better prospects, but getting cases heard in central and western China is difficult, Ma added. In August his foundation successfully submitted a case over the ConocoPhillips oil leak in Tianjin, but most of the unsuccessful cases it has taken were in relatively remote Inner Mongolia and Ningxia, including eight lawsuits related to pollution in the Tengger Desert.

Friends of Nature is no longer focused on getting the cases heard and is instead working on gathering evidence for the hearings. But organizations working in western and central China may need to spend more time just to get their day in court.

31. China Maps Out Policies to Drive Emissions Reductions

China's upcoming 13th Five-Year Plan and its Made in China manufacturing plan will be the driving forces behind the nation's emissions reductions efforts and industrial reform. These plans will help China on the road to becoming cleaner and more efficient, said speakers at the Oct. 29–30 Eco-Expo Asia in Hong Kong. The official 13th Five-Year Plan document will be released at the annual National People's Congress meetings in Beijing in March 2016.

While many of its anticipated actions are carry-overs from the current 12th Five-Year Plan, one significant item mentioned but not yet detailed is aligning local environmental protection bureaus directly with provincial-level environmental protection bureaus instead of the local governments, which they are subservient to.

The new five-year plan also calls for more in-depth air, water and soil pollution action policies to be enforced under China's tougher amended Environmental Protection Law (EPL), which took effect on January 1.

"The biggest change has been in legislative philosophy with the amendments to the EPL giving environmental protection a new priority that elevates it to the level of basic national policy," Chen Xuebin, a partner at the law firm Li & Partners in Shenzhen, said. "The amended law gives environmental policies as much or greater priority than economic and social development."

The higher industrial emissions targets included in the Made in China 2025 Manufacturing Plan, released earlier this year, mean that industry will "have to deploy cleaner production technologies" to survive and thrive, said Tsang Kam Lam, deputy chairman of the Green Strategy Alliance, a nonprofit group in Hong Kong. The manufacturing plan has embraced several of the key strategic

industry goals outlined in the 12th Five-Year Plan and added others as well, including reducing coal ash waste.

In addition, China's 2012 Clean Manufacturing Promotion Law has been a boost to transforming traditional industry and will be upgraded in the next five-year plan. Under this amendment, companies have to meet more stringent air pollution targets for sulfur dioxide and nitrogen oxide emissions, as well as water emissions measurements of chemical oxygen demand and ammonia nitrogen reduction; increase controls on emissions of volatile organic compounds and solid wastes; and improve energy efficiency and carbon intensity reductions, according to Huang Jianping, chairwoman of Guangdong Provincial Cleaner Production Association.

Together, the two plans will compel companies that have outdated production systems to either upgrade technologies to meet the tougher emissions standards or shutter operations that are no longer efficient, according to the expo speakers.

32. Kandi Technologies to Announce Work on Electric Cars

Kandi Technologies Group Inc. plans to work with companies including Alibaba Group Holding Ltd., Uber China and China Minsheng Banking Corp. to promote connected electric cars, according to press reports.

Zhejiang Geely Holding Group Co. and ZTE Corp. also will be among the companies that plan to sign a manifesto in Hangzhou, China, on November 10th.

The companies will form a group of strategic partners to work together on areas conducive to promoting connected electric cars. Alibaba will support the initiative with its Big Data analytics and cloud computing services, ZTE will provide its wireless charging technology while Uber will contribute its car-sharing know-how, according to reports.

The initiative takes place after the central government in July unveiled a plan to link technology companies with manufacturers under an Internet+ plan to rejuvenate traditional industries through the use of services such as cloud computing and artificial intelligence. Promoting the use of electric cars and reducing air pollution are also national priorities, with China pouring billions into subsidies and research grants into battery development and the building of charging stations.

In October, the State Council, or Cabinet, said it will add to subsidies aimed at speeding up the building of electric-car recharging stations, targeting enough infrastructure to handle 5 million plug-in vehicles by 2020.

Besides manufacturing and selling EVs to consumers, Kandi also provides them for short-term hire using automated multilevel garages. It has expanded its services to more than 10 Chinese cities with more than 16,000 electric cars, according to the company.

Kandi, which makes cars with joint venture partner Geely Automobile Holdings Ltd., plans to announce that it will add 200 Gleagle K17 electric cars to its rental network.

33. Beijing's Smog Pollution Worsens: School Children Told To Stay Indoors



Recently, around 900 micrograms of PM 2.5 per cubic meter was recorded in the southern parts of the city. The WHO safety limit is only 25 micrograms of PM2.5 per cubic meter. (Photo: Kevin Frayer)

Beijing's air pollution has gotten so bad recently that city officials have told school children to stay indoors. The

capital has been on "orange alert" due to the air pollution, which is 3,500 percent above the World Health Organization (WHO) safety standards.

The BBC reported that city authorities have ordered factories to either reduce or completely stop their production and a truck ban has been imposed. Building constructions have also been temporarily halted in order to stop the further deterioration of the city's air quality. The smog has gotten so thick that visibility has been reduced to around half a kilometer or less in certain parts of the city.

Chinese President Xi Jinping is currently out of the country attending the international conference on climate change in Paris, France.

Coal is being pinpointed as the main culprit behind the thick smogs enveloping the capital city. Winter has forced industrial and commercial establishments as well as private homes to increase their use of coal both in production and for heating. A majority of the country's power plants use coal.

A Chinese woman, identified as Yin Lin, told reporters that if city officials cannot remedy the situation, she may consider living somewhere else. She was being interviewed while bringing her daughter to a medical facility. Air pollution has long been a major problem in Beijing and many Chinese cities. As a result, many local residents suffer from air pollution related illnesses.

The country's environmental regulators told reporters that out of the total 74 cities in China, around only eight of them still have air that is safe for humans. Most of the heavily air polluted cities are located in the Northeastern part of China.

34. Beijing's Super Commutes Reflect a City Bulging At the Seams

The commute for millions of people living in and around Beijing is a daily grind that is ever more time-consuming, costly and crowded as residents dodge, push and elbow their way onto buses and subways. And there is no immediate relief in sight in a city that has more than 21 million residents and is growing fast.

Indeed, expansion over the next 15 years will put the Chinese capital at the center of a new megacity, as it integrates with the port city of Tianjin and neighboring Hebei province, officials say. Current estimates of the population in the combined area is around 110 million.

By the time it is completed, the Beijing-Tianjin-Hebei project will span 212,000 square kilometers (82,000 square miles), or more than twice the size of South Korea.

Infrastructure has not yet caught up with the population growth - rail lines and highways are still under construction and road traffic is often gridlocked.

Given the existing commuter woes in Beijing, some critics are raising questions about urban sprawl and the potential environmental impact of the megacity. Traffic jams in and around Beijing have become notorious, including one in 2010 that stretched 60 miles (100 km).

State planners say that by 2020 a transportation network will span the megacity cluster, and signs of progress should be seen by 2017, according to the official Xinhua news agency, which cited a government document.

For the moment, getting to work can take time and patience. The average Beijing commute has stretched to 52 minutes, placing it 4 minutes above the average commute in New York City, and 1 minute above Shanghai's, according to surveys.

Beijing residents have worked out creative ways to avoid peak-hour jams. Some wake before dawn, some share taxi rides, others use car-hailing apps.

35. China's Sea Level Rises Faster than Global Average

A new study has revealed that China has seen more severe effects from climate change than other countries, Xinhua reported. The study found that between 1980 and 2012 the sea level along China's coast rose 2.9 millimeters per year, while between 1909 and 2009 average temperatures in China rose a total of 0.9C, rising higher than global averages. The report, which will be released during climate talks in Paris, is further evidence of how China, the world's biggest emitter of CO₂, also stands to see some of the strongest impacts from global warming.

36. Costs of Curbing Pollution in China

A study has found the cost of controlling China's air pollution is likely to be higher than previously expected, China News Service reported. The study, by the Chinese Academy for Environmental Planning and Nanjing University, found that the 2013-2017 'Action Plan on Prevention and Control of Air Pollution' would need a total of RMB1.84 trillion (US\$289 billion), 8% more than previously forecast. Last year, China's government established a RMB10 billion (US\$1.56 billion) fund to tackle pollution, but this will not cover the huge costs of cleaning up the country. The Clean Air Alliance of China, which released the study, said pollution control is over-reliant on government funds and that new funding channels, such as those raised through the private sector, should be established.

37. Tesla Completes North-South Chain of Charging Stations for Electric Cars

With two new "super charge stations" in Nanchang and Hefei, US electric car company Tesla has completed a chain of charging stations which makes it possible to drive its cars all the way from Harbin in China's far north down to the south coast city of Shenzhen, passing through Beijing and

Shanghai, Xinhua reports. According to the article, China now has 320 of Tesla's "super chargers" which allow its cars to travel 300km after a 20 minute charge, as well as 1,500 "destination chargers". For Tesla, and other electric car companies, inadequate charging infrastructure has dampened customer demand.

38. India Proposes To Accelerate Introduction of Tighter Vehicle Emissions Standards

India has decided to prepone adoption of BS VI (equivalent to Euro VI) emission standards. A notification to that effect was released by the Ministry of Road Transport and Highways:

Recall that when the auto fuel policy expert committee suggested a roadmap, they went with BS IV in 2017, BS V emission standards in 2020 and BS VI in 2024. Subsequent to that, ICCT sent a letter to the Ministers of Petroleum as well as Transport on why a leapfrog to BS VI by 2020 makes sense. The Auto Industry responded by agreeing to advance the implementation date by one year (BS V in 2019 and BS VI in 2023).

The final decision of the government is BS IV in 2017, BS V in 2019 and BS VI in 2021.

39. Toxic Air Worsens in India as Fires, Lax Enforcement Continue

The air pollution meter buzzed and spat out a stunning result: levels of PM2.5—tiny, toxic particles that lead to respiratory diseases—were 27 times the safe limit near the Indian Parliament in New Delhi on the morning of November 4th. The reading of 675 micrograms per cubic meter of air exceeded the highest measured this year in Singapore, as Indonesian plantation fires led to some of the murkiest haze the city state has seen.

U.S. satellite images indicate the smog in New Delhi is being thickened by smoke billowing south from Punjab state, where farmers are flouting a ban on the use of fires to clear straw and waste crop. That is just one example of how India is struggling to impose environmental rules, showing the challenge Prime Minister Narendra Modi faces to implement wider initiatives, including curbing greenhouse gas emissions under a plan filed with the United Nations.

"There's a lot of noise in India on environment," Sunita Narain, director general at the Centre for Science & Environment in New Delhi, said in a press interview. "But there's no effective action, as there's no enforcement."

India in October was the last major nation to submit its approach to tackling emissions ahead of a landmark UN climate change conference in December, pledging to cut their intensity about a third by 2030 from 2005 levels. Modi wants clean energy sources such as solar and wind to account for 40 percent of installed electricity capacity in 15 years, reducing reliance on coal.

The World Bank in 2013 put the annual cost of environmental degradation in India at 3.75 trillion rupees (\$57 billion). The question is whether the nation, one of the world's top polluters, has the ability to measure emissions accurately, impose environmental regulations and fund the \$200 billion clean energy expansion the government is targeting.

The U.S. embassy in New Delhi classed the city's air on November 4th as hazardous. It advised avoiding all physical activity outdoors, adding that vulnerable people and children should stay inside.

Tiny particulate matter in high amounts can cause respiratory disease by going deep into the lungs, as well as harm the heart and enter the bloodstream. The World Health Organization's 24-hour mean guideline for PM2.5 is 25—a fraction of the reading in New Delhi on November 4th.

Vehicle fumes, another contributor to the city's pollution, illustrate the challenge of lax emission controls. India's Central Pollution Control Board in 2013 reported that some centers conducting vehicle checks had faulty or fake software. There are about 8.8 million commercial and passenger vehicles on the capital's roads. "The system of checking vehicle pollution needs to be tightened," the board's New Delhi-based Chairman Arun Kumar Mehta said. "The government is looking into it."

A panel of lawmakers in April blamed inadequate monitoring and enforcement for a sharp rise in pollution across India. The committee said regional environment offices were understaffed and that the number of industries inspected has declined in recent years.

Oversight often depends on self-monitoring by industrial units, again raising questions about whether the results would be accurate. "Self-monitoring is the way to go and we are promoting it," Mehta said. "It's our most important initiative, and 1,600 industrial units have installed online devices. We get an alert if there's a violation and we look into it."

Aside from cars and trucks, millions of India's poor burn fires for domestic use as well as farming. Wealthier folk use belching diesel generators as grid electricity is unreliable.

Modi's agenda for a cleaner India includes steps to attract green investment. Tycoons including SoftBank Group Corp.'s Masayoshi Son, Foxconn Technology Group's Terry Gou, Liang Wengen of Sany Group, Chint Group Chairman Nan Cunhui and Bharti Enterprises Pvt.'s Sunil Mittal have announced plans for at least \$25 billion investment in renewables.

At the same time, budget allocations for the federal Environment Ministry have declined for two straight fiscal years. "Our pollution control boards have virtually no equipment and no laboratories," said Narain from the Centre for Science & Environment.

40. India's Choked Capital Starts 'Pollution Toll' For Trucks

Delhi has introduced a toll for all trucks and commercial vehicles in an attempt to improve air quality in the world's most polluted capital ahead of Diwali celebrations. Trucks are banned from entering the Indian capital during the day, but every night after 8pm more than 50,000 pour in, according to the Delhi-based Centre for Science and Environment (CSE).

The independent centre says lorries account for nearly a third of the pollution in Delhi, adding to a toxic mix of industrial fumes and dust from construction sites to produce hazardous levels of smog.

Last month, India's Supreme Court approved a four-month trial plan to charge light commercial vehicles an extra 700 rupees (\$11) and large trucks 1,300 rupees to enter Delhi. "The legal principle on which this charge has been levied is the principle of 'polluter pays'," Supreme Court lawyer Harish Salve, whose petition prompted the October 12 order, told AFP.

Successive Delhi governments have faced flak for failing to curb pollution in the Indian capital, whose air quality is worse than even Beijing's. A World Health Organization study of 1,600 cities released last year showed Delhi had the world's highest annual average concentration of small

airborne particles known as PM 2.5. These fine particles of less than 2.5 micrometers in diameter are linked to higher rates of chronic bronchitis, lung cancer and heart disease as they settle into the lungs and can pass into the bloodstream.

Many trucks transit through Delhi only to avoid paying tolls outside the city, and authorities hope the new toll will encourage drivers to use alternative routes.

But some have expressed doubts over how effectively it will be enforced, especially after authorities failed to implement a 2001 Supreme Court order banning trucks from passing through the city.

Greenpeace India said the order, which excludes passenger vehicles, oil tankers and trucks carrying foodstuffs, would only divert pollution rather than reduce it, and that drivers would be able to circumvent the toll by using unchecked entries. "We have to see the effectiveness of it, but this is not going to solve all the problems," campaigner Sunil Dahiya told AFP.

The city is expected to have the world's highest number of premature deaths due to air pollution by 2025 with nearly 32,000 fatalities, according to a study by Germany's Max Planck Institute for Chemistry.

With more than 8.5 million vehicles on Delhi's roads and 1,400 new cars being added every day, city authorities will have their work cut out to reduce pollution. The city annually experiences a deterioration in air quality when winter sets in as farmers in neighboring states begin the mass burning of stubble that follows the harvest. Smoke from open fires lit by the poor to keep warm adds to the problem, while Diwali, the Hindu festival of light, traditionally sees Delhi fill with acrid smoke from firecrackers.

Delhi held its first "car-free day" recently -- although it restricted the initiative to the city center and chose a public holiday, when traffic would in any case have been much lower than usual.

41. Delhi Government Receives IIT-K Study on City's Air Pollution

The long-awaited study on Delhi's air pollution prepared by a team of IIT Kanpur, has identified emissions from vehicles, thermal plants and biomass burning in neighboring states as the "dominant factors" and has proposed a switch to Euro VI norms among other radical measures to combat the menace.

A copy of the report that was submitted to the Environment Department recently has been forwarded to the Chief Minister's office. A detailed discussion will be undertaken and its final version made public by second week next month.

The report of the study, "Source Apportionment Study of PM2.5 and PM10" that was commissioned in 2013, is likely to effect major policy changes. It is "nuanced" and is over 300 pages long, a senior government official said.

"The report clarifies which source is more damaging, components of the pollutants, especially during winters when pollution peaks, which may put an end to the lobby fighting which is prevalent today among transporters, industry and other sectors," the official said.

It takes note of the fact that pollution in Delhi cannot be treated in isolation and takes into account sources contributing in and around 300-km radius of the city, which automatically factors in the crop residue burning.

The suggestions are more constructive and in nature as it focuses on the 'dos' rather than 'dons'. "Congestion tax and other are more regulatory in nature but the solutions proposed like the replacing of Euro IV by Euro VI may prove to be game changers," the functionary added.

But most of the measures, suggested in the report, would require considerable investment and cooperation of neighboring states, the official added.

42. Air Pollution Sees an Increase, Noise Levels Dip This Diwali

Railway Road was the noisiest area in the city during the Diwali festival period, while Cantonment Board area was the quietest, shows data recorded by the Uttar Pradesh Pollution Control Board (UPPCB). While the noise pollution was lower than for the corresponding period last year, air pollution levels shot up considerably, the statistics revealed.

The UPPCB recorded noise levels at as many as eight locations in the city on November 5 and November 11 (Diwali day) during the festive season. Railway Road area, with an average decibel count of 80.4 decibels (dB) on Diwali, was the noisiest in the city. Interestingly, this year's average noise level was 0.1 dB lower than the highest noise level recorded in 2014 at Begum Bridge area (80.5 dB).

These readings were taken from 6 pm to midnight. "Considering how aware people have become about burning firecrackers, we were expecting low air pollution as well as noise pollution this year. However, noise levels dipped only by 0.1 dB this year and air pollution levels increased quite considerably," said BB Awasthi, Meerut region head, UPPCB.

The other noisy areas included Thapar Nagar (75.9 dB), Shastri Nagar (75.9 dB), Pallavpuram-I (73.9 dB) and Collectorate area (72.4 dB). The only area which recorded noise levels lower than an average of 60 dB on Diwali was Cantt Hospital area (52.5 dB).

Meanwhile, the level of pollutants in the air has risen. The UPPCB recorded the ambient air quality on November 5 and November 11. The data shows that the level of particulate matter (PM) in the air shot up on Diwali day. PM 10 was recorded at 162.6 microgram per cubic meter in Kesarganj, which is much higher than the permissible limit of 100 microgram per cubic meter. Last year, the PM 10 values were recorded at 154.4 microgram per cubic meter.

Moreover, levels of sulfur dioxide (SO₂) and nitrogen dioxide (NO₂) have also risen. The SO₂ levels on Diwali was recorded as 12.7 microgram per cubic meter, compared to 11.4 microgram per cubic meter last year. Similarly, NO₂ levels were recorded at 59.2 microgram per cubic meter, higher than the last year's level of 54.3 microgram per cubic meter.

"The air quality data of these locations indicates sudden rise of PM₁₀ due to firecracker bursting and heavy vehicular traffic," said Awasthi.

43. Delhi Air Can Be Cancerous For Kids: Study

Delhi's ever-soaring air pollution level could be triggering cancer in kids. A study conducted by the Newcastle University in the UK has found that incidences of neuroblastic cancer could be

related to aggravated environmental factors such as influenza and air pollution. Neuroblastic cancers are a special type of tumor occurring on the nervous system, outside of the brain and spinal cord, and predominantly affect children up to age five.

The scientists studied the Northern Region Young Persons' Malignant Disease Registry (NRYPMRD) for cancers reported in northern England from 1968 to 2015. They found that the neuroblastic cancers occurred in mini-epidemics, that is, more frequently in certain decades, and were geographically widespread. This suggests that environmental factors like air pollution and winds carrying infections could be playing a significant role besides genetic factors.

The authors advise that similar data analysis be carried out in other countries and cities, such as Delhi, for plausible links with cancer in children. Reporters spoke to the lead author of the study, Dr Richard McNally, from the Institute of Health and Society, Newcastle University. Dr McNally said over phone: "Our study covered a span of 43 years and a population of 900,000 young persons in northern England. What



we discovered was that neuroblastic tumors spread over a large geographical area but clubbed into a certain period of time. The only explanation for this is involvement of short-term environmental agents such as infections and air pollution." Dr McNally strongly advised that such investigation be carried out in Delhi too. "Delhi has a big air pollution problem and we have known about it for quite some time. We definitely suggest that experts look into this."

The Indian Council of Medical Research (ICMR) has revealed that childhood cancer cases, of which neuroblastoma is third most common, have gone up from 2.5 per cent to over 5.5 per cent of all reported cancers in India since 1995. Of the seven lakh¹ Indians who fall prey to cancer each year, roughly 40,000 are children. More so, Delhi throws up the bulk of new cases - 149 per 10 lakh population annually - second only to Chennai which records a higher 159. Dr Meenu Walia, director, Max Super Specialty Hospital, Patparganj, and a medical oncologist, said: "There is indirect evidence available for the link between air pollution and cancer. Neuroblastoma in children could possibly be related to weakened immunity from repeated bouts of influenza due to sustained bad air." "Also, cancer is growing at a high rate. Definitely, more national and international studies are needed on this," she added.

44. Climate Change Top Threat to India's Economy, Aide Says

¹ Equal to 100,000

Climate change is the top threat to the world's fastest growing major economy as erratic monsoon rains cause distress in a sector that employs more than half of India's billion-plus population, the country's junior finance minister said. "The No. 1 risk we face is global climate change because we are still very dependent on the monsoon," Jayant Sinha, a Harvard Business School graduate who formerly worked with McKinsey, said in a November 2nd press interview. "The age-old patterns are changing, which is affecting our farming and creating a lot of agricultural distress."

Prime Minister Narendra Modi is grappling with how to fight off the harmful effects of climate change while still providing jobs and electricity to a growing population. India, a nation with some of the world's dirtiest air and 400 million people without access to electricity, is also the world's third-biggest polluter after China and the U.S.

Modi has imported key food staples as India's driest monsoon since 2009 left vast tracts of farmland parched and hurt output of rice, sugar and corn. More than 60 percent of India's agriculture is rain-fed, making production highly vulnerable to rising temperatures and changes in rainfall patterns, according to a report by the Indian Council for Research on International Economic Relations.

India was the last major economy to release its emission cut plans for the latest round of United Nations-backed talks on climate change due to culminate in December in Paris.

Modi has pledged to spend 500 billion rupees over five years to expand irrigation as he seeks to help farmers improve crop yields and feed the nation's 1.25 billion people. He also plans to install 100 gigawatts of solar capacity by 2022, up from less than 4 gigawatts now.

South Asia is more at risk than any other region to natural disasters, rising sea levels and disruptive seasonal patterns, according to the Asian Development Bank. Warmer temperatures could reduce rice production in India and Bangladesh, and water demand in India may outstrip supply by more than 40 percent, according to the report.

A 2 degree Celsius (35.6 Fahrenheit) rise in the world's average temperatures will make India's summer monsoon "highly unpredictable" and double the need for food imports, the World Bank said in a 2013 report. Already about 15 percent of India's groundwater is overexploited, it said, and the financial hub of Mumbai has the world's largest population exposed to coastal flooding.

Sinha said the other major risk was creation of jobs. India is projected to have the world's youngest population by 2020, with 64 percent of the people in the working-age group. "What we are very worried about is job growth because we have a lot of young people, 10 million to 12 million people, joining the workforce every year," Sinha said. "We have to create good jobs for them."

45. Volvo Demonstrates Cleaner Air Inside Vehicle than Outside in Delhi

In the city of Delhi mornings usually are about a bit of exercise at the gym, a little jog or just the daily rush at home. Then it is about commuting to office or college and the same route to return home for most. Not much outdoor activity yet the collars of their white shirts are caked with dirt by the night. Motorcyclists' faces are covered with dust particles.

Needless to say there is not much help. The level of air pollution is on the rise. Thankfully the government of the day is now taking concerted steps to keep that in check. Falling in line, the private sector is doing its bit too. For example, Volvo Auto India recently organized an event themed Pollution Solution. Addressing the media was a panel led by Andreas Andersson,

Attribute Leader Environmental Impact, Volvo cars who was joined by Radha Goyal, Head, R & D Division, Indian Pollution Control Association and Gita Gangadharan, ENT surgeon, Max Super Specialty Hospital.

The discussion kick-started with an introductory note by Tom von Bonsdorff, MD, Volvo Auto India who talked about his daily jogging routine with a mask on. He showed how he regularly uses an app on his mobile to check the pollution level on a daily basis. Citing an example of his homeland, known for clean air, he explained the CleanZone feature of Volvo cars before handing over the discussion to the panelists.

With the help of presentations, the participants were informed about the dangerous pollution levels in the air, causes for this and steps being undertaken.

Radha Goyal emphasized certain misconceptions that people have. For instance, many people believe that the air inside is clean and that they are safe in their homes. For them, only the outside air is polluted. Nothing of this sort is true.

Also, among polluters it is not just the vehicular pollution. Instead there are other polluting agents like biomass burning, certain farming practices which add to the pollution.

Later, Andersson articulated how Volvo Auto India was conscious of its responsibility towards the environment and underlined three core values of the auto maker i.e. safety, quality, and care for environment. Explaining the working of CleanZone, he said, "Filter and sensor are elements of our state-of-the-art Interior Air Quality System. If the level of harmful substances becomes too high then the car's air intakes will automatically close. Together, the multi-filter and sensor keep out a number of harmful and irritating pollutants, including nitrogen oxides, hydrocarbons, ground level ozone, gases and unpleasant odors."

The discussion ended with a live demonstration of the quality of air inside the cabin of a Volvo XC90 and the quality of air outside which was measured with an air quality assessment device. Within no time the results showed that the air inside the cabin to be around 75 times cleaner. For once Delhi breathed the Swedish way.

46. Japan's CO2 Emissions Fall 3 Percent to Three-Year Low in FY2014

Japan's greenhouse gas emissions fell 3 percent to a three-year low in the fiscal year ended March due to reduced power demand and growing renewable energy, preliminary government figures showed. Emissions fell for the first time in five years to 1.365 billion metric tonnes of CO2 equivalent, according to Ministry of Environment data. That was down 2.2 percent from 2005 and up 7.5 percent from 1990.

Japan's emissions had been rising after the 2011 Fukushima disaster that led to the closure of nuclear power plants and an increased reliance on coal. The world's fifth-biggest carbon emitter, Japan set a goal in July to cut its emissions by 26 percent by 2030 from 2013 levels.

The reduction in the latest year followed power saving and billions of dollars of clean-energy investments in the wake of Fukushima, the ministry said. Two of Japan's dozens of commercial reactors have been restarted during the last few months, marking the nation's first nuclear power generation since September 2013.

An expected gradual restart of reactors from next year and growing renewable power would likely reduce the nation's energy-originated CO2 emissions for a third straight year to 1.149 billion tonnes in fiscal 2016 from a record 1.235 billion tonnes in 2013, the Institute of Energy Economics Japan (IEEJ) said.

Anxious to cut fuel bills, Prime Minister Shinzo Abe wants atomic power to account for 20-22 percent of the country's energy mix by 2030, but the goal is widely seen as unrealistic, and opposition to nuclear power remains widespread.

47. South Korea: VW Rigged Emissions in 125,000 Diesel Vehicles

South Korea said it fined Volkswagen \$12.3 million and ordered recalls of 125,522 diesel vehicles after the government found their emissions tests were rigged. Hong Dong Gon, a director at the Ministry of Environment, said in a live television broadcast that the ministry will continue investigating 30,000 other Volkswagen diesel cars for which it did not find evidence of emissions cheating.

South Korea's government launched investigations last month after the German automaker admitted that it rigged U.S. tests so it would appear that its diesel-powered cars were emitting fewer nitrogen oxides, which can contribute to ozone buildup and respiratory illness.

The South Korean ministry found that emissions from Tiguan diesel vehicles using EA189 engines breached standards when the car was not under the usual test conditions, such as when the air conditioner was on or when the car accelerated.

Volkswagen was ordered to recall 125,522 diesel vehicles equipped with the same EA189 engines sold in South Korea between 2008 and 2015. The recall covers 15 models, including the Tiguan, which was the top-selling imported car in South Korea last year.

The ministry will continue investigating other cars using more recent EA288 engines that say they meet emissions standards known as "Euro-5" and "Euro-6." They are Golf, Beetle, Jetta and Audi A3 diesel cars.

Volkswagen said it respects the investigation results. "We will take necessary measures based on legal procedures and requirements under the relevant laws and regulations," it said in a statement.

The ministry will also expand the investigation into other auto brands. It said it will announce the result in April after probing emissions levels in diesel cars sold by five local auto companies and 11 imported brands. In addition to Volkswagen and Audi, the manufacturers or dealers that sell diesel cars in South Korea are: Hyundai, Kia, GM Korea, Renault Samsung, Ssangyong, BMW, Mercedes-Benz, Porsche, Jaguar Land Rover, Volvo, Peugeot, Ford, Nissan, FCA Korea and Forza Motors Korea, which imports Ferrari cars.

48. South Australia Government Moving Toward Zero-Emissions Car Fleet

The Government opened an expression of interest process to seek information from the market about cost-effective supply, maintenance and fueling strategies for its fleet of passenger, SUV and light commercial vehicles.

The Government announced it would aim to reduce South Australia's greenhouse gas emissions to zero by 2050. "We want to be a leading state in low or zero emission vehicles," said Energy Minister Tom Koutsantonis. "This is an opportunity to find out more about current and future technologies to support existing and future vehicles in the State Government fleet.

"We want to know more about the innovative strategies international businesses have developed in reducing total greenhouse emissions in running a motor vehicle or reducing fossil fuel consumption resulting in cleaner air."

"This low or zero emission vehicle strategy will provide additional savings to taxpayers on vehicle running costs and create further jobs in the community.

Koutsantonis said the expressions of interest process would also seek information on job creation opportunities in South Australia that could be associated with converting the fleet.

Each year the Government buys 2700 new vehicles.

Less than two per cent of the Government's current fleet is hybrid vehicles. Excluding police vehicles, the Government fleet travels almost 114 million kilometers a year and consumes almost 11 million liters of fuel.

This latest announcement comes as Premier Jay Weatherill and Climate Change Minister Ian Hunter prepared to travel to Paris for the United Nations climate summit.

49. Taiwan EPA Develops Low-Cost PM2.5 Sensors, Software

The Environmental Protection Administration (EPA) has developed low-cost mobile PM2.5 sensors to monitor pollution at local levels, designating Nantou County's Puli Township as the first trial zone of a pilot monitoring project, the agency said, adding that it has proposed a new diesel vehicle inspection measure to curb pollution.

The EPA said it commissioned National Chi Nan University (NCNU) to develop inexpensive sensors to be distributed across residential areas to detect non-industrial emissions, such as vehicle exhaust gases, cooking fumes and burning incense and agricultural waste, providing data to supplement the agency's air quality monitoring stations, which are mostly at higher elevations and whose data represent the air quality of a region as a whole, instead of local levels.

NCNU professor of information technology Day Rong-fuh said the PM2.5 monitoring system his team developed consists of low-cost sensors and an app, with sensors costing about NT\$2,000 (approximately \$60 US) each, making them affordable enough for most residents.

Sensors are to be installed at specific intervals to establish an air pollution monitoring network, and data collected could be instantly processed to determine possible sources of pollution during an incident, Day said.

The system can report potential pollution incidents and their location to local environmental agencies to facilitate rapid pollution control and remediation, he said, adding that the sensor could also be fitted to an aerial drone to conduct inspections at night, he said.

At least 30 sensors are to be installed in Puli by the end of this year to coincide with the advent of the northeast monsoon — which transports a large amount of pollutants to Taiwan — and could potentially be deployed to the rest of the nation, the EPA said

Puli was chosen as the trial area after pro-transparency Web site www.g0v.tw reported consistently elevated PM2.5 levels in the township last year, after which Puli was nicknamed the “big black ball” due to black pollution indicators above the township on the Web site’s air pollution monitoring system, EPA Department of Air Quality and Noise Control Director-General Chen Hsien-heng said.

Meanwhile, to help curb emissions from heavy-duty diesel trucks and tour buses — the transportation sector’s major PM2.5 contributors, which account for 12 percent of total PM2.5 pollution in Taiwan — the EPA has adopted a new vehicle inspection method that gauges the opacity of vehicle exhaust, the agency said, adding that it would establish “air quality purification zones” in scenic spots, industrial zones and harbors, where random emission tests of diesel vehicles would be increased.

Owners of vehicles that fail the opacity test would face a fine of between NT\$5,000 (~\$150 US) and NT\$20,000 (~\$600 US), as well as follow-up inspections.

The EPA said there are about 100,000 diesel trucks in the nation, with about 10,000 vehicles under an EPA self-management program, which requires owners of the vehicles to acquire an emissions certification from the agency and undergo regular emissions tests and maintenance.

50. Philippines: Tricycles and Motorcycles Responsible For 45 Per Cent of Emissions

Manila: Motor-tricycles and motorbikes have eclipsed the jeepney as the ‘King’ of Philippine roads and now contribute a large percentage of harmful emissions that Filipinos breathe in every day. A study conducted by the National Centre for Transportation Studies (NCTS) of the University of the Philippines said these two types of motorized personal and public conveyances are responsible for much of the dirty air in urban and rural areas of the country.

Tricycles and motorcycles are responsible for 45 per cent of all volatile organic compound emissions, the NCTS said.

“The tricycle sector represents the biggest number of public transportation mode in the Philippines,” said the NCTS in a study on intermodal transport. In the provinces as well as the city, there are more people who rely on tricycles for public conveyance compared to public utility jeeps or “jeepneys”.

One of the reasons is that tricycles are cheaper to acquire and has minimal “cost of ownership” compared to jeepneys.

As of 2012, there are over 650,000 public tricycles operating in the country, accounting for nearly 68 per cent of the total for-hire vehicle population.

“The growth of tricycle organizations/associations in every LGU (city or municipality) area has contributed to air and noise pollution, traffic congestions, road accidents and undisciplined drivers,” the NCTS said.

Likewise, it noted the unchecked rise in the number of tricycles has brought about “cut-throat” competition, which, in turn, “poses a danger to the lives of the people and damage to properties.”

The NCTS said there is a need to regulate the acquisition and operation of tricycles to strike a balance between the need for short haul, intracity public transport and drawbacks such as air and noise pollution as well as cut throat competition.

Quezon City Representative Alfred Vargas said he has filed House Bill 6237 or the “Tricycle Driver Safety Act” to protect Filipinos from the negative effects of oversupply of tricycles and provide safety to tricycle drivers, passengers and pedestrians.

Vargas said a serious issue that the tricycle sector faces is safety. Tricycles are perceived to be more accident prone than four-wheeled vehicles which are more stable. “The instability of the sidecar attached to the motorcycles, which serve as passengers’ seat, is among the leading cause of accidents. In Metro Manila, passenger tricycle injury ranks fourth in causing motor vehicle injuries,” Vargas stressed.

Under the proposed “Tricycle Driver Safety Act,” the Land Transportation Office and the Technical Education and Skills Development Authority are developing and implementing a nationwide tricycle drivers’ safety program in coordination with tricycle regulation offices of local government units.

Vargas said the local roads would be safer for the riding public and air quality would improve for the people in general if such a law would be passed.

51. Motorists Urged To Make Car Checkup, Maintenance a Habit

The Department of Environment and Natural Resources (DENR) is urging car owners to get in the habit of regular car checkup and maintenance to make sure they do not contribute to air pollution.

The appeal was made as the DENR, together with the Coalition of Clean Air Advocates of the Philippines (CCAAP), led on November 27th a nationwide campaign promoting vehicle inspection and maintenance consciousness among motorists.

The Second National Check Your Car Day, with the theme “Clean Air through National Motor Vehicle Inspection and Maintenance Awareness,” is the culminating activity for the observance of November as Clean Air Month.

More than 500 private emission testing centers (PETCs) nationwide, of which more than 100 are in Metro Manila, were mobilized by the CCAAP for the event by providing free vehicle emission test to volunteered vehicles registered with the Land Transportation Office (LTO).

DENR Secretary Ramon J.P. Paje expressed hope that the event would encourage vehicle owners to “practice the initiative of maintaining their vehicles to help achieve cleaner air.” “We advocate the need for each vehicle owner to consciously inspect and maintain his vehicle, not only to ensure its longevity and good condition, but also to reduce its potential to contribute to air pollution,” he urged.

During the event, several members of the Anti-Smoke Belching Units (ASBUs) formed by the DENR’s Environmental Management Bureau (EMB), tested the emissions of vehicles of the

department, its employees, the Quezon City local government, several public utility jeepneys, and other interested parties. Joining them were representatives of the CCAAP and local transport groups.

Paje, however, clarified that the results of the test may not be used for registration purposes, “but solely for owners to know the state of their vehicles and be encouraged to maintain them.”

Around 80 percent of air pollution in the country comes from mobile sources or motorized vehicles. The rest are from open burning and stationary sources like factories.

To reduce smoke-belchers on the road, the LTO has required emission testing of vehicles prior to registration.

DENR Assistant Secretary and concurrent EMB Director Juan Miguel Cuna said that the nationwide free vehicle emission testing was being conducted not to penalize motorists but to encourage them to have their cars checked up and ensure that their vehicles are in good running condition to help the government in its effort to address air pollution that impacts on public health and the environment.

Referring to those who pay off PETCs to certify their vehicles even without undergoing actual testing, Cuna said, “We want to remind you that you do not benefit from such shortcuts. We all breathe in the same air, and driving with vehicles that fail our standards affect us and our children. Everyone loses.”

The DENR has also coordinated with the Department of Energy for the imposition of stricter emission standards for vehicles, directing the transition of fuel use from Euro2 to Euro4 standards starting July 2015. Euro4 fuels have a sulfur content of only 50 parts per million (PPM), compared to 500 PPM for Euro2.

The government is also promoting the use of e-vehicles or conversion to the use of alternative fuels like compressed natural gas, liquefied petroleum gas, and biofuels.

52. Asian Cities Choking on Worsening Air Pollution

Heavy smog recently shrouded the capitals of the world’s two most populous countries. Air quality monitoring stations in Beijing and New Delhi displayed readings far exceeding the threshold for the highest-category hazardous level.

The Chinese capital issued its second-ever pollution red alert prompting Beijing's metropolitan government to order factories to reduce production or shut down, pull half the vehicles off the capital's roads and close schools. The city's first red alert was issued on December 7th. Air quality index machines in central Beijing showed readings in excess of 400 micrograms per cubic meter for PM2.5 (particles less than 2.5 micrometers in diameter, which can lodge in the lungs).

The issuing of red alerts, however, does not mean Beijing's air is actually more polluted than it has been in the past. “The reason that the municipal government decided to issue the red alert is to justify more radical measures to control the pollution level,” said Yanzhong Huang, senior fellow for global health at the Council on Foreign Relations. “It turns out indeed that limiting the number of cars on the road actually brought down the level of pollution.”

In India's capital, after a respite about a decade ago when anti-pollution measures led to improvements, the city is again choking on air considered the worst in the world, according to the World Health Organization (WHO). "Studies have shown that in Delhi every third child has impaired lungs now. If you look at the number of premature deaths that get reported from different studies in this city that virtually works out to be one death per hour due to air pollution related diseases," said Anumita Roychowdhury, executive director for research and advocacy at the Center for Science and Environment in New Delhi.

The World Bank this year calculated that the shortened lifespans of people in India's cities due to air pollution is costing the country's economy \$18 billion annually.

"Right now during winter it's so visible. You can sense, you can smell that smog," Roychowdhury told VOA on Tuesday.

India's Supreme Court has banned through the end of March, registrations of large diesel luxury cars. The New Delhi government has ordered odd and even numbered vehicles to use roads on alternate days during the first half of January.

The Delhi High Court, which previously said that living in the Indian capital was akin to being in a "gas chamber," on Monday declared an emergency. Two judges of the court directed all concerned authorities to follow existing rules, chastised traffic police for being ineffective in reducing road congestion and ordered officials to ensure particulate matter levels not exceed 60 microgram per cubic meter per day for the particularly lethal PM2.5 and 100 microgram per cubic meter per day for PM10.

The WHO considers any level above 25 micrograms as unsafe. The U.S. Embassy in New Delhi recently recorded the air quality index at a hazardous 534.

The judicial intervention in India comes after public interest litigation initiated as far back as 20 years ago. "The reason why the courts get involved is when the civil society is angry about an issue and they use the public interest litigation instrument to go to the court to seek relief," explained Roychowdhury. "In response to that public interest litigation the courts respond. So it is not that the judges just suddenly intervene on their own."

The central government's transport minister, Nitin Gadkari, has vowed to cut Delhi's pollution by building a ring road so trucks will not have to drive through the capital. He also wants more vehicles to use ethanol fuel. But the minister acknowledges this will not solve the bad air problem in Delhi because burning farm waste and construction dust also contribute.

In Dhaka, the world's fastest growing mega-city where at least 15 million people are residing, traffic congestion and smoke from brick kilns create pollution blamed for killing thousands of residents every year and causing between 80 million and 230 million cases annually of respiratory diseases, according to the Bangladesh Ministry of Environment and Forests.

"During the winter it's dry and there's a lot of construction," thus the air pollution is worse, said associate professor of chemistry Mominul Islam at the University of Dhaka's air quality research and monitoring center. The center, as well as the Bangladesh Ministry of Environment, however, have no equipment to record PM2.5 readings, according to the professor, thus there is no way to gauge whether Dhaka's air is currently worse than Beijing's or Delhi's. "We hope to have equipment online from February," he said.

A high pollution alert also prompted Iranian authorities in Tehran, Isfahan and Arak, to close all schools for two days recently. It was the first such order since 2010. The PM2.5 levels recorded in Tehran were in the unhealthy range, but far superior to those of Beijing and New Delhi.

Across the region authorities are still grappling with how to combat the pollution in the long run. “Even in the case of China where we’ve seen the top leaders themselves increasingly committed to pollution control there’s no consensus on how to effectively address the problem,” Huang, a professor at Seton Hall University who just returned from Beijing, told VOA. “And, of course, in Delhi, India you face similar challenges on how to handle the dilemma between economic development and environmental pollution.”

Well-heeled Chinese are purchasing high-quality imported air purifiers for their homes and offices. But those units are too expensive for many Chinese who have resorted to rigging up makeshift units by attaching glass-fiber filters to household fans. A Canadian company, Vitality Air, which began bottling Rocky Mountain air as a joke, now claims to have sold thousands of cans in China for up to \$28 each.

53. India Supreme Court Bans New Diesel SUVs in Delhi

On December 16th, the Supreme Court of India banned for more than three months new big diesel passenger vehicles such as luxury cars and sports utility vehicles from being registered to drive in the National Capital Region of Delhi, and ordered other steps to address air pollution in the nation's capital and its surrounding area.

In its order, the court also banned old commercial vehicles from entering the National Capital Region, which encompasses New Delhi, the city of Delhi and satellite cities including Gurgaon, Noida, Ghaziabad and Faridabad.

The region follows the Bharat Stage 3 (BS 3) norms on vehicular emissions (based on the Euro 3 standards), and no pre-BS 3 commercial vehicles will be allowed to enter the region.

The ban on new registrations for large diesel vehicles, in force until March 31, 2016, could affect international companies such as Mercedes Benz, which makes high-powered luxury vehicles and SUVs, and Toyota, whose SUVs have a large share of the mid-segment car market. It applies to vehicles with engine capacity of 2,000 cubic centimeters and above.

In its order, the court also:

- doubled the environmental compensation charge on commercial vehicles entering the region to 1,400 rupees (\$21) for light commercial vehicles and Rs 2600 (\$39) for heavy vehicles;
- ordered all taxis and passenger pickup vehicles run by aggregators (such as Uber) to be converted to compressed natural gas engines, like most public transport in Delhi.
- told state governments to direct vehicles passing through Delhi to take routes around the region;
- instructed state and municipal officials to take strict action against burning of solid waste; and
- ordered the governments to hire vacuum trucks to clean roads.

The capital region is not the only area of India moving to cut back on the use of diesel vehicles. Earlier this week, the state government of Himachal Pradesh, a northern state in the Himalayas,

announced it will condemn old government-owned diesel vehicles and steeply hike registration charges for diesel vehicles starting January 1, 2016.

54. Ban on Registration of Diesel Vehicles to Cover Entire NCR

Already banned in Delhi, diesel-run public transport is facing the axe in NCR towns too. Implementing a Supreme Court order, the Environment Protection Control Authority on Saturday directed seven districts of Haryana and Uttar Pradesh to halt with immediate effect registration of autos, taxis and buses that run on diesel. The body also ordered district authorities to stop issuing fitness certificates to diesel-run autos and taxis from January 1 and buses from June 1. The direction was issued to Gurgaon, Faridabad, Sonapat, Bahardurgarh and Jhajjar districts in Haryana, and Ghaziabad, Meerut and Gautam Budh Nagar in Uttar Pradesh.

"The move had been under discussion for quite some time. Seeing the urgency, it was thought that the time for the restriction was ripe. Representatives of all the state governments were present and the decision was taken after thorough discussion," said a Centre of Science and Environment member.

The EPCA met to facilitate the implementation of the Supreme Court order imposing a ban on registration of diesel vehicles with an engine capacity of over 2,000 cc till March 31.

The meeting had participation from the CSE, pollution control authorities, and around 50 officials from Uttar Pradesh, Delhi, Rajasthan and Haryana. Officials from public sector undertakings in Delhi, the states' pollution control bodies and the traffic police from Delhi, Haryana and Uttar Pradesh were also present.

55. 'Diesel Ban Could Reduce Pollution By 30%': HSPCB Scientist

The ban on registration of new diesel vehicles is being seen as a temporary measure in the fight against pollution, but environmental experts say air pollution could be reduced by almost 30% if the number of diesel vehicles on roads could be brought down significantly.

According to a Haryana State Pollution Control Board (HSPCB) scientist, 60% of diesel vehicles in the city are not serviced regularly and are a major source of pollution. "Over 90% of the particles emitted by diesel engines are extremely fine, which increases the level of pollutants. I think pollution level in the city should come down by 30% if the ban is implemented properly. CNG is a good alternative and will drastically bring down pollutants as compared to the existing level," the scientist told TOI.

HSPCB has issued a letter to the road and transport authority asking them not to provide fitness certificates to diesel autos in the city. There are more than 35,000 diesel vehicles used for public transport, which include shared autos, private taxis and buses, which are a major source of particulate matter (PM) emissions in the transport sector.

An analysis done by the Centre for Science and Environment (CSE) shows that diesel engines are primary contributors of particulate matter and oxides of nitrogen.

Niranjan Raje, a member of expert appraisal committee of the ministry of environment and forests (MoEF) and a member of the Environment Pollution Control Authority (EPCA), said, "When compared to petrol engines, diesel engines produce 20 to 100 times more particles and about 90

per cent of these particles are very minute. Emissions by diesel engines are therefore a major source of pollutants."

Doctors highlighted a correlation between the increase in use of diesel vehicles and the rise in respiratory and cardiovascular diseases. Dr Kumar Srivastava, a pulmonologist, said, "We have seen about 150% rise in cases of respiratory ailments in the last 15 years. It happened after an increase in the availability of diesel vehicles and use of diesel gensets in residential societies for power back-up. Diesel contributes to exposure of PM2.5, which can cause respiratory and cardiovascular diseases."

Long-term exposure to the pollutants is also responsible for reduced lung function and diseases such as asthma and chronic bronchitis.

56. Delhi to Limit Use of Cars in an Effort to Control Pollution

The notoriously polluted air in the Indian capital has become so bad that the local government is planning to limit the use of private cars to alternate days, among other measures. K.K. Sharma, the chief secretary of Delhi, told reporters that starting January 1, the days when a private car would be allowed on the streets would depend on whether its license plate ended in an even or odd number. He did not say how the rules would be enforced.

Mr. Sharma said the restrictions would be temporary: "Whether we'll run it for two weeks, three weeks, let us see how it rolls out. We will announce that as and when it's finalized. But right now, our efforts will be to make it functional from the first of January."

He added that public transportation would be increased to make up for the restriction on private cars. The government also said it would shut down a power plant in the capital that burns coal and inspect trucks at the border to make sure they comply with emissions regulations.

The World Health Organization said last year that New Delhi had the most polluted air of the nearly 1,600 cities it studied around the world. A monitoring station at the United States Embassy here recently recorded an air quality index of 372, according to Reuters, meaning the air was "hazardous," the worst category. Afterward, the reading had improved a bit, to 247, which the embassy classifies as "very unhealthy." It advised people with heart or lung disease, older adults, and children to avoid prolonged or heavy exertion.

Many factors contribute to fouling the capital's air, experts say, including tailpipe and smokestack emissions, the burning of cropland in nearby states and the widespread burning of garbage. "It's a cocktail of pollution," said Anumita Roy Chowdhury, the executive director of the Delhi-based Center for Science and Environment. "It's a multi-pollutant crisis."

She added that Delhi's air pollution had been in the "severe" category, the highest level designated by the Central Pollution Control Board, on nearly three-quarters of the days in November.

The Delhi High Court recently asked the government to take action, calling the air pollution levels in the capital "alarming" and likening life there to "living in a gas chamber," the Press Trust of India news agency reported. The National Green Tribunal directed the Delhi government to convene a meeting about pollution, the news agency reported.

The Indian capital is growing in population and affluence, and the number of cars and trucks on its streets is rising fast. The most recent Economic Survey of Delhi found that there were more than 8.8 million vehicles on the road there from 2014 to 2015. The number of vehicle registrations increased by 14 percent from the previous year, according to the Center for Science and Environment. Heavy traffic often snarls the city's streets.

Delhi residents seem to be more aware of air quality problems in recent years. Many affluent families buy air filters for their homes, and especially in the winter months, some residents wear surgical masks as they move about the city. Newspapers carry reports about a rising number of hospital patients with respiratory illnesses. But there had been little meaningful action on the issue from the Delhi regional government before Mr. Sharma's recent announcement.

In addition to the limits to be imposed on private cars, Mr. Sharma said trucks would be allowed on Delhi's roads only after 11 p.m., two hours later than they are currently permitted. And he said that beginning in April, the public works department would use vacuums to clear the dust from Delhi's streets.

Environmental advocates here welcomed the moves but called them stopgaps that would have to be followed by more fundamental structural changes. "You still need some of these desperate measures" along the way to more long-term solutions, Ms. Chowdhury said.

57. Air Pollution in Delhi Breaches 'Severe' Levels

Air quality in Delhi recently plunged to the 'very poor' level with real-time readings of PM 2.5, the tiniest and most damaging of all the particulate matters, breaching the 'severe' category in areas across the national capital. In three stations of System of Air Quality and Weather Forecasting and Research (SAFAR), PM 2.5 fell in the severe category which affects healthy people and seriously impacts those with existing diseases.

At one point, Delhi Pollution Control Committee's (DPCC) reading at the Anand Vihar station, one of the most polluted spots in the city, had PM 2.5 at 534 micrograms per cubic meter while PM 10 was at 853. The corresponding safe limits are 60 and 100, respectively.

Mandir Marg and Punjabi Bagh, localities far away from each other, had PM 2.5 levels at 271 and 315 micrograms per cubic meter, nearly 5 times above the safe limit respectively.

R K Puram's PM 10 was at a staggering 1135, 10 times above what is considered safe.

58. New Delhi About to Find Out How Hard It Is to Have Clean Air

For the city's more than 16.8 million residents, January 1, 2016, marks the beginning of the most draconian measures aimed at reducing the number of exhaust-belching automobiles in the world's most polluted metropolitan area. They also have to contend with fines for open-air burning of waste, and a ban on bigger diesel engine vehicles, while more steps including increasing the penalty on cars found with tailpipe emissions exceeding limits are under consideration.

Together, they mark the most concerted efforts by the government to address popular discontent triggered by pollution levels that were well above safe limits for the past more than a month. New Delhi also joins Beijing as capitals of the two most populous nations now struggling to control runaway pollution brought on by decades of economic growth and lax environmental laws.

“Delhi is hell on earth,” said Paranjoy Guha Thakurta, a New Delhi-based political analyst. “It will be very difficult to enforce these measures but if it is even partly successful and instills some fear in people, it will make a difference and could also set an example for other cities.”

The haze in New Delhi this winter is daunting. The city was the world's most polluted measured by PM2.5—tiny, toxic particles that lead to respiratory diseases—with an annual average of 153 micrograms per cubic meter, according to a 2014 World Health Organization database. A reading of 25 or lower is considered safe. PM2.5 levels crossed about 23 times the safe limit in the past month or so.

The action initiated is having an impact on residents as well as manufacturers. India's Supreme Court has banned the registrations of diesel engine vehicles of 2 liters or more. That sent shares of Mahindra & Mahindra Ltd., the country's biggest SUV maker, down the most in more than three months on the day the court gave its order.

While Mahindra said it will abide by the court's decision and develop vehicles that comply with stipulations, India's biggest commercial vehicle maker Tata Motors Ltd. said in the long term, regulation has to focus on overall emissions-control roadmap rather than on any specific fuel or technology.

For now automakers can look at their production, inventory and marketing of specific products, and customers are likely to shift away from diesel “given the perceived uncertainties,” said Kumar Kandaswami, senior director at Deloitte in India.

The city will have to consider longer term steps such as introduction of car parking permits, according to Anumita Roychowdhury, executive director of research at advocacy group Centre for Science & Environment. “The moment you price things properly, behavior is going to change,” she said.

There are other longer term plans in the works including shutting down two coal-based power plants in the city. While the Delhi government owns the 135-megawatt Rajghat plant, it will have to negotiate with the federal government-controlled power producer NTPC Ltd. to close the 705-MW Badarpur plant.

In India, the test is in the execution. The Delhi government describes the odd-even license-plate restriction as an experiment that will run for 15 days to gauge its efficacy. Those who leave their cars at home and take the metro rail network, which carries more than 2.4 million people on average daily, will test its capacity.

Lack of a robust and safe public transport system, last mile connectivity, adequate monitoring systems and citizen awareness are key challenges, according to Hem Dholakia, research associate at Council on Energy, Environment & Water.

59. In India's Dirty Cities, Automakers Waver on Emissions

Automakers are opposed to the government bringing forward implementation of new vehicle emissions norms in India, home to 10 of the world's 15 most polluted cities.

The Society of Indian Automobile Manufacturers has met with various ministries to voice concerns with fast-tracking stricter emissions rules by three years and will oppose a government proposal

in writing, Vishnu Mathur, the group's director general, said. Automakers are willing to accelerate standards by one year instead.

“The technology needs to be properly validated and tested to ensure that it's safe for consumers,” said Mathur. “We explained the difficulties and the problems with implementing something which is not ready.”

India's government has sought to bring into effect Bharat Stage 5 emissions norms, comparable to Euro 5, for four-wheeled vehicles from April 2019, instead of April 2020. The implementation date for BS 6 also would move to 2021 instead of 2024.

Shares of Maruti Suzuki India Ltd., the country's biggest automaker by volume, rose 0.2 percent at close in Mumbai. Tata Motors Ltd., owner of Jaguar Land Rover and the nation's largest manufacturer of commercial vehicles, and Mahindra & Mahindra Ltd., India's biggest maker of sport utility vehicles, both declined by 1.8 percent. The benchmark S&P BSE Sensex Index slipped 0.9 percent.

Lax emissions controls on vehicle are a contributor to India's woes with pollution. The nation's Central Pollution Control Board in 2013 reported that some centers conducting vehicle checks had faulty or fake software. A panel of lawmakers in April found inadequate monitoring and enforcement, staffing shortages in regional environment offices and a declining number of industries that are being inspected in recent years.

India's Ministry of Road Transport and Highways, in a draft notification dated November 27, said that it will seek objections and suggestions for the next 30 days on advancing emissions norms.

60. Patna Bans 15-Year-Old Diesel Vehicles from Plying On Roads

The Bihar government has banned 15-year-old diesel vehicles from the capital's road in a bid to control air pollution. The decision follows an advisory issued by the Bihar State Pollution Control Board (BSPCB) that said air quality in Patna was 'very poor' on 20 days and 'severe' on nine days of November 2015.

"Decision to ban plying of 15-year-old diesel vehicles on roads was taken during a review meeting of the environment department chaired by Chief Minister Nitish Kumar," an official said. The state transport authority had proposed banning of old diesel-run vehicles as far back as October 2013, but the measure could not be implemented then.

Nitish Kumar also instructed the government agencies to draw out a plan to control pollution and told officials to curb burning of plastic and solid waste in the open.

'Severe' means particulate matter-2.5 (or PM-2.5) is over 400 and can 'affect healthy people and seriously impacts those with existing diseases'. 'Very poor' means PM-2.5 is between 301 and 400 and can cause 'respiratory illness on prolonged exposure to the pollutant.'

Dust, vehicular emissions, burning of waste in the open, brick kilns and construction activities are the factors contributing to an alarming level of air pollution.

61. India Readies Plan to Clean Delhi's Air, but Won't Focus on Vehicles

India is devising a plan to combat smog in the capital New Delhi, the world's most polluted city, two senior officials said, but the government is stopping short of targeting the powerful transport industry. Instead, the plan will call for enforcing bans on what some environmentalists regard as relatively minor sources of pollution, including burning of garbage and construction dust.

In the absence of concerted government action on battling pollution, courts have stepped in, banning the sale of luxury diesel vehicles and demanding a tax on trucks entering the city.

The federal plan, which the two officials said would be made public within two weeks, will be one of the government's first attempts to come up with a broad solution to the problem. Under the plan, they said, the government will enforce a ban on burning garbage and tires in Delhi and its three surrounding states; require that construction sites are covered with curtains; and clean road dust. The measures are "by and large" reiterations of older rules that have rarely been enforced, the officials said.

Environmental activists said the moves were cosmetic.

"It's a piecemeal approach," said B. Sengupta, a pollution campaigner and former government scientist, when he was told of the plan. "It will not drastically improve the air."

Experts said the city of 16 million needed a permanent ban on diesel cars, which are seen as polluting, and other measures to reduce spiraling vehicle emissions. Campaigners are calling for steps like a parking cess and an annual tax on all cars.

"Vehicular emission is a major contributor of overall toxic pollution and is a concern due to its direct exposure to the population," said Anumita Roychowdhury, executive director of the Centre for Science and Environment think-tank. The government officials said there wasn't yet enough evidence to be sure about how much vehicular emissions contribute to pollution.

New Delhi has however pledged to bring forward tighter emission norms for vehicles and the transport ministry has said it would ban commercial vehicles that are over 15 years old from the country's streets next year.

The automobile industry feels it is being singled out and that there is need for a holistic plan - including scrapping of old cars and a ban on burning of biomass and paddy fields - to improve air quality.

The government is commissioning more studies to understand the different pollution sources, the officials said. Crop burning and industrial pollution from adjoining states add to the bad air, complicating decisions for policymakers.

62. Preliminary Draft China 6 Proposal Undergoing Review

VECC has prepared a preliminary draft of its China 6 light-duty vehicles emissions proposal which has been shared with selected manufacturers to get initial comments. The proposal is more than 300 pages long. Main points of the draft include:

- Covers both gasoline and diesel (including dual fuel and hybrid) vehicles.
- Includes GHG species: CO₂ and N₂O but the limit levels are not determined yet
- There are two versions of emission limits, China 6 a and b which do not match Euro 6a and b.

- The China 6a limits are close to Euro6 but are fuel neutral and the limits are whichever the more stringent ones between petrol and diesel vehicle limits in Euro 6. PM limits are 10% below that of Euro 6 level. PN limits are same as Euro 6 levels.
- China 6b limits are much more stringent than 6a. CO and PM limits are 30-40% down from Euro 6 levels, and HC, NOx, NMHC limits are 67% down from Euro 6 levels.
- VECC indicated the standards could be introduced nationally in 2019 or 2020; MEP intends to encourage key regions to adopt the more stringent China 6b even earlier
- The limits are based on WLTC/P
- Durability requirement is 160,000km
- RDE test: similar to the Euro 6c proposal, using CF of 2.1 for NOx
- Evap emission limit value is 0.7-1.2 g/test for various vehicle categories, which are much lower than that of Euro 6, and close to US Tier 2 levels.
- OBD requirements appear to match the monitoring and anti-tampering requirements in the 2012 version of OBD II rule but the OTLs are based on WLTC and China 6 limits.

63. Beijing's Second Air Pollution 'Red Alert' Is A Sign; Twice

How bad is the pollution in Beijing? So much so that the city has been put on red alert. Twice

In 2013, the Chinese capital instituted a red-alert system to keep people indoors on days when air pollution climbs to hazardous levels. Specifically, an issued red alert dramatically limits car use, advises schools to close, shuts down outdoor construction sites and closes certain industrial plants.

But the government did not issue an actual red alert for the next two years — the first time they used the system was earlier this month. Now they have issued their first two only weeks apart from each other.

The announcements appear to be signs of the government's growing desire to show an increasingly vocal public that it is taking steps to address the environmental problems that have attended China's economic growth. Coal is one of the major fuels that has literally powered that growth — China is the world's largest user of coal, and some evidence suggests the country may be burning even more of it than previously thought.

Fossil fuels, industrialization and a dramatic rise in driving have all left the air nearly unbreathable in many areas, and the red alert system was a way to reduce pollution and protect health on days when the smog is expected to be especially bad.

But why is the government suddenly issuing red alerts, after letting the program lie fallow for so long? "I was quite surprised they issued a second red alert so soon after the first one," said Jennifer Turner, who heads the China Environment Forum at the Woodrow Wilson Center. But she thinks there could be a few reasons for the spike.

- First, the government has been working on improving its air quality-monitoring technology since its air pollution became a news story a few years ago. They might feel more confident in their measurements now than they have in the past, she said.

- Secondly, Beijing's air quality is awful, and the red alerts may be a way for the government to tell the public that further legal or policy changes lie ahead. "They could have some tough decisions ahead of them, and it may be a way to catalyze more action on this," she said.
- Thirdly, they might be responding to louder and louder signals of discontent from the Chinese public.

Indeed, the Chinese people are increasingly upset about air and water quality and other environmental issues, and the government is likely feeling some pressure to react, said Steve Herz, an attorney with the Sierra Club, an environmental advocacy group. "China has a massive air pollution problem, and it has turned into a political problem," Hertz told CNBC. "The government of China values more than anything stability and legitimacy, and it has become such a problem that they need to be seen to be acting to address it."

The pollution in the city has become so hazardous, it is common to see people wear face masks to filter out the pollution, and air pollution is cited as one of the reasons many of China's newly wealthy citizens are leaving the country for the United States, Australia or other countries.

The pollution has also become an economic problem. Many businesses will likely have to close during the red alert, certain types of large vehicles are not permitted on the roads, and about half of the city's cars will have to stay in the garage. "You often hear people talk about coal as a cheap energy source. First of all, that is increasingly not true, when you look at the plummeting costs of renewables, and the costs of building new coal plants. But even [if] you take that as true, you have to think about the hidden costs. Think of the hidden health-care costs, not just the 1.6 million who are dying, but the millions and millions who are sickened with asthma attacks and cardiopulmonary disease. I mean the health-care costs in the Chinese system must be staggering."

Herz compared the red alerts with other steps he has seen at varying levels of government in China. Earlier this year, China committed to peak its carbon emissions by 2030, and to cut carbon emissions per unit of GDP by at least 60 percent of what they were in 2005.

They have already begun to shut down some of the least efficient fossil fuel-burning power plants, and have committed about \$6 trillion to clean energy.

The country has also implemented a cap-and-trade system for fossil fuel emissions, said Herz, and plans to make changes to power grids to prioritize the delivery of electricity from renewable sources over power from fossil fuels.

"It may be the first time they are issuing these red alerts," Hertz said, "but it is certainly not the first time they are taking drastic steps to address their air-quality issues."

China also has become much more transparent about its air quality issues over the last few years, and the red alerts are further evidence of that, Turner said. "In terms of the transparency of pollution information, this is a very good sign," she said.

64. Is China Cracking Down On Pollution Violators?

Worsening air conditions in China have led to heightened public frustrations with pollution, causing the government to confront companies believed to be lying about their emissions data.

Chinese police have detained 10 company officials recently for lying about their pollution data, the environment ministry reports. The company officials are accused of “using fake figures to swindle pollution treatment subsidies, manipulating environment monitoring results or hindering such monitoring,” the Ministry announced.

A total of eight companies were accused, including a Coca-Cola joint venture in the Gansu province and sewage plant in the southern city of Dongguan. To help improve the country’s air quality, the government issues subsidies to companies effectively reducing their pollution. The ministry says the Dongguan sewage plant inflated the volume of pollution it treated to gain 20 million yuan, equivalent to \$3.1 million.

Some of the companies could face criminal lawsuits, and subsequent conviction of environmental pollution crimes could yield a seven-year prison sentence.

Public engagement in the issue is exceptionally high as the Chinese capital of Beijing experienced its first-ever red alerts for air pollution. Amid widespread discontent among Chinese citizens who have been advised to stay indoors, “the nation extends a crackdown on environment-related crimes,” the state news agency Xinhua reported.

“China’s continuing struggle to control and reduce air pollution exemplifies the government’s fear that lifestyle issues will mutate into demands for political change,” Mary Gallagher, associate professor of political science at the University of Michigan, told the press.

“As citizens know more about air pollution, more pressure will be put on the government,” added Xu Qinxiang, a technology manager at Wuhan Juzheng Environmental Science & Technology, the company that created the “Nationwide Air Quality” smartphone app in 2013. “This will urge the government to control pollutant sources and upgrade heavy industries.”

According to a Pew Research report released earlier this month, 76 percent of people in China say air pollution is a “big” problem, with 35 percent of these people describing the problem as “very big.”

65. China’s Biggest Polluters Face Wrath Of Data-Wielding Citizens

Besides facing hefty fines, criminal punishments and the possibility of closure, the worst emitters in China risk additional public anger as new smartphone applications and lower-cost monitoring devices widen access to data on pollution sources.

Azure Map, an application made by a group of organizations including the Institute of Public and Environmental Affairs and the Alibaba Foundation, provides pollution data from more than 3,000 large coal-powered, steel, cement and petrochemical production plants. Origins Technology in July began sale of the Laser Egg, a palm-sized air quality monitor used to track indoor and outdoor air quality by measuring fine particulate matter in the air. “Letting people know the sources of regional pollution will help the push for control over emissions of every chimney,” said Ma Jun, the founder and director of the Beijing-based IPE.

The phone map and Laser Egg are the latest levers in prying control over information on air quality from the hands of the few to the many, and they are beginning to weigh on how officials respond to the issue. Numerous smartphone applications, including those developed by Sina and Moji Fengyun (Beijing) Software Technology Development, now provide people in China with real-time

access to air quality readings, essentially democratizing what was once an information pipeline available only to the government.

Even the government is getting in on the act. The Ministry of Environmental Protection rolled out a smartphone application called “Nationwide Air Quality” with the help of Wuhan Juzheng Environmental Science & Technology at the end of 2013. “As citizens know more about air pollution, more pressure will be put on the government,” said Xu Qinxiang, a technology manager at Wuhan Juzheng. “This will urge the government to control pollutant sources and upgrade heavy industries.” Sources of air quality data came from the China National Environment Monitoring Centre, local environmental protection bureaus and non-Chinese sources such as the US Embassy’s website in Beijing, Xu said.

Air quality is a controversial subject on the mainland. Since 2012, the public has pushed the government to move more quickly than planned to begin releasing data measuring pollution levels – especially of PM2.5, the particulates most harmful to human health.

The availability of data appears to be filling a need, especially with the arrival of colder temperatures and the associated smog that blanketed Beijing and northern China recently. The 499 yuan (HK\$600) Laser Egg has been sold out since the night of December 8, according to Origins founder Liam Bates. Beijing’s first red alert was imposed between December 8 and noon on December 10, making “everyone realize the environment wasn’t as good as imagined”, said Bates, a 27-year-old Swiss national and a former Chinese television anchor.

Efforts to make products linked to air data continue. IBM has been developing artificial intelligence to help fight Beijing’s toxic air pollution, and plans to work with other municipalities in China and India on similar projects to manage air quality. “Environmental awareness in Beijing is probably among the highest in the world in terms of general public engagement in the issue of air pollution,” said Jonathan Batty, a spokesman for IBM Global labs. “We work with environment protection bureaus to give them insights so that they can act on it and provide that data to the general public.”

66. The World’s Largest Electric Vehicle Maker Also Has a US Presence

BYD was the first to deliver a truly zero-emissions ecosystem to the world in 2011 (as the only EV manufacturer that also builds low-cost solar panels and environmentally friendly energy storage to power fuel-efficient New Energy Vehicles). But BYD is also now the World's No. 1 Battery-Electric Vehicle Manufacturer by sales volumes. In a just-released global EV ranking (Link: <http://insideevs.com/octobers-top-10-best-selling-plug-electric-cars-worldwide/>), BYD came in not only first in global, single-model, sales in October, with a total of 6,099 EV units sold, but October’s rankings also represented an even greater milestone as it was the first time BYD also ranked first in accumulated Global sales throughout an entire year – with a total of over 43,073 NEVs sold (a >220% surge compared to last year), exceeding all American, Japanese and European leaders to date.

BYD's latest EV sale numbers show BYD topping Toyota, Nissan, Mitsubishi, VW and even Tesla volumes by a landslide.

Ranking	Manufacturer	October 2015	2015 YTD *
1	BYD	6,101	43,073
2	Nissan	3,115	42,012
3	Mitsubishi	4,144	36,623

4	Tesla	3,349	36,312
5	VW	3,774	27,755
6	BMW	2,937	25,470
7	Renault	2,568	20,136
8	Kendi	5,081	17,201
9	Ford	1,776	17,117
10	Gotye	2,609	15,384

** Notable manufacturers not making this year's Oct top 10: GM with Volt US sales at ~11,399 units, Toyota with only around ~4100 Prius PHV sales, Fiat and Kia all below 5000 units.*

BYD climbed from the 7th position in late 2014 to the 1st position in under 10 months as the result of a carefully executed strategy and product/feature-value placements in the China markets (with the QIN, Tang and Song launches). BYD is also dominating in the Electric Bus markets where there is no close competition – globally, BYD will deliver nearly 6000 electric buses in 2016, with about 300 zero-emission electric buses scheduled to be built in 2016 from BYD's North American factory – the Bus & Coach Factory in Lancaster, Calif. These numbers alone (6000 in one year) make BYD the Largest Manufacturer of Electric Buses worldwide and surpassed the entire US 2015 bus market volumes.

What is BYD's next move? BYD revealed their go-to-world-markets strategy at the 2015 Shanghai Auto Show with the "7+4 Strategy". The 7+4 strategy is to change the world by replacing high-utility, fossil-fueled vehicles with clean, efficient, even more reliable EVs for seven on-road vehicle markets in this priority:

- Battery Electric Buses (Shuttles and Rapid Transit)
- Battery Electric Taxis (used in 2 and 3 shift operations daily)
- Logistics Vehicles (operated over 18 hours daily)
- Private Vehicles for the Consumer Market
- Battery Electric Motor Coaches
- Construction Vehicles
- Waste Management Vehicles

As well as four off-road vehicles for specialized applications:

- Mining Operations
- Marine Ports
- Warehouse and Logistics
- Airports

Several EV pilot fleets have been deployed in the United States. Stanford University runs a fleet of electric buses, Green Wheels is running BYD eTaxis in Chicago and another eTaxi fleet is launching in New York City and with the new expansion of the BYD factories planned for the US, a wide-range of EV product offerings will be forthcoming including trucks, forklifts and fleet vehicles. BYD has secured its place in the North America marketplace as a premier EV provider.

This news couldn't have come at a better time with the announcement by New York City's Mayor Bill de Blasio, "A cleaner, greener fleet is yet another step toward our ambitious but necessary sustainability goals, including an 80 percent reduction in all emissions by 2050. By building the largest municipal electric vehicle fleet in the country – and potentially the world – New York City

is continuing to lead by example. Cities are setting the pace on climate action – and with our city and our planet's very future at stake, we need national leaders in Paris to take note and take action.”

Outlined in the Mayor's plan is to replace approximately 2,000 fossil fuel sedans with plug-in electric vehicles (EVs), which, combined with the over 300 EVs currently on the road in NYC, would mean EVs will make up half of the City's non-emergency sedans and create the largest municipal electrical vehicle fleet in the United States and, potentially, the world.

67. In A First, China Prosecutors Sue Environmental Department

Prosecutors in eastern China have filed a lawsuit against a county-level environmental protection department, accusing it of "failing to fulfil its regulatory duties" in its supervision of a local sewage firm, China's top prosecutor said.

China's Supreme People's Procuratorate said the lawsuit filed by prosecutors in eastern Shandong province last week marked the first time prosecutors had sued a government department in a public interest case.

"This is the country's first administrative public interest litigation case after the National People's Congress authorized prosecutors to file public interest lawsuits in a pilot program," according to a statement from the Supreme People's Procuratorate on its website.

The suit comes after China's leadership has vowed to crack down on severe levels of air, water and soil pollution, including the heavy smog that often blankets major cities, following decades of unbridled economic growth.

The work of environmental departments has come under extra scrutiny because of public discontent over the environment. Experts say that local governments have pressured courts not to go hard on polluting industries that drive their economies.

Prosecutors in Qingyun County in Shandong had investigated a local sewage firm over allegations that it lacked environmental protection facilities, according to China's top prosecutor. The department imposed only nominal administrative punishments and committed "illegal acts", it said.

In January, China's Supreme Court said it would give environmental groups the power to sue before any pollution had occurred if they could show that a particular activity could threaten the public interest.

68. Chinese Environmental Group Sues VW for Emission Cheating

A domestic environmental group has filed a lawsuit against Volkswagen over the company's cheating on emissions readings. It is the first public-interest lawsuit in China related to pollution from automobile exhaust. The group said it hopes to attract attention to the need to supervise motor vehicle exhaust.

China Biodiversity Conservation and Green Development Foundation, an NGO based in Beijing, said it entered the case against the German auto giant because it "produced the problematic vehicles for the pursuit of higher profits and circumvented Chinese laws, which has worsened the air pollution and affected public health and rights". "Such behavior has violated the law on product

quality, environmental protection and tort liability. So we filed the case,” Wang Wenyong, a lawyer for the group, said.

No 2 Intermediate People’s Court of Tianjin accepted the lawsuit.

The Chinese branch of Volkswagen did not comment on the lawsuit, saying it will provide updates soon.

The cheating scandal had a limited impact on China because the country has been slower in adopting diesel vehicles due to technology and petroleum quality, the Ministry of Environmental Protection said. In China, 1,950 imported vehicles were equipped with the software, and VW has said it will recall them.

The cheating devices had resulted in excessive exhaust while driving, worsening air pollution, the lawsuit said. Vehicle exhaust is a major source of airborne pollutants in China, which in turn affects public health, it said. “We filed the lawsuits in the public interest,” Wang said.

In the lawsuit, the group asked the court to order the automaker to apologize for the cheating and to compensate for the environmental pollution, the details of which will be released after agencies finish their assessments. It also asked that VW be required to provide environmental remediation.

The agencies that uncovered the emissions fraud in United States will provide sufficient material to facilitate the pollution assessment in China, Wang said.

Ma Yong, a researcher at a law center under the Supreme People’s Court said this first lawsuit over vehicle exhaust “could also attract the public attention on supervising exhaust to curb air pollution” more generally. More lawsuits will be undertaken against automakers to deter them from cheating and require them to protect the environment, Wang, the group’s lawyer said.

69. Chinese Cities Boost Toyota's Hunt for Hybrid Car Buyers

China's former leader Deng Xiaoping famously quipped that it doesn't matter if a cat is black or white, so long as it catches mice. When it comes to environmentally friendly cars that might help clear up the nation's polluted skies, China has ignored Deng's advice—to the detriment of Toyota Motor Corp.'s lineup of hybrid cars. That may soon change.

Tianjin and Guangzhou, home to Toyota's local joint ventures, are becoming the first cities to let buyers of new Levin and Corolla hybrids enter lotteries usually restricted to plug-in cars, virtually guaranteeing access to coveted new license plates. The cities are rewarding Toyota for sharing some hybrid technology and know-how with local partners.

More Chinese cities are adopting the plate restrictions to control the number of autos on their roads and promote greener cars. These lotteries are routinely undersubscribed. Getting a plate for a gas engine-powered car is far more difficult. In Beijing, for example, a consumer has a 0.5 percent chance of winning a plate in lotteries held every two months.

“Toyota has done its part to localize production and lower costs,” said Zhang Yi, a Tokyo-based auto industry consultant at Nomura Research Institute. “The government support is the last step they need to reverse hybrid's fate in China.”

Under the new arrangement in Tianjin and Guangzhou, Toyota's newest China models will get a marketing edge as the Japanese carmaker plays catch-up with Volkswagen AG and General Motors Co. in the world's largest auto market. Toyota agreed to localize development and production of hybrid car components after almost two decades of keeping the work contained to Japan.

China has doled out subsidies to electric-car buyers and puts less-stringent purchase restrictions on plug-in autos in urban centers as part of a government strategy to reduce tailpipe emissions and dependence on imported oil. Conventional hybrids, which run on a combination of a gasoline engine and a battery, have been excluded in the government's new-energy vehicle programs until now. The lack of state support has hampered Toyota's bet that hybrids could be a more realistic solution to reducing emissions, since plug-in cars sold by companies including BYD Co. and Chery Automobile Co. are dependent on still-nascent charging infrastructure. While Toyota has sold more than 8 million hybrids globally, it delivered only about 1,000 Prius and 5,700 Camry hybrids last year in China.

With Tianjin and Guangzhou getting behind the Corolla and Levin hybrids, Toyota received orders for 8,000 units in the three weeks after their introduction in late October. That level of hybrid demand is unprecedented for the carmaker, which first introduced the gasoline-electric Prius to the China market in 2005. "Toyota has taken 10 years to sharpen a sword," Hiroji Onishi, Toyota's chief executive officer for the China region, said last month at the Guangzhou Motor Show. "This year marks the start of a hybrid era in China."

Beijing made its lotteries for gasoline cars more stringent from last year as part of efforts to contain tailpipe emissions. Despite these efforts, a round of air pollution blanketed the city's sky as President Xi Jinping visited Paris for the United Nations-led talks on a deal to fight climate change.

Guangzhou's hybrid support was a deciding factor for Jason Chen, a 35-year-old city resident, who has placed an order for a 150,000 yuan (\$23,400) Levin hybrid. "I like the car's fuel efficiency and exterior design, but what really convinced me is the dealer said I can get a free number plate," he said by phone.

Toyota is negotiating for more cities to offer hybrids support similar to what the government offers for new-energy vehicles, said Jiang Jun, president of FAW Toyota Motor Sales Co. The FAW Toyota joint venture plans to increase production of the Corolla hybrid next year by as much as 15 percent to 45,000 units, said Zhang Sijun, a general manager of the marketing planning division. This would boost both FAW and local Chinese battery supplier Hunan Corun New Energy Co. "It's been proven that years of lobbying the central government won't work," said Zhang, of Nomura Research. "Cracking open local cities one by one should be a better strategy."

70. China Suspends Fuel Price Cuts to Curb Oil Concerns

China suspended fuel price adjustments as the world's biggest energy consumer tries to curb demand growth and cut pollution to help improve air quality. Shares of the country's biggest energy producers surged.

Keeping domestic fuel rates stable, while oil price continue to fall, can help curb petroleum consumption from "increasing too fast," the National Development and Reform Commission, the country's top economic planner, said in a December 15th statement.

Automobile emissions are part of the reason for worsening air pollution, according to the NDRC. Gasoline and diesel prices should have been cut by 200 yuan (\$31) a metric ton December 15, based on its previous mechanism, according to ICIS China, a commodity researcher. "It seems that the government won't cut prices until the pollution situation gets improved," said Wei Wei, an analyst at Huaxi Securities Co. in Shanghai. "Otherwise more people will buy and consume cheaper fuel to add to pollution."

"With acute pollution across major cities in China, partly attributable to vehicle exhaust, the objective is to slow consumption growth," Neil Beveridge, a Hong Kong-based analyst at Sanford C. Bernstein & Co., wrote December 16 in a research report. "If crude prices continue to decline then refiners will continue to benefit through margin expansion as refined product prices are kept constant."

The suspension of oil product price adjustments could temporarily widen refining margins by \$2 to \$3 a barrel, and they could improve further if crude prices continue to fall, Beijing-based China International Capital Corp. said in an e-mailed report. Brent crude, a benchmark for most of the world's oil, has fallen about 14 percent this month.

China changed its system for setting gasoline and diesel prices in March 2013 to more closely track refiners' crude costs. Fuel prices have been reviewed every 10 working days based on the average price of a basket of crudes, down from 22 days previously. The government will revise the current oil pricing mechanism and will seek public comment on the changes, the NDRC said in its statement.

The nation's gasoline demand exceeded expectations in the first 10 months of the year by increasing 10.4 percent from a year earlier compared with weak diesel and fuel oil consumption, underscoring the country's shift away from heavy manufacturing, the Paris-based International Energy Agency said December 11 in its monthly Oil Market Report.

71. China Ports to Require Low-Sulfur Fuel for Oceangoing Vessels

In an effort to address air pollution problems, China will require oceangoing vessels berthing at its primary ports to switch to low-sulfur fuel in 2017, the government announced. The move will require ships at 11 ports to use fuel with a sulfur content of 0.5 percent or below starting in 2017, according to a plan for emissions control zones the Ministry of Transportation released December 4.

By 2019, the requirement will be expanded to cover all port areas in China's three main shipping regions: the Bohai Bay area near Beijing and Tianjin municipalities; the Yangtze River Delta area around Shanghai; and the Pearl River Delta area in Guangdong Province. The Pearl River area includes the Hong Kong special administrative region, which has launched mandatory switching at berth, and Shenzhen, which has implemented a similar voluntary policy during the past year.

The announcement follows a comprehensive Ministry of Transportation policy on controlling emissions released earlier this year.

Freda Fung, a consultant for the Natural Resources Defense Council, said emissions control inventories that Shanghai, Shenzhen and Hong Kong have developed "clearly show that shipping is a significant source of local air pollution" and that requiring low-sulfur fuels can curb pollution.

The Ministry of Transportation plan also allows some flexibility in lowering the sulfur content even further to 0.1 percent and expanding the scope of the emissions control zones. “This can pave the way for China to implement the world's most stringent fuel standard along its coast, and the current plan could be effectively enforced and show results in improving local air quality, helping give the Chinese government confidence in applying for [emissions control area] designation under the IMO [International Maritime Organization] framework,” Fung said.

72. Japan's Plans to Fuel Cleanest Cars Hitting Roadblock

Japan Prime Minister Shinzo Abe has big plans for his country to lead the way in clean cars. His bureaucrats are getting in the way. Abe has declared hydrogen-powered fuel cell vehicles “the ultimate eco car,” praising their promise for the environment and Japan's domestic automakers, which are ahead of the pack. A symbol of the challenges he is running into is the compact hydrogen fueling station that Honda Motor Co. is having to put on hold.

Lengthy criteria that regulators are still finalizing after three years of deliberation are undermining interest from local governments in the stations, which would boost the appeal of Honda's Clarity Fuel Cell sedan. Bureaucracy risks holding up Japan's ambitions to lead in fuel-cell vehicles and the infrastructure that refuels them, despite Abe's pledge to ease rules when he endorsed Toyota Motor Corp.'s Mirai sedan earlier this year.

“We are very confused and baffled by the slowness and difficulty of the regulation review,” said Naoya Toida, general manager of Honda's smart community planning office. “The regulation is strengthening rather than easing.”

As many as 100 local governments have hesitated from ordering Honda's Smart Hydrogen Station until Japan's Ministry of Economy, Trade and Industry implements rules that would accommodate smaller fueling facilities. The ministry is aware of criticism of the delay and plans to issue the final regulation by the fiscal year-end in March, said Hidehiro Yajima, head of METI's high-pressure gas safety office.

Abe's government has sought to transition resource-scarce Japan to alternative energy sources and has estimated the nation's hydrogen market could expand to 1 trillion yen (\$8.2 billion) by 2030.

Honda developed the Smart Hydrogen Station along with Iwatani Corp., Japan's biggest hydrogen supplier, to boost supply outside of major cities. Only two are open for testing: one in Saitama prefecture, a suburb north of Tokyo, and the other in Kitakyushu, a city in southern Japan.

Iwatani won't disclose the price of the stations for competitive reasons, Sumire Yamazaki, a spokeswoman, said by phone. She declined to comment on the timing of sales for the stations or METI's rulemaking process.

While METI has set the criteria on what materials can be used to make hydrogen storage tanks and the amount of space between stations and roads, those have applied only to larger facilities. “Japan's bureaucrats are too careful and too slow while the companies are moving at a faster pace to catch the opportunity,” said Shoichi Kaneko, senior manager at the Research Association of Hydrogen Supply/Utilization Technology. “This difference is a burden for companies.” METI is preparing detailed safety standards for local governments as they decide whether to purchase smaller stations, Kaneko said. Local governments are viewing the criteria as requirements rather than suggestions, which is discouraging compact station sales, he said.

Honda's strategy to develop stations and refueling equipment and market them with Iwatani goes a step further than Toyota, which has stuck to introducing Mirai and covering part of the operating costs for hydrogen stations. Both companies are betting on fuel cell vehicles, with Honda's 7.66 million yen Clarity Fuel Cell beginning sales in March, more than a year after Toyota started delivering its 7.24 million yen Mirai.

Toyota and Honda have set conservative targets for early sales of the cars, in part due to scarce hydrogen refueling infrastructure. Toyota plans to make about 2,000 Mirai sedans in 2016, while Honda plans to start selling about 200 Clarity Fuel Cells a year.

Promoting a hydrogen society is part of a broader drive by Japan's government to reduce reliance on imported oil and find an alternative energy source to nuclear power, which has faced public resistance after natural disasters crippled a plant in the eastern Fukushima prefecture in 2011.

Toyota plans to boost Mirai sales to 30,000 units, including 12,000 in Japan, by 2020, the year Tokyo hosts the summer Olympic Games. Honda also expects deliveries will increase with efforts including a cooperation with General Motors Co. to cut costs on key materials and components.

73. Faurecia Stakes Claim as Emission Control Leader

On a cold, dreary day when Shanghai was shrouded in its heaviest smog of this year, the emissions-control arm of Faurecia, the world's biggest player in its field, broke ground for construction on its new Asia-China headquarters for research and development. Located in an industrial park in the city's Minhang District, the new facility will run an emissions control testing lab when it opens in 2017. The center will also include a prototype shop and an Asia standard equipment integration center. Manufacturing equipment assembled there will be shipped to France-based Faurecia's 15 plants in China.

The new location will be able to support 250 development programs a year by 2020, signaling the expected surge in demand for cleaner exhaust systems. Faurecia's first research and development center for emissions control in China, when opened in 2009, counted its programs in the lower double digits.

Next year, the Nanterre-based company will launch the production of its gasoline particulate filter, which helps remove the fine particles endemic to China's air quality problem. The level of those particles tends to rise in the latest direct-injection and turbo-charging engines — a by-product of the nation's trend of engine downsizing for greater fuel economy.

Starting in 2017, Faurecia's diesel particulate filter, co-invented with French automaker PSA Peugeot Citroën, will become the standard operating procedure for two carmakers in China. The filter reportedly has been proven to be 99.97 percent effective in eliminating the particulates.

Separately, a project called ammonia storage delivery system (ASDS) retrofit is showing great promise in its early stages. It is designed to meet China's National VI emission standard for diesel engine cars, now being drafted.

SOUTH AMERICA

74. Brazil Fines Volkswagen \$13 Million for Emissions Fraud

Brazil fined Volkswagen 50 million reais (\$13.1 million) after the company admitted that 17,057 Amarok model, medium-size diesel-engine pickup trucks sold in 2011 and 2012 were fitted with software designed to cheat on nitrogen oxide emissions tests. The November 12th announcement came from IBAMA, the enforcement agency of Brazil's Environment Ministry.

Volkswagen must recall these vehicles, present to IBAMA a plan to repair their software, and make sure that the pickup trucks' with updated software comply with Brazilian emissions standards, the agency said in a statement.

There were no indications that non-diesel Amarok pickup trucks equipped with gasoline or ethanol-fueled engines failed to comply with Brazilian emissions standards, according to IBAMA.

The fine of Volkswagen, one of the four largest automakers in Brazil, is the maximum that IBAMA can levy for a single environmental crime.

AFRICA

75. World Bank Sets Plan for African Climate Campaign

The World Bank announced on November 24th a \$16 billion plan to help African communities adapt to climate change, which poses threats ranging from food price increases to more frequent droughts and the rising risk of malaria. The African Climate Business Plan outlines steps for safeguarding land, water, cities and humans from adverse climate change effects such as extreme weather. It also aims to build more renewable energy and early warning systems. The proposals will be presented at the 21st United Nations Conference on Climate Change in Paris.

The Washington-based development bank warned that climate change could lead to 43 million more Africans living in poverty by 2030 unless action is taken. The continent requires \$5 billion to \$10 billion of investment a year to adapt to a 2- degree Celsius increase in temperatures, it said, referring to an international goal for limiting global warming. Almost 40 percent of the \$16 billion is expected to come from the World Bank through its International Development Association, a unit that works with the world's poorest countries. Other development partners will likely contribute \$2 billion, with another \$2.2 billion coming from "climate-finance instruments," the bank said. The private sector is expected to provide \$3.5 billion. The World Bank said it must mobilize another \$2 billion to reach its target. The African Development Bank said in October that it will boost its climate financing to \$5 billion a year by 2020. "The Africa Climate Business Plan spells out a clear path to invest in the continent's urgent climate needs and to fast-track the required climate finance to ensure that millions of people are protected from sliding into extreme poverty," said Makhtar Diop, World Bank Group vice president for Africa.

MIDDLE EAST

76. Air Pollution Claims Up To 180 Lives in Tehran Each Day: Official

Recent days have seen high level of air pollution in Tehran, and that has, according to reports and statistics, claimed the lives of 150 to 180 people each day, Mehdi Chamran, chairman of Tehran City Council, said in a meeting. His remarks came as Tehran's schools and kindergartens remained closed for the third consecutive day due to the bad air quality.

On Sunday, Tehran's air pollution committee decided to shut down some pollutant factories in Tehran province and stop selling licenses for cars to enter downtown.

Iran's government and parliament are working to solve the air pollution problem in Tehran by imposing restrictions on city traffic, and passing laws to urge cleaner fuel and more fuel-efficient vehicles.

Also, the Iranian authorities announced plans of decentralizing policies in the country in a move to slow down the accumulation of people and industries in the capital to a considerable degree. However, the plans were left unimplemented for unannounced reasons.

GENERAL

77. Report: Annual Carbon Emissions Could Be Leveling Off

The annual increase in global carbon dioxide emissions from the combustion of fossil fuel and from industrial processes “almost stalled” in 2014, with emissions about 0.5 percent higher than in 2013, according to the “Trends in Global CO₂ Emissions 2015” report from the European Commission's Joint Research Center (JRC) and the Dutch Environmental Assessment Agency.

The JRC, the commission's in-house science service, said although it was “still too early to confirm a positive global trend,” there were signs that the volume of carbon dioxide emitted annually was leveling off, compared to the rate of increase of about 4 percent each year in the decade up to 2011.

The main factors in flat-lining emissions in 2014, according to the report, were reduced per capita energy consumption—partly because 2014 was the warmest year on record—increased energy generation from renewables, and a slowdown in the growth rate of Chinese emissions, which rose 0.9 percent in 2014.

The EU continues to show leadership on CO₂ emission reductions. In 2014, despite an overall increase of 1.4% in the GDP for the European Union, the EU decreased its CO₂ emissions by 5.4% with respect to 2013. This comes after reductions also in the two previous years, although the reductions in 2012 and 2013 were at much lower rates (-0.4% and -1.4%). The results illustrate the continued decoupling of Europe's economic growth from CO₂ emissions. Total EU CO₂ emissions are now 23% below the 1990 level.

The study suggests three main reasons for this drop: 1) a 4.5% emissions reduction from industrial facilities and power plants that are part of the EU Emissions Trading System, 2) a mild winter which resulted in a 10% lower heating demand and 3) a 0.5% reduction in oil consumption for transport.

Significant reductions in national CO₂ emissions were recorded for Slovakia (10.6%), the United Kingdom (9.0%), Denmark (8.8%), France (8.4%), Italy (7.7%), Finland (6.9%), Greece (6.3%), Austria (6.0%), Germany (5.6%), the Netherlands (5.3%), Portugal (3.6%) and Poland (3.4%). Of the 28 EU Member States, only Bulgaria and Cyprus increased their emissions, by 6.9% and 0.5%, respectively.

For the first time, the EU's share of global CO₂ emissions fell below 10%. Responsible for 9.6% of the global emissions, the EU is still the third largest emitter globally after China (30%) and the United States (15%).

The report, issued on November 25th, found that Australia, the European Union, Japan and Russia cut their emissions in 2014, while carbon dioxide emissions rose slightly in the U.S. and there were larger increases in Brazil, India and Indonesia.

In particular, India's emissions increased by 7.8 percent, making India the world's fourth-largest emitter after China, the U.S. and the EU, the report said. The four top emitters now account for 61 percent of global emissions, according to the report.

The JRC said the much lower increase in the annual global volume of emitted carbon dioxide "sends an encouraging signal on the decoupling of CO2 emissions from global economic growth."

The JRC/Dutch Environmental Assessment Agency emissions report has been published since 2009, and contains emissions figures derived from fossil fuel consumption data, and from production data for cement, lime, ammonia and steel.

78. ICAO Council Affirms Climate Actions for Aviation

The United Nations body responsible for international civil aviation said it recognizes its leadership role in limiting or reducing greenhouse gas emissions but stressed that the aviation industry should not be expected to pay a disproportionate share of the cost of financing global climate change actions.

The International Civil Aviation Organization's 36-member governing council said on November 24th in a declaration that it would ensure continuous leadership on environmental issues but reiterated serious concerns about using the aviation industry as a source of revenue for financing climate action.

"There have been a number of calls for global air transport revenues to be taxed by states for use in non-aviation-related climate change mitigation programs," ICAO Council President Olumuyiwa Benard Aliu, said in a statement. "The ICAO Council, through this recent declaration, wished to stress very clearly in advance of COP-21 that this is an unfair approach."

Putting too much burden on the aviation sector is counterproductive given the industry's exemplary environmental performance and the socioeconomic benefits it provides, he said.

The council's declaration, which is to be communicated to the 21st Conference of Parties (COP-21) to the UN Framework Convention on Climate Change summit in Paris, reaffirmed ICAO's commitment to measures to improve the sector's environmental performance, including modernizing air traffic management operations, introducing a carbon dioxide standard for new aircraft in 2016, developing alternative fuels, reducing aviation emissions and finalizing a global market-based measure for international aviation for post-2020, the ICAO said in the appendix to its declaration.

A final decision on the market-based measure is expected to be made at the body's triennial assembly in the fall of 2016, it said.

The governing council also agreed to conduct more interactive global aviation dialogues with its member states in March and April 2016, followed by a high-level meeting in May 2016 to address a draft resolution to the overall ICAO assembly on a global aviation market-based measure.

79. Greenland Glacier Melt Accelerating, Study Says

A glacier in northeast Greenland that holds enough water to raise global sea levels by more than 18 inches is breaking apart and melting into the Atlantic Ocean, losing mass at a rate of 5 billion tons a year, according to a new study. The glacier, called Zachariae Isstrom, entered a phase of “accelerated retreat” in 2012, and has broken loose from a floating ice shelf that had been keeping it moored and stable, researchers said in an article published in the November 12th issue of the journal *Science*.

The researchers used data from aerial surveys and satellite-based observations used by international space agencies to determine that the bottom of the glacier is being eroded by warmer ocean water mixed with increasing amounts of melting ice.

North Greenland glaciers like Zachariae Isstrom have been stable historically, even as those in the south of Greenland have been melting, said lead author Jeremie Mouginot, an assistant researcher in the department of earth system science at the University of California, Irvine. “This is one of the first that is starting to change and discharge more ice,” Mouginot told reporters. “We fear that other glaciers in the region will follow the same path in the coming decades.”

Zachariae Isstrom and another large glacier, Nioghalvfjerdingsfjorden—which also is receding—make up 12 percent of the Greenland ice sheet, and if both fully collapsed, sea levels would rise by more than 39 inches, the researchers said.

The researchers were able to get the data through the World Meteorological Organization's Polar Space Task Group, which coordinated with space agencies. “We hope we can continue to push the space agencies to acquire data” and that funding for similar projects will be available in the future, Mouginot said.

Meanwhile, a separate study found that climate change is causing precipitation to fall as rain, rather than snow, in many areas that rely on slow-melting snow for agriculture and other uses, which could lead to water shortages in parts of the American West, southern Europe, the Middle East and central Asia. The study, published November 12th in the journal *Environmental Research Letters*, analyzed 421 drainage basins spanning the Northern Hemisphere, combining multiple climate models with present water-use patterns and demographics. They further analyzed 97 basins that are likely to decline, given present water demands, zeroing in on 32 of those with the largest populations that are most sensitive to changes.

Among the regions that could be affected: Northern and Central California; the Colorado River and Rio Grande River basins; the Atlas Basin of Morocco, and the Ebro-Duero Basin, which feeds water to Portugal and much of Spain and Southern France.

“Water managers in a lot of places may need to prepare for a world where the snow reservoir no longer exists,” lead author Justin Mankin, a postdoctoral fellow at Columbia University's Earth Institute, said in a statement announcing the study's release.

The study indicates that climate change will put additional stress on regions already struggling with water-scarcity issues, particularly where irrigation is supplemented by shrinking supplies of groundwater, Yoshihide Wada, a researcher at Utrecht University, said in the statement.

80. Details of HFC Phase-out Agreement Yet to Be Resolved

Countries have agreed to amend the Montreal Protocol in 2016 to phase down use of hydrofluorocarbons (HFCs), extremely potent but short-lived greenhouse gases, but details of how that phasedown will be achieved equitably must still be negotiated in a series of extraordinary meetings to be held next year.

Key components to be determined will be funding assistance for developing countries, differentiated phasedown schedules and intellectual property rights to some of the alternatives, Durwood Zaelke, president of the Institute for Governance & Sustainable Development, who participated in the negotiations told reporters on November 6th. That assistance will be critical as the amendment will push countries to further limit their use of HFCs, which were intended to replace hydrochlorofluorocarbons (HCFCs), which deplete the ozone layer.

“We’re asking now all the countries to do a second transition simultaneously with the one that’s already going on,” Zaelke said.

Countries announced that they had agreed to phase out use of HFCs at the conclusion of the 27th Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, which ran from November 1–5 in Dubai. Details of the amendment are expected to be hammered out in 2016 during an extraordinary working group meeting and an extraordinary meeting of parties.

U.S. Secretary of State John Kerry said the agreement opens “a new chapter” in global efforts to tackle climate change, because it targets greenhouse gases far more potent in contributing to global warming than carbon dioxide, the most prevalent greenhouse gas.

“This is a major accomplishment” under the Montreal Protocol, Kerry said in a statement because implementation of the amendment backed by countries in Dubai could avoid 0.5 degree Celsius of warming by century’s end.

A ton of HFCs has a global warming potential—the degree to which a substance warms the planet—of up to 10,000 times that of a ton of carbon dioxide, but they have much shorter atmospheric lives. If implemented, the HFC reductions could be a significant contribution to the temperature goal negotiators hope to include in a United Nations climate deal at December talks in Paris: a global goal to keep temperatures from rising more than 2 degrees Celsius (3.6 degrees Fahrenheit) above preindustrial levels to avert catastrophic climate change.

The Dubai agreement has “laid the groundwork for even greater cooperation toward a successful outcome” at the Paris summit, Kerry said, where nearly 200 nations hope to get a global climate agreement that would enter into force in 2020.

President Barack Obama has made curbing emissions of HFCs part of his administration’s efforts to address climate change.

U.S. Environmental Protection Agency Administrator Gina McCarthy, who attended the Dubai talks, said the agreement would spur all countries to “transition to alternatives and away from HFCs” in the years ahead. The EPA, which would implement the protocol, has taken steps under the Significant New Alternatives Policy (SNAP) Program to phase out the use of some HFCs. The Natural Resources Defense Council and the Institute for Governance & Sustainable Development, however, have petitioned the EPA to go further and ban the use of several other HFCs as well.

The EPA will publish in the Federal Register a proposed rule (RIN 2060-AS51) that would expand Section 608 of the Clean Air Act to bar the deliberate venting, release or disposal of HFCs or other non-ozone-depleting substitute refrigerants when servicing or disposing of air conditioning and refrigeration equipment. The administration announced the rule in October as major private sector companies, including Dow Chemical Co., Honeywell International Inc., Johnson Controls Inc. and Target Corp., also announced new commitments to slash emissions of HFCs.

Supporters of the amendment said the international agreement should provide momentum for the upcoming Paris negotiations.

“It is a significant accomplishment for climate action on the road to the Paris Climate Conference later this month and sends a strong signal that the international community can come together to confront some of the world's greatest environmental challenges and continue progress toward cutting global greenhouse gas emissions,” McCarthy said.

The next round of amendment talks likely won't happen until after the Paris negotiations, but Zaelke said participants “are prepared to move extraordinarily fast” after that.

“I think we've seen this at other times too, there being this sense of momentum. It's critical we maintain that sense of momentum post-Paris,” Carol Werner, executive director of the Environmental and Energy Study Institute, told reporters. While the parties have not yet set a schedule for the amendment talks, Werner said the Obama administration will likely push to have the amendment finished before it leaves office in January 2017.

“Everybody will be feeling urgency so things aren't just hanging around,” she said.

The success of the Montreal Protocol should spur nations as they meet to reach a new climate agreement, advocates said. The protocol's success also highlights the importance of pursuing multiple avenues to address climate change, Zaelke said. “This is a treaty that always does its business and always moves forward,” he said. “It's the best example I've ever seen of an international agreement where business gets done on a regular basis.”

81. Study Calls for Strong Transport CO2 Targets

CO2 emissions from international aviation emissions should be capped at 39% of 2005 emissions levels by 2030 and shipping emissions at 13% to limit global warming below 2°C, a study for the European Parliament has indicated. By 2050, emissions from aviation should not exceed 41% of 2005 levels. And the international maritime sector should target a 63% reduction, a draft study by consultancy Öko-Institut argued.

It was commissioned by the European Parliament's environment committee to investigate emission reduction targets that would achieve the objective of keeping global warming below 2°C.

But the targets, which would be implemented from 2020, should not be considered as sectoral caps as they are “significantly below mitigation potentials” for the sectors, the authors warned.

To achieve them, offsetting international transport emissions by financing reductions in other sectors should be allowed, according to the authors. And efforts to reduce demand for international transport services by encouraging behavioral change will also be needed in addition to technological and operational improvements.

In 2012, aviation was responsible for 1.3% of global CO2 emissions and shipping 2.2%. But their combined share of global CO2 emissions may rise to nearly 40% by 2050 if action is not taken, according to the study.

The International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO) have been slow to take action on emissions and their proposed measures will only mitigate CO2 emissions growth rather than leading to absolute reductions, the consultants noted.

While ICAO has adopted a non-binding goal to stabilize CO2 emissions from international aviation after 2020, the IMO has no plans to implement emission reduction targets.

82. Green Car Technologies Compete In Los Angeles

Asian automakers are opening up a new front in the contest to define the future of cars in California, fielding a flock of cars powered by hydrogen in a bid to woo green car buyers from Tesla Motors Inc, the battery electric vehicle leader.

Toyota, Honda and Hyundai used the opening days of the Los Angeles auto show, which draws thousands of car enthusiasts in one of the world's richest vehicle markets, to tout new fuel-cell cars. These use hydrogen in a process that creates electricity but not carbon dioxide. Automakers plan to offer these cars in California, although the rollout will be limited.

Hyundai says it has already leased its fuel-cell Tucson to about 85 customers, and Toyota says it has received expressions of interest from more than 2,000 people. Honda's Clarity sedan will only be available in late 2016. Fuel-cell technology is expensive, and hydrogen fueling stations are still rare. Hyundai's Tucson can be leased for \$499 per month and sold only in Southern California, where there are about nine fueling stations.

Toyota's new Mirai can run for 300 miles between charges. Bill Fay, general manager for Toyota brand sales in the United States, told Reuters that a concerted public-private push is needed to build more refueling stations. "We need the government to support the investment in this and we hope that Honda and Hyundai will be coming in and provide some support," Fay said. "Then I think we have some critical mass to build from and take off from there."

California provides as much as \$100 million a year to fund alternative fuel and vehicle projects, including hydrogen refueling stations.

Tesla Chief Executive Elon Musk and other Tesla executives have taken shots at fuel cells and the tax-funded subsidies used to promote them. Fuel cell vehicles compete with Tesla's electric cars as generators of credits that could help conventional automakers meet California's complex zero emission vehicle quotas.

Tesla has benefited from, and repaid, government loans. It sells clean car credits. Tesla has also built its own recharging network.

"Fuel cells are dependent on public infrastructure in a way electric vehicles will never be," Tesla's vice president for business development, Diarmuid O'Connell, said at an appearance before the Automotive Press Association. And because much of the hydrogen used in fuel cell vehicles will be derived from fossil fuels, he said, "fuel cell vehicles are not even zero emission vehicles."

Battery electric cars rely on an electric grid that in many regions of the United States is fueled by coal and gas, but O'Connell said the U.S. grid is getting cleaner.

Public subsidies and regulations are the key forces driving the competition between fuel cell vehicles and battery electric vehicles in California, where state regulators have mandated that up to 16 percent of vehicles, or 1.5 million cars, sold in the state by 2025 be zero emission. Currently, about 2 percent of the vehicles sold in California are electric cars.

Both fuel-cell cars and battery electric cars have limitations that discourage many would-be buyers. Most electric battery-powered cars on the market run for fewer than 100 miles between recharging stops. Tesla's Model S sedan and Model X sport utility can run for more than 200 miles between charges, but the average Tesla sells for over \$70,000.

Low gas prices undermine demand for both technologies. Only about 67,700 electric vehicles were sold in the United States last year - about 0.4 percent of the 16.5 million new cars and trucks sold.

"The electric car that has earned one dime for its maker hasn't been created yet," said Johan de Nysschen, president of General Motors Co's Cadillac luxury brand, on the sidelines of the show. Still, GM plans a new electric Chevrolet model with a projected 200-mile range, and is experimenting with fuel cell technology.

83. Historic Global Agreement Reached at Paris Climate Summit

On December 12th, envoys from nearly 200 countries ended an arduous two weeks of negotiations by approving what French President Francois Hollande declared the "first universal climate agreement." The so-called Paris Agreement was reached in a brief final plenary that took place more than a day later than scheduled, after a few technical changes. The substance was unchanged from a text that was met with a lukewarm response from environmentalists and delegates from some developing countries, who said it is too weak to accomplish the long-term goals it promises.

Significantly, the deal includes language on finance issues that clearly differentiates the responsibilities of rich and poor countries, but it does not include any specific dollar goals beyond reiterating the \$100 billion adaptation goal for 2020 agreed to previously.

On the issue of loss and damage, which is a kind of insurance policy for poor countries that suffer severe impacts from climate change, the text retains the language in a stand-alone section, but it also specifies that the Paris agreement cannot be interpreted as "a basis for any liability of compensation" from rich countries—an important concession to the U.S. and some other developed countries.

After a third consecutive all-night negotiating session, French Minister of Foreign Affairs Laurent Fabius—president of the United Nations summit that got under way November 30—released the December 12 draft agreement that for the first time had no brackets indicating unresolved options. A final vote followed soon afterwards.

The long-term goal for arresting temperature rise was strengthened from the previous version of the text, calling for a limit of "well below 2 degrees Celsius" compared to pre-industrial levels, with a call to "pursue efforts" for a 1.5 degree Celsius limit (2 degrees Celsius is 3.6 degrees Fahrenheit; 1.5 translates to 2.7 degrees Fahrenheit).

But there was no definition for the phrase “well below,” and environmentalists said the text lacked the tools to keep warming within the 2 degree threshold.

Another area strengthened compared to the previous version of the text is the creation of a defined review schedule. Though it falls short of being a “ratcheting mechanism” or “ambition mechanism” as poor countries called for, it does ask the Intergovernmental Panel on Climate Change—the UN’s climate science and research body— to produce a new report on “pathways” to the 1.5 degree target.

It also said countries would be “requested” to resubmit their Intended Nationally Determined Contributions—the national climate pledges they made in the run-up to the Paris talks—by 2020, and then every five years after that. And countries would not be allowed to submit new pledges that weaken previous commitments.

The text also set up rules for land use, called REDD, and for transparency issues including independently monitoring, reporting and verifying national emissions.

The vote for the Paris Agreement was unanimous, as required, but not all countries were pleased.

“We as South Africa take this leap as required, but we do it knowing that we do not have the guarantees in place for our needs and the needs of other developing countries,” said South African climate ambassador Nozipho Joyce Mxakato-Diseko. Mxakato-Diseko said her reservations were related to the language on loss and damage and finance, which she said she hoped would be strengthened in the future.

Now that it is adopted, the pact will require ratification by legislatures from at least 55 countries representing 55 percent of the world’s emissions for it to enter into force, something that must take place by 2020.

84. UN Agency Allows Aircraft Emissions Credits

The United Nations agency responsible for international aviation has finalized a Clean Development Mechanism to generate emissions credits from electric aircraft taxiing systems in developing countries. The CDM approach under the UN Framework Convention on Climate Change, approved at the CDM board’s November 27 meeting in Paris, quantifies carbon dioxide reductions from electric taxiing systems used to maneuver aircraft at airports, the International Civil Aviation Organization (ICAO) said November 27 in a statement. “The approved methodology represents an important first step in allowing credits to be generated by aviation emission reduction initiatives and will eventually help to realize a more environmentally sustainable air transport sector globally,” ICAO Secretary-General Fang Liu said.

The statement noted that the organization and the UNFCCC Secretariat are working on a CDM methodology for the supply and use of solar power for aircraft operations at airport arrival and departure gates. CDM allows emissions reduction projects in developing countries to earn certified emission reduction credits and the salable credits, each representing one metric ton of carbon dioxide, allow industrialized countries to use them to meet emission reduction targets under the Kyoto Protocol. Emissions from aviation activity represent about 2 percent of global carbon dioxide emissions from human activity, but significant growth is expected as aviation markets in developing countries expand, according to the ICAO.

85. Paris Agreement Silent on Aviation, Shipping

The Paris Agreement makes no mention of cutting CO₂ from aviation and shipping, weakening the link between these growing sectors and the agreed goal of keeping global temperature rise well below 2°C. A draft paragraph that would have required countries to “pursue the limitation or reduction” of aviation and shipping emissions was dropped in the second week of the Paris talks. The draft paragraph had said countries should work “through the International Civil Aviation Organization and the International Maritime Organization, respectively, with a view to agreeing concrete measures addressing these emissions”.

To date, progress towards agreeing emissions reductions measures at ICAO and the IMO has been glacial. International shipping and aviation now account for 5% of global emissions.

Including aviation and shipping in the Paris deal would have put much needed external pressure on ICAO and the IMO to move forward, and would have made governments negotiating in those fora accountable in terms of the Paris Agreement’s overall objectives, said Andrew Murphy of green group T&E. Without specific provisions on transport in the climate deal, there is a risk that transport ministers negotiating at ICAO and the IMO will not pay attention to the climate deal’s core objectives, he added. These include carbon neutrality by the end of the century.

But air transport industry group ATAG said the Paris Agreement provided “important building blocks” for carbon-neutral growth in the sector. These included “support for international carbon markets and the use of forestry as a source of offsets” because “the aviation sector will need access to high-quality offsets as it develops the global market-based measure”.

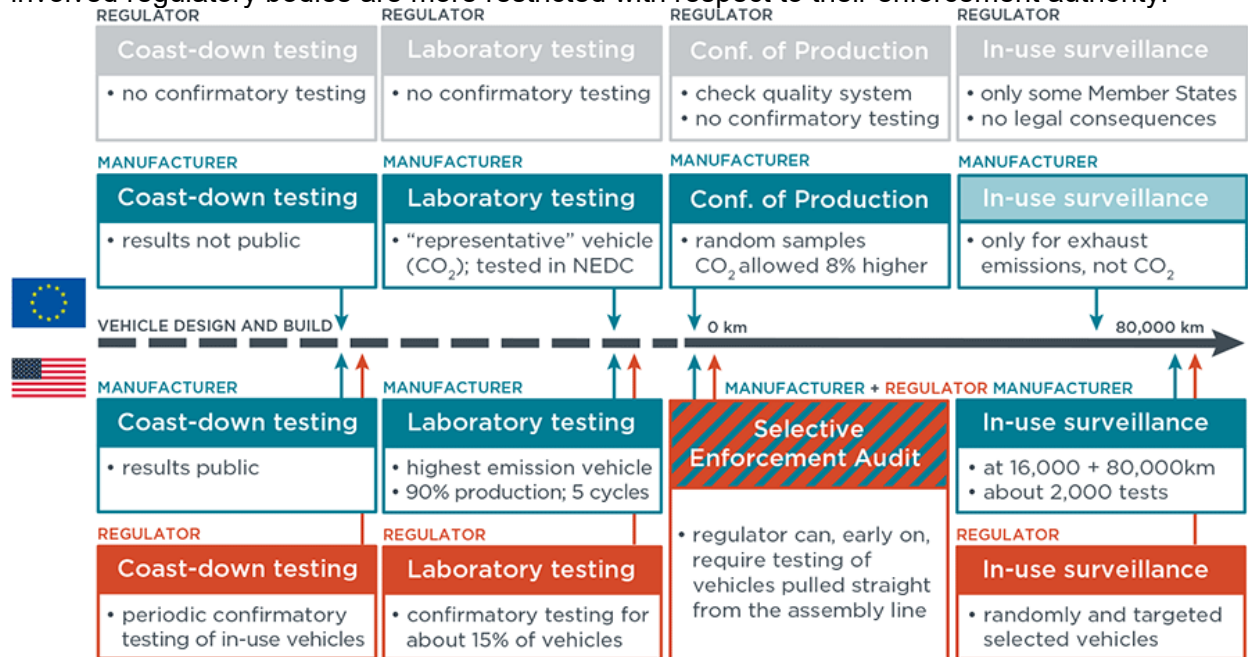
The EU, which has long pushed for more ambition at ICAO, argued for retaining a mention of aviation and shipping and built a coalition of supporters for this position in Paris, including New Zealand and Canada. But the EU lost the argument to China, India and the US, who all wanted to keep the ICAO and IMO processes separate from the UN Framework Convention on Climate Change. China and India are thought to have been concerned about the impact of ambitious emissions reduction objectives in the transport sector on trade.

ICAO is due to adopt a global market based mechanism in October 2016, limiting growth in aviation emissions. The IMO’s environment committee will discuss fuel efficiency and greenhouse gas emissions at meetings in April and October 2016.

86. ICCT Critiques Vehicle Emissions Testing and Compliance; Call For Independence

A growing body of evidence indicates that one of the reasons for a rapidly growing discrepancy between official and real-world fuel consumption and emission values of new passenger cars is shortcomings in the certification testing schemes for new vehicles and in the compliance protocols. Vehicle manufacturers are increasingly able to exploit tolerances and flexibilities, leading to downward-trending type-approval emission levels that are not matched by a similar decrease in real-world emission levels—indeed, the real-world values contradict the type-approval results. The recently uncovered use of an illegal defeat device by Volkswagen crosses a line between illegality and the simple exploitation of legal loopholes that allow manufacturers to observe the letter of a regulation while disregarding its spirit and intent. But it nevertheless serves to dramatically highlight a broader underlying problem with today’s vehicle emissions testing and compliance systems.

This new study by the International Council on Clean Transportation compares the vehicle testing and compliance schemes in the European Union and the United States, and reveals that the fundamental difference between them is not so much the actual vehicle testing itself but the strong focus on independent conformity testing coupled with enforcement authority in the U.S. In the EU, by contrast, this element of independent re-testing is largely absent from the regulations, and the involved regulatory bodies are more restricted with respect to their enforcement authority.



Overview of the EU and U.S. vehicle emissions testing and enforcement schemes.

The study also identifies measures that could be introduced in the EU to improve the current vehicle emissions testing and compliance scheme. Specific recommendations include:

- Introducing the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) as well as regional specifications that go beyond the WLTP itself (such as an ambient test temperature of 14°C in the EU instead of the 23°C foreseen in the WLTP)
- Introducing a testing and target scheme regarding the efficiency of vehicle air conditioning systems
- Strengthening the road load determination procedure by ensuring that measurement results become publicly accessible and by introducing independent conformity testing for road load coefficients
- Establishing a European type-approval authority, acting as a neutral party between vehicle manufacturers and technical service companies and with the authority to demand the recall of a vehicle model or issue penalties if significant deviations were found as part of conformity testing, thereby ensuring a maximum level of independence and credibility
- Introducing a real-world adjustment factor for vehicle fuel consumption and CO₂ emission figures
- Putting a stronger focus on in-use conformity testing of series vehicles, complemented by on-road PEMS testing not only for air-pollutant emissions but also for fuel consumption and CO₂
- Further developing consumer websites, by providing an EU-wide platform for vehicle owners to report everyday experience regarding fuel consumption

The paper aims to extend the policy discussion over vehicle efficiency and emissions testing beyond measures that are already in the planning stages, and to sketch a more fundamental revision of the vehicle testing and enforcement scheme that will better align emissions test results, customer experiences, and environmental performance in the future.