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EUROPE

1. New Truck Diesel Scandal Twice the Size of 'VW Dieselgate'

Fears that a new diesel emissions scandal is already happening across much of Europe have resurfaced following a documentary on German television. The scandal is believed to involve around 20% of lorries operating from Eastern Europe, and is generating around 14,000 tons of additional nitrogen oxides, making it twice the size of the 'Dieselgate' scandal of 2015 that involved the German carmaker Volkswagen.

T&E first drew attention to the potential scandal in an article published in April 2016. The German trade body Camion Pro – which represents road transport operators, many of them small businesses – had uncovered a practice whereby truck engines could be manipulated so it looked as if a truck was using the NOx-reducing fluid 'AdBlue', even though it was not. Users of AdBlue qualify for certain tax and toll reductions.

At the time, Camion Pro's evidence was based largely on its own work, in which under-cover researchers pretended to be sales staff for the soft- and hardware that manipulates lorry engines. But now it has been backed up by research commissioned by the German television station ZDF and conducted at the University of Heidelberg. Its findings were broadcast on ZDF's magazine program Frontal 21 on 17 January.

The technology that masks the absence of the NOx reduction system is made up of small electronics components, which have become known in the haulage industry as 'AdBlue killers'. Although installation techniques are openly demonstrated on YouTube and other internet video sites, it appears few enforcers are aware of the scandal. The ZDF program showed a team carrying out a manipulation in Romania, with one member saying: 'You don't need to worry about Germany – the police there don't know about this.'

The Heidelberg research confirmed Camion Pro's initial estimate that 20% of lorries operating in eastern Europe have effectively circumvented NOx reduction technology, causing around 14,000 tons more NOx to be emitted per year than would be the case if all trucks that say they use AdBlue were doing so. In financial terms, ZDF quoted a toll expert as saying the scandal was costing Germany €110 million a year in lost revenue.

By turning off the system, users are claiming tax and toll reductions even though emissions are vastly higher than the levels that qualify for the financial incentives. The German car buyers' website autoankauf.de said: 'A number of German motorists haven't engaged with the VW scandal and may not engage with this one. Sadly, it's only the environment that suffers, and motorists seem largely unaffected by it all.'

The automotive lobby has urged EU policymakers to ban the devices. Lobby group ACEA argued that these devices should be banned and then controlled through road-side spot checks by police officers.

An ACEA spokesperson pointed to the EU's Euro 5 and 6 emissions standards for light-duty vehicles and their Euro VI counterpart for heavy-duty vehicles as one of the potential drivers behind these practices. The laws require carmakers to provide so-called independent operators – repairers but also manufacturers of "tools or spare parts" – unrestricted access to vehicle

features such as wiring diagrams. This electronic information may be inadvertently facilitating the design of devices used to cheat in emissions tests by third parties, the spokesperson added.

2. Luxembourg Launches Criminal Case Over VW Emissions Scandal - Minister

Luxembourg has launched criminal proceedings over the Volkswagen emissions scandal, alleging its type approval authority was cheated by car manufacturers. Following an investigation into the scandal, the country's infrastructure minister said it was lodging a complaint with prosecutors against unknown culprits.

In documents distributed to reporters, Luxembourg's infrastructure ministry described itself as "a victim of criminal action that led it to certify cars equipped with the EA 189 engine made by Volkswagen's Audi division which it would not have done had the tests not been cheated."

The engine, which was tested and certified by Luxembourg authorities, was used in most of the cars that VW has admitted in the United States included illegal "defeat device" software that could conceal the true level of toxic emissions in tests.

Luxembourg is among seven nations under scrutiny by Brussels regulators for failing to impose the kind of penalties Volkswagen has faced in the United States over its use of illegal "defeat device" software to mask toxic diesel emissions.

In Europe, officials in some countries say it has been difficult to ascertain whether VW has done anything wrong because of a loophole in EU law which allow carmakers to dial down emissions control systems under some circumstances, such as if they might damage a vehicle's engine.

Nonetheless, several countries continue to investigate the matter and other interest groups are also taking legal action.

3. Dirty Urban Air One Focus of Broad EU Environmental Review

European Union countries are struggling to meet the standards they agreed to when adopting EU directives according to the first EU environmental implementation review, published by the European Commission February 6. In particular, countries are failing to comply with air quality standards in urban areas according to the review.

The environmental implementation review, carried out by the EU commission involves the analysis of environmental data submitted by EU countries as part of their implementation of EU environmental law. The commission said that objective was to identify "the causes of implementation gaps and find solutions before problems become urgent."

The commission said in May 2016 that it would carry out the environmental implementation review as a biennial exercise, with the intention that it would serve as a basis for discussions between national authorities on how challenging environmental compliance shortcomings could be tackled.

The commission said it hoped the process would reduce the need for environmental infringement proceedings at the EU Court of Justice, which ultimately can fine EU countries that fail to respect the bloc's laws.

Because of ineffective implementation, city air quality thresholds continue to be breached in 23 of 28 EU countries, the commission said.

The commission said that common problems were often behind the poor implementation of environmental rules, including “ineffective coordination between administrative levels, insufficient capacity, and a lack of knowledge and data.”

The commission official added that environmental data from EU countries should improve over the next few years, in particular as more satellite data becomes available, enabling better assessments of the compliance of EU countries with EU environmental standards.

In addition, the commission has said it will publish during spring 2017 the results of a currently ongoing review of environmental reporting obligations.

4. Electric Vehicles in U.K. Reach New High for Monthly Market Share

Cars powered by electricity and other low-emission fuels grabbed record U.K. market share in January, according to industry figures. Vehicles running on alternative fuels grew almost a fifth, to 4.2 percent, compared to 3.6 percent during the same period last year, according to a statement from the Society of Motor Manufacturers and Traders reporting January vehicle-registration data. It was the first time vehicles run on alternative fuels topped 4 percent market share in the U.K. for a given month, the statement said.

In contrast, registrations of diesel-fueled vehicles fell 4.3 percent compared to January 2016. Registered gasoline-powered vehicles increased 8.9 percent. Overall registrations of new vehicles grew 2.9 percent to 174,564.

5. France to Subsidize E-Bikes

The French government will support electric bicycle purchases with up to €200 in incentives as part of a roll-out of clean transportation subsidies this year. The incentive will be open to two-, three- and four-wheeled electric bicycles purchased before 31 January 2018 with an engine power below 3 kilowatts, the French environment ministry said on Saturday.

The subsidy, laid down in a decree on 16 February, will cover 20% of the purchase price, up to a maximum of €200. Payments will exclude electric bicycles using lead batteries and those already subsidized under other public schemes.

According to the ministry, a new website will start processing applications for the bonus over the next few weeks. The scheme will be overseen by French payments agency ASP, which is also responsible for the €10,000 and €1,000 incentives approved last year for rechargeable hybrid light-duty vehicles and electric motorbikes in 2017, respectively.

The new clean transportation subsidies, which also include tax credits for the installation of charging points at homes, were announced as the European Commission issued France a final warning over air pollution.

Diesel-driven pollution episodes have raised concern in Paris over the past few months. In January, Mayor Anne Hidalgo announced the construction of new cycle lanes and car-free zones in the French capital as she pronounced 2017 the “year of the bike”.

Figures released by the European Cyclists Federation last year placed France as the 11th electric bicycle market in the continent in 2015, at around two units sold per 1,000 inhabitants. A lack of

cycling infrastructure could set a “natural cap” on e-bike growth in the country in the future, it warned.

6. Heathrow’s Third Runway Receives Conflicting Reports

Transport Minister Chris Grayling proudly announced “we will meet our legal requirements on air quality” and fossil fuel emissions despite the airport expansion. However, as he spoke, the Department for Transport released an analysis by consultants WSP Parsons Brinckerhoff. And it said: “There is a risk that the [extra runway] options will delay or worsen compliance with limit values.

“This risk is lowest for Gatwick 2R [Second Runway] and highest for the Heathrow options, in particular Heathrow ENR [extended northern runway] without the updated surface access strategy in place. “Furthermore, the risk increases the earlier the option is assumed to come into operation.”

However the consultants added the extra runway would eventually come into line with European Union air quality regulations, saying it would “not affect compliance” in 2030.

The Government’s policy document on Heathrow expansion stated that Ministers believed “the Heathrow Northwest Runway scheme would be capable of being delivered without impacting the UK’s compliance with air quality limit values”.

John Sauven, executive director of Greenpeace UK, which first spotted the contrasting assessments, said: “Now we have it straight from the horse’s mouth. “The Government-commissioned assessment shows a third runway risks delaying action to bring air pollution down to legal levels for years.

“And even after 2030, ministers’ hopes of complying with air quality laws are based on drivers using less polluting cars. “But with an air pollution crisis already linked to over 9,000 premature deaths a year in London alone, people’s health cannot be dependent on rose-tinted assumptions and a notoriously unreliable car industry.

“It’s time for ministers to come clean. They don’t have a solution to the extra emissions from a third runway that will cause more air pollution and climate change. Going ahead with this project would be reckless and unlawful.”

The news comes as school governors in London have suggested that pupils should wear pollution masks while travelling to and from school. ClientEarth’s chief executive James Thornton said: “If we have got to the point where parents are reaching for masks to protect their children’s lungs as they walk to school, it’s clear that the Government has done much too little to tackle illegal air pollution or reassure parents that they are protecting our health. “While using masks is a proactive step by parents to safeguard children’s health, pollution must be tackled at source.

“There are just weeks to go before the Government reveals its new plans to clean up the UK’s toxic air.

“They must protect children across the country with bold measures to tackle air pollution. We need to see a comprehensive network of Clean Air Zones, targeted scrappage schemes for the dirtiest diesel vehicles and, in the short term, measures to combat pollution spikes.”

ClientEarth recently warned the Government that it could take Ministers to court again, but this time over its failure to produce a plan to cut the UK's fossil fuel emissions.

A Department for Transport spokesperson said: "The Government believes that the Heathrow Northwest Runway scheme can be delivered without impacting on the UK's compliance with air quality limit values, with a suitable package of policy and supporting measures."

7. Officials 'Drawing Up Plans' For Diesel Scrappage Scheme to Cut Emissions

A scrappage scheme for diesel cars could be introduced within months as part of a plan to lower emissions and improve air quality across the country, according to press reports. Work is underway by officials in the Department for Transport and Defra on a scheme to offer cashback or a discount on low-emission cars if people trade in their old polluting vehicles. A government source confirmed to the press that talks had taken place with the Treasury, which would finance the plan, and officials were developing a scheme that could focus on geographical areas around the country where pollution is worst.

Chris Grayling, the Transport Secretary, reportedly told industry experts that he supports plans for a scrappage scheme during a private meeting, but that it must be properly targeted. It came as Mr. Grayling said high pollution levels were something ministers "have to deal with now".

He told the House of Commons: "We have to find the right way to migrate the nature of the cars on our roads and the vehicles on our roads to a point where they cause much less of a pollution problem than they do at the moment."

The oldest and most polluting diesel vehicles in areas where emissions levels are particularly high are likely to be the target.

It follows a dramatic warning earlier this month after a number of London boroughs recorded toxic air quality levels forcing the city's Mayor to call on people to stay indoors and put off exercise until the levels improved. It also came as Westminster council introduced a 50 per cent surcharge on parking for diesel cars in a bid to drive them out of the borough.

Mr. Grayling told the BBC: "The irony is that a decade ago, because of concerns about carbon emissions there was a drive towards diesel... that we now know has a different set of negative effects and the department for the environment is currently preparing, and will launch shortly, our strategy to take tackling the diesel problem to the next level.

"There is no question that in the future we are going to have to move to lower-emission vehicles. We need to do it soon... I would like to see a migration of people away from current technologies to lower-emission technologies. We are providing incentives to do that now and we will be doing more in the months ahead."

Patrick McLoughlin, the former transport secretary, suggested last year that the Treasury should rethink schemes that encourage people to buy diesel cars or increase taxes in order to deal with the problem. Reportedly George Osborne, the former chancellor, was opposed to a diesel scrappage scheme but that Philip Hammond is more open to the idea if it can be proven to work.

MPs on the transport committee have also been in discussion with the Department for Transport about the viability of such a scheme. One MP said: "The department is looking at this in a serious

way but it simply won't go far enough to tackle the real problem of heavily polluting HGVs, farm vehicles and ships."

But campaigners and the car industry support the idea, which mirrors a scheme developed by the French government to remove old diesel vehicles from the roads because of the high levels of pollution they emit.

8. UK Brexit Paper Fails To Address Environmental Fears

The UK government has confirmed its commitment to being a leader on climate change action after EU withdrawal but given little reassurance on wider environmental protection. Its long-awaited Brexit white paper says little about green matters, beyond affirming the government's commitment to "ensuring we become the first generation to leave the environment in a better state than we found it".

It was published a day after the parliament's lower house, the House of Commons, overwhelmingly voted a bill authorizing Brexit through its second reading.

The 77-page document repeats previous statements that the forthcoming 'Great Repeal Bill' will be used to bring the current framework of environmental regulation into UK and devolved law, but says nothing about the third of rules that are expected to be too 'tricky' to translate.

Instead the paper states: "We want to take this opportunity to develop over time a comprehensive approach to improving our environment in a way that is fit for our specific needs." This is a reference to the forthcoming 25-year environment plan, which the government is under growing pressure to set formally in law.

The paper adds that the UK's climate action will "continue to be underpinned" by national climate targets as set out in the Climate Change Act 2008 and five-yearly carbon budgets.

9. Brussels Continues ETS Derogation For Non-EU Flights

The EU executive announced plans to revise the ETS to continue covering only flights between airports in the European Economic Area (EEA). The proposal follows an agreement in the International Civil Aviation Organization (ICAO) last October to set up a global offsetting scheme for aviation emissions on a voluntary basis from 2021.

If the proposal is approved by the European Parliament and the Council, international flights to and from the EU will continue to escape buying ETS allowances to cover their CO2 emissions indefinitely. The current derogation for the period 2013-2016 was originally agreed in 2013, pending a global agreement to address the sector's emissions, to appease countries such as China and the US.

"Now, we call on countries around the world to participate in the global scheme from the beginning and help us finalize and implement sound environmental criteria to deliver real emissions reductions in the aviation sector," said EU climate commissioner Miguel Arias Cañete.

The Commission said it plans to present a further assessment of the ETS and proposals to make the global scheme operational once there is more clarity on its implementation. The detailed rules are being prepared this year with a view to endorsement within ICAO in 2018.

Peter Liese, a German member of the European Parliament's largest political group, the center-right European People's Party, said, "There are a lot of problems with this CORSIA," including whether or not offsets generate real emissions reductions. "Some colleagues say this is just a fake," Liese said.

"Intelligent compromise" would be to "continue to exempt intercontinental flights until 2021, but then reinstate them if the ICAO rules are not clear," Liese added. From 2021, "we should also include flights to countries which, like Russia, refuse to join the ICAO agreement," Liese said.

"If third countries just do nothing, why shouldn't we introduce our scheme, which has been proved legally right?" he added. The EU Court of Justice in 2011 ruled in a case brought by a number of U.S. airlines that intercontinental flights of non-EU operators could be brought into the ETS.

The commission proposal was "a good basis for deliberations in the Parliament, but we will examine it very closely and, in particular, continue to exert pressure for ambitious climate protection measures in intercontinental flights," Liese said.

Intra-EU aviation is subject to an emissions cap through 2020 that is about 5 percent below the sector's 2004–2006 average annual emissions. The commission's regulation also would clarify that this cap would reduce by 2.2 percent per year from 2021, in line with the annual reduction required of power stations and heavy industry under the ETS.

10. Spain Strengthens National Air Pollution Monitoring

Spain will develop a standardized National Air Quality Index and make real-time air quality data available to the citizenry and to European Commission bodies, under a royal decree that took effect January 29 to modify existing air quality regulations.

The new rules will adopt EU air quality standards by modifying criteria such as the methodology for measuring pollution and the placement of measuring points, as well as updating data quality objectives so as to reflect seasonal conditions and human impact.

Spain's 17 autonomous communities, with their diverse standards and information streams, will see unified national criteria and coordination on the creation of a European-standard national index, which the government said will help guarantee adequate air quality evaluation.

11. EU Official Blasts 'Delay After Delay' in Auto Emissions Scandal

The top official for the European Union's single market strongly criticized automakers and EU countries for their handling of the diesel car emissions scandal. EU internal market commissioner Elzbieta Bienkowska said February 9 she faced "denials of the facts" when she pushed automakers for information on discrepancies between the emissions performance of their cars in tests compared to emissions in daily use.

EU countries "fail to enforce the law," and some countries "still refuse to disclose to us all technical information" relating to their national investigations into emissions cheating by automakers, Bienkowska told a meeting of a European Parliament inquiry committee set up to investigate failings in the surveillance of cars for conformity with EU air pollutant emissions limits.

EU country authorities and automakers are "still playing with time; there is delay after delay after delay," in responding to European Commission queries on car emissions, she said.

12. MEPs Call For Stronger EU Car Surveillance

The European Parliament's internal market committee (IMCO) has voted in favor of allowing the Commission to arrange independent audits of national watchdogs and to re-test vehicles where it suspects rules are not being enforced. Such market surveillance powers would exceed those included in the Commission's proposal for a reform of the EU Regulation on vehicle type-approval from January 2016.

Drafted by MEP Daniel Dalton (ECR), the Parliament's position adopted by MEPs also includes a provision that would force member states to re-test annually a minimum of 20% of the vehicles placed on their markets during the year before.

MEPs further demanded that EU countries notify the Commission of any irregularities "without delay" and provide information on test results and control activities through national programs and a new EU-wide online database

However, the proposal to set up an EU car-approval agency, supported by environment MEPs and the French government, was rejected by IMCO. It has been reported that groups supportive of the EU watchdog, including S&D and the Greens, will seek to reintroduce the provision when the full plenary votes to approve the final position in April.

Countries in the EU Council will discuss the type-approval reform at a meeting on 20 February with the aim to reach a common position before the end of the 6-month Maltese Council presidency. In parallel, the Commission will discuss the fourth package of the new on-road emissions test, known as RDE, with member states, industry and NGOs in early March.

13. Vehicle Type-Approval Watchdog Divides Countries

Germany, Italy and Sweden have all rejected the need for an independent watchdog on vehicle type-approval to avoid a future emissions scandal, a leaked document indicates.

An unpublished survey carried out by the EU Council shows member states disagreeing over how much control over type-approval should be ceded to an EU-wide authority, be it the European Commission or a new agency. The document which dates from November, offers a glimpse into national views on the changes the Commission proposed last year to the EU type-approval regulation. Sweden claims that harmonization of market surveillance can be achieved without the Commission having to re-test already approved vehicles, as the EU executive proposed. Instead, it suggests that member states use the proposed forum for exchanging information to discuss non-compliance cases and the interpretation of EU rules by testing authorities.

By contrast, both France and Spain support creating an EU type-approval watchdog, a proposal defended last year by the French government and by MEPs in the environment committee.

The Netherlands believes the Commission should be allowed to re-test cars – but only when there is a "clear reason" – when both the forum and discussions between national authorities have failed to solve disputes.

Last week, the Parliament's internal market committee voted in favor of requiring member states to re-test a minimum of 20% of vehicles per year. (See above.) However, the Netherlands believes market surveillance should not be based on quantitative targets, and the UK "is not persuaded"

that a minimum is needed. Germany supports setting a target based on the number of type-approvals granted by a member state.

The survey also sought views on how technical services responsible for emissions tests can stay independent to avoid a repeat of the Volkswagen scandal. France, the UK and the Netherlands all support peer reviewing these technical services, with France also suggesting that the Commission should have the power to withdraw a license from “failing” operators.

Meanwhile, Sweden does not believe peer reviews are necessary for technical services as, it claims, it has “no indication” that its current accreditation requirements have hindered independence. Italy, whose own probe into car emissions has faced accusations of bias, says the independence of its technical services is guaranteed by the fact that they belong to its transport ministry.

14. French Investigators Refer Fiat Chrysler Emissions Case to Prosecutor

French investigators have referred carmaker Fiat Chrysler Automobiles (FCA) for possible prosecution over abnormal emissions of nitrogen oxide (NOx) pollutants from some of its diesel engines, the government has announced. The investigation, launched in the wake of the Volkswagen emissions test-cheating scandal, revealed emissions from Fiat Chrysler models that were several times higher than regulatory limits.

A file on Fiat Chrysler has been passed to prosecutors, a statement from the finance and industry ministry said, while investigations into other car brands continue. The referral makes FCA the third manufacturer to be referred to French prosecutors, after Germany’s Volkswagen and France’s Renault.

The referral follows a testing program carried out by French regulators last year for a number of different carmakers. According to findings published last July, FCA’s Jeep Cherokee model emitted eight times the NOx limit on a slightly modified regulatory lab test. Its Fiat 500x model emitted almost 17 times the limit in road testing, the report said.

FCA has already come into the spotlight after the U.S. Environmental Protection Agency’s (EPA) last month accused the American-Italian carmaker of using hidden software to allow excessive diesel emissions to go undetected, leaving it facing a maximum fine of about \$4.6 billion. FCA Chief Executive Sergio Marchionne angrily rejected the U.S. allegations, saying there was no wrongdoing and FCA never sought to create software to cheat emissions rules. He also stressed FCA’s situation cannot be compared with VW’s.

Tensions have also arisen between Rome and Berlin after Germany raised concerns over FCA’s Fiat 500X, Fiat Doblo and Jeep Renegade models, alleging that they were equipped with illegal cheating software. FCA rejects the allegations.

15. Italian Dieselgate Probe Accused of Bias

Leaked government documents have hinted that Fiat-Chrysler cars received favorable treatment in Italy’s emissions inquiry, prompting NGO calls for tighter enforcement of EU law. The investigation launched by Italy after the Volkswagen scandal allowed the testing of seven Fiat-Chrysler models to take place in the carmaker’s own facilities, according to a report from the country’s transport ministry. The document, which was shared with MEPs last October, was leaked this week.

According to the report, models from all other brands included in the investigation were tested by public transport research institute IM-CNR. It targeted a total of 25 diesel cars approved under the Euro 5 emission standards.

In addition, the report showed that laboratory tests were performed on all seven Fiat-Chrysler cars at the Turin site, but on-road tests, carried out with portable devices, excluded three models.

All cars included in the probe emitted an average of 325mg/km of NOx when engines were re-started after a short pause, a procedure known as 'hot start', and 120mg/km when the delay was longer ('cold start'). The EU limit for NOx in Euro 5 cars is 180mg/km.

The report said that the gap between hot and cold start emissions was "probably" due to engines having been calibrated differently across each scenario. Asked about the issue by the European Parliament's inquiry committee, Italian transport minister Graziano Delrio argued in January that current EU legislation is not clear on whether these "emission control strategies" are illegal or not.

Delrio also described emission tests at manufacturers' sites as a "common and widespread practice" given that technical services sometimes lack the equipment needed to perform them.

However, campaigners from T&E said the report showed the Italian tests were "unfairly biased" and called for ramped-up controls over how countries enforce car approval rules, possibly through an EU-wide independent watchdog.

16. VW Mulls Action Against Piech Over Diesel Claims Against Board

Volkswagen said it was weighing steps against ex-Chairman Ferdinand Piech following reports that Piech accused supervisory board members of inaction after learning of VW's diesel emissions cheating in the U.S. "The supervisory board of Volkswagen AG emphatically repudiates the assertions made by Ferdinand Piech as reported recently in the media," VW's supervisory board said in a statement.

"The board of management will carefully weigh the possibility of measures and claims against Mr. Piech," it said, adding that VW would not comment on ongoing investigations as a matter of principle.

Bild am Sonntag said Piech had raised the issue with then-CEO Martin Winterkorn and members of the supervisory board steering committee in March 2015, six months before the scandal became public, after getting a tip-off from an Israeli security firm. Winterkorn had assured him that everything was under control, Bild am Sonntag and magazine Der Spiegel reported.

Volkswagen admitted in September 2015 to having installed software to cheat the tests, causing a collapse in its share price, Winterkorn's resignation and tens of billions of euros in fines and legal costs.

Piech had said the previous April he was "distancing himself" from Winterkorn, without elaborating, sparking a showdown that saw senior VW figures rallying around Winterkorn and forcing family patriarch Piech to step down.

17. Lawyers Warn EU High-Sulfur Fuel Exports Are Illegal

The Netherlands and Belgium should end high-sulfur fuel exports to African countries as these breach international treaties and human rights conventions, environmental lawyers have said. The Center for International Environmental Law (CIEL) warned both countries on Monday that their exports to Africa of petrol and diesel that cannot be sold under EU law violates both the UN convention on hazardous waste (Basel) and its African counterpart (Bamako).

CIEL's analysis was commissioned by NGOs Friends of the Earth and Public Eye. The latter warned in a report last September that EU ports including Amsterdam and Antwerp are being used to ship to Africa petrol and diesel containing over 400 times the maximum 10 parts per million (ppm) of sulfur allowed from 2009 onwards under an EU directive.

CIEL noted that as parties to the Basel Convention, the Netherlands and Belgium cannot export waste which has been forbidden by other parties unilaterally or through an international agreement. It argued that this is the case with the Bamako Convention, which was adopted by African states in 1991 following claims that Basel had failed to tackle hazardous waste trade.

The Bamako Convention, which has since been ratified by 25 countries including Senegal and Cameroon, forbids imports of hazardous substances, not just waste, which have been banned by the country of origin. Fuels exceeding EU sulfur limits are prohibited in the bloc and cannot be legally shipped to Bamako countries, CIEL argued.

According to the lawyers, the Netherlands and Belgium are maintaining exports of high-sulfur fuels to Africa despite being aware of the "serious harm" they can cause to the environment and human health. This violates the right to health set out under the 1966 UN Covenant on Economic, Social and Cultural Rights, they argued.

African countries are in the process of tightening their rules on the import of fuels. In December last year, Nigeria, Benin, Togo, Ghana and Ivory Coast agreed a common sulfur limit of 50 ppm for imported fuels.

18. Audi and VW SUVs Come Out Best in Real-World Emissions Test

Good news at last for the German car giant – according to the latest results of real-world emissions testing by independent testers EQUA, it's the Volkswagen Group cars that are now doing the best on nitrogen oxide emissions (NOx). Specifically, it's the Audi Q2, Porsche Panamera and VW Tiguan which have come in for the highest praise from EQUA. According to its latest tests, the Q2 and Tiguan fitted with the 2.0-litre TDI diesel engine and four-wheel drive, and the Porsche Panamera 4.0-litre V8 diesel 4wd fall into the best A-grade for emissions. That means that in on-road testing, all three cars managed to meet the Euro6 emissions regulations limits which stipulate no more than 0.08g/km of nitrogen oxide (NOx).

Somewhat surprisingly, EQUA's testing seemed to show that the all-wheel drive variants were better than their two-wheel drive brethren. Of the cars tested, 48 per cent of the four-wheel drive models got an A, B or C rating (which means that they emit no more than 0.18g/km of NOx, equivalent to Euro5 emissions regulations) while only 28 per cent of two-wheel drive models tested managed to be in the same brackets.

Of those 4x4 models, 14 per cent were good enough to meet their Euro6 emissions limits in on-road driving, compared to just 10 per cent of the two-wheel drive models. Those are both disappointingly low scores in general, but they are counter-intuitive. Generally, the extra weight

and extra friction of a four-wheel drive system drives up fuel consumption, and therefore emissions.

Nick Molden, chief executive and founder of Emissions Analytics which conducts the EQUA tests, said: “These latest results are very encouraging, and show that it really is possible for large, four-wheel-drive vehicles to top the tables for low emissions. Cars, like the latest Porsche Panamera, are now among the best – which is a huge achievement when you consider that the comparable model or the previous generation Panamera was rated under the lowest grade. This underlines that, with the proper development work, all cars can cut harmful NOx emissions.”

It’s not all good news on the emissions front, however. According to environmental pressure group Transport and Environment (T&E), cars have not become more economical in the past four years in spite of extra technology and cuts in vehicle weight. T&E’s latest figures show that the gap between real-world and claimed fuel consumption is a massive 42 per cent on average, which the organization claims means the average driver spends €550 more on fuel per year than they should. That gap has grown from 28 per cent in 2012 and just 14 per cent in 2007.

Greg Archer, clean vehicles director of T&E, said: “There has been no improvement in the average efficiency of new cars for four years because carmakers manipulate tests to achieve their CO2 targets instead of designing the car to be efficient on the road.” Drivers, T&E claims, are being forced to buy more fuel, governments’ tax-take is lower and climate targets are undermined. “More than a year after “dieselgate” broke, we urge regulators in Berlin and the European Commission to get to the bottom of this “autogate”.”

While German brands performed well in the EQUA tests, according to T&E they are the worst when it comes to overstating fuel economy. The figures show that Mercedes is the worst offender, with a gap of 56 per cent between its real-world and claimed figures for the C-Class and E-Class, while Audi lies in second place with a figure of 49 per cent. Toyota, Peugeot and Volkswagen are all called out for having average figures that are more than 40 per cent worse on the road, while only Fiat comes in for some back-handed praise, with a figure of 35 per cent.

Independently financed and implemented the EQUA Index is designed to help end the confusion that many consumers face when trying to understand the complex subject of fuel economy and tailpipe emissions, with ratings openly published and freely available to all.

The EQUA Index is totally independent of car manufacturers, trade associations and government. EQUA is a scientific undertaking, providing highly accurate information, obtained through standardized and repeatable testing conducted on real roads.

Reporting on four main areas, The EQUA Index covers fuel consumption, carbon dioxide, carbon monoxide and nitrogen oxides with easy to understand ratings available for over 60,000 vehicles. This free and powerful service provides a complementary suite of information covering the most important aspects of vehicle emissions.

The EQUA Index delivers drastically more realistic figures than the new official fuel economy test, the World harmonized Light vehicle Test Procedure (WLTP), set for introduction in 2017, which will still rely on laboratory-based testing.

19. EU Paves Way for Global Phase-Down of Climate-Warming HFCs

The Commission has adopted a proposal for the EU to ratify the amendment to the Montreal Protocol on a global phase-down of hydrofluorocarbons (HFCs), tackling the rapid growth of emissions of these potent greenhouse gases. The proposal follows the agreement reached last October in Kigali, Rwanda, where the 197 Parties to the Montreal Protocol agreed to gradually limit their production and use of HFCs. In developed countries, first reductions are due in 2019. Most developing countries will freeze the level of HFC quantities in 2024, and a few countries will follow in 2028.

For the Kigali Amendment to enter into force by 2019, at least 20 Parties need to ratify it. Ratification by the EU countries alone could thus trigger the entry into force because the 28 EU countries count as separate parties to the amendment.

The implementation of the legally binding Kigali Amendment will make a significant contribution to the Paris Agreement objective of keeping global temperature rise well below 2°C. HFCs are manmade substances used mainly in refrigeration and air-conditioning equipment. They have a global warming effect up to 15,000 times greater than carbon dioxide. Their use is the fastest growing source of greenhouse gas emissions.

20. Norway Spearheads Europe's Electric Vehicle Surge

Oslo, Norway's capital, like most of the Scandinavian country's cities and towns, boasts bus-lane access for electric vehicles (EVs), recharging stations aplenty, privileged parking, and toll-free travel for electric cars. The initiative began in the 1990s as an effort to cut pollution, congestion, and noise in urban centers; now its primary rationale is combating climate change. Today, Norway has the highest per capita number of all-electric [battery only] cars in the world: more than 100,000 in a country of 5.2 million people. Last year, EVs constituted nearly 40% of the nation's newly registered passenger cars.

Recently, Norway opened the world's largest fast-charging station, which can charge up to 28 vehicles in about half an hour. The country, joined by Europe's No 2 in electromobility, the Netherlands, intends to phase out all fossil fuel-powered automobiles by 2025.

Norway is the clear electric vehicle pacesetter in Europe, which now has about 500,000 electric vehicles. China leads the world in EV usage, with about 600,000 all-electric vehicles on its roads and an ambitious plan to deploy 5m EVs by 2020. The US ranks third globally, with fewer than 500,000 EVs. But electric vehicle momentum is picking up in the US, as evidenced by the 400,000 people who have paid \$1,000 to be on the waiting list for Tesla's \$35,000 Model 3 car.

The achievements of the Norwegians and the Dutch are just one reason that many experts see 2017 as a crucial breakout year for electric mobility in Europe and beyond. Experts acknowledge that in the past the numbers have never quite lived up to the hype around EVs or other alternative transportation technologies. Indeed, in 2016 only 2m electric and hybrid passenger cars were on the road worldwide – about 0.2% of the global fleet; in Europe, significantly less than 1% of new car registrations are battery-electric vehicles (as opposed to hybrid cars). And key questions still loom, such as whether there will be sufficient renewable energy supplies to power vast new fleets of EVs.

Nevertheless, because of rapid technological advances and strong government support for EVs in Europe and China, experts maintain that a new era in electromobility is dawning – and that this time there's more to the prediction than industry optimism.

Norway illustrates that with incentives that eliminate the price advantage of conventional gas-burning vehicles, many people will go for the electric option. And since 98 % of Norway's electricity comes from hydropower, the country's burgeoning EV fleet leaves almost no carbon footprint.

Thanks to its lucrative offshore oil and natural gas business, Norway can afford to promote e-mobility with generous incentives, including the considerable bonus of exemption from a 25% sales tax. Norway's access to abundant and cheap zero-emission hydroelectric power means it can even offer e-car owners free power charging at public charging stations.

Elsewhere in Europe, the main driver for EV growth isn't subsidies but legislation. By 2021, the average emissions of all new cars sold must be 40% less than what the average car on the road emits today – an extremely ambitious goal that can only be met by the rapid, large-scale adoption of electric vehicles.

Fine particulate pollution is also an issue in European cities.

In Europe, transportation is responsible for a quarter of all greenhouse gas emissions. And while Europe's industrial emissions have fallen by 38% since 1990, those in the transportation sector – including aviation – have increased by 9%.

The 2015 Paris climate accord and follow-up agreements stipulate that every signatory country propose national goals for climate protection, including – explicitly for the first time – for the transportation sector. Moreover, the International Energy Agency (IEA) forecasts that greenhouse gas emissions from transportation will “increase by 120% from 2000 to 2050 as a result of a projected three-fold increase” in the number of cars worldwide. Some industry and advocacy groups have set a global deployment target of 100m electric cars and 400m electric motorcycles and scooters by 2030.

The upbeat assessments about e-mobility's future are grounded in recent developments, including rapid advances in EV technology and China's new-found commitment to decarbonization. Moreover, 2016 saw a surge in EV sales globally — 30% more than in 2015 — and an expansion of charging infrastructure, both trends that will carry into 2017 and probably beyond. Europe's most popular EVs were three all-electric plug-ins — the BMW i3, Renault Zoe, and Nissan Leaf, as well as Mitsubishi's plug-in hybrid, Outlander.

Falling prices for EVs and recent technological developments have changed the game. For one, the cost of lithium-ion batteries, which account for about 40% of an EV or hybrid vehicle's cost, has fallen by two-thirds since 2010 — much faster than experts had anticipated and with further steep reductions expected in the near future. Six years ago, the average EV battery sold for more than \$1,000 per kilowatt-hour; now it goes for less than \$350. It could drop to as low as \$125 in the near future, industry experts say.

What's more, as battery technology develops — in particular the improving “energy density” of lithium-ion batteries, enabling them to store more power with less weight — the range of EVs is rising dramatically from the under 100-miles-per-charge of the first generation of e-cars. The BMW i3 lasts for 114 miles without a recharge, and the newest Renault Zoe claims to push the 200-mile mark. Yet none of the competitors matches Tesla's leading models with ranges of more than 215 miles. The battery's steady efficiency evolution, which is expected to continue at about 5% a year, implies that the plug-in all-electric is no longer just a second car for city errands.

This drop in battery price is reflected in the lower price tags on the newest models. The latest Chevy Bolt sells for around \$37,500, and the price tag of the BMWi3 is about \$38,500.

A second generation of EVs is in production now and they are considerably lighter, longer-range automobiles than those launched five years ago. With the shock of Tesla's unexpected advances, European car manufacturers have invested heavily in the forthcoming EVs, convinced that they either do so or lose out in the long run. European car makers have also lobbied forcefully for governments to provide bigger rebates and tax incentives in different forms to stimulate the domestic markets.

However, even a range exceeding 200 miles doesn't alleviate the necessity for periodically recharging. The frequency of – and distance between– charging facilities has long been, and remains, one of the key sticking points that make potential buyers hesitate. Charging infrastructure in Europe has grown since 2013 at a rate of 30% to 60% a year. The continent now has more than 100,000 charging spots, all but a few thousand of them “slow chargers”, which take as long as eight hours to juice up a battery.

Significantly reducing charging times is essential to the widespread adoption of EVs, and Europe has recently added 1,300 DC “fast chargers” to the network, namely stations that repower EVs in little more time that it takes to fill up with gas. But, unless you're in Scandinavia, it's still difficult to travel long distances in Europe with an all-electric plug-in vehicle.

The EU appears newly determined to get behind the push for more charging points by stipulating that as of 2019, every newly built or refurbished house from Cyprus to Lapland will have to have an EV charging station. By 2023, 10% of all buildings' parking spaces must have EV chargers. Europe's automakers now recognize their own interest in finally outfitting the continent with the chargers that their electric fleets require. As a group, BMW, Daimler, Ford, and Volkswagen intend to install thousands of EV fast chargers along European autobahns.

Finally, China's sudden and muscular emergence in the world of electromobility has internationalized momentum for EVs. No country sold more EVs than China in 2015 – 34% of global plug-in sales. Carmakers in the US and Europe consider China as their most important market for manufacturing and sales. General Motors, for example, last year found buyers in China for 35% of its global production of electric vehicles through GM China and its joint ventures with Chinese companies. This, apparently, is just a taste of what the industry believes will come.

21. Diesel Drivers Face 50% Price Hike to Park in Central London

Diesel drivers will be charged an extra 50% to park in a central London area in a bid to cut the air pollution which has blighted the capital. Westminster City Council is to trial the price hike in parking bays in Hyde Park, Marylebone and Fitzrovia. Visitors in diesel cars will have to pay £7.35 per hour compared with the standard £4.90 from April 3. The council said the vehicles were among dirtiest on the roads and therefore hoped the "polluter pays" principle will reduce emissions by driving the cars out.

Air pollution from sources such as factories and cars is linked to the early deaths of around 40,000 people a year in the UK. It also causes problems such as heart and lung diseases and asthma.

A spokeswoman for Mayor Khan said the condition of air in London was "shameful". She said: "Westminster has some of the most polluted roads in London which is why the Mayor is set to

introduce a new 'toxic' charge for the dirtiest vehicles later this year on top of the congestion charge.

"He is also consulting on bringing forward and extending the Ultra-Low Emission Zone, and is cleaning up London's bus fleet.

"In addition, the Mayor is supporting London boroughs to tackle air quality, including through his £11 million Low Emission Neighborhoods program, which is helping polluted areas in Westminster like Marylebone High Street."

The Government must introduce a national diesel scrappage scheme to support drivers wishing to switch to cleaner alternatives, she added.

22. UK Motorists Shun Diesel Cars While Eco-Friendly Sales Rise

Motorists are shunning diesel cars, as they turn to buying vehicles that are much more eco-friendly, industry figures suggest. The Society of Motor Manufacturers and Traders (SMMT) said that 78,778 diesel cars were sold in January, a drop of 4.3% on the same month last year. Over the same period sales of electric cars and other alternatively-fueled vehicles (AFVs) jumped by 19.9%. The figures show that 7,270 AFVs - including hybrids - were sold in January, gaining a 4.2% market share.

Sales of diesel cars have been falling for several months, following publicity about pollution and health issues. And revelations that Volkswagen - and possible other manufacturers - used engine software to distort emissions data during tests have not helped diesel's reputation.

The growth in diesel sales lagged the wider market in 2016. That growth, of 0.6%, hid the fact that the move against diesel had accelerated throughout the year. Diesel car sales have fallen in 7 of the past 8 months, compared with the previous year.

The figures for January seem to confirm the trend. They show that while a year ago diesel sales were outnumbering those of petrol cars, by January 2017 that situation had reversed. And while the market share of diesel and petrol cars was neck and neck in 2015, in January diesel's market share fell to 45.1% compared to petrol's 50.7%.

Motorists who buy electric or hybrid petrol/electric cars still enjoy a grant from the government, worth up to 35% - or £4,500 - of the total value.

23. EU Ready to Lead on Climate if U.S. Backtracks: Official

The European Union is on track to meet its 2020 decarbonization goals and is ready to "assume global leadership" in case the U.S. under President Donald Trump backtracks on its emissions-reduction commitments, the EU's top energy official said recently. Maros Sefcovic, European Commission vice president for Energy Union, said it was "not easy to follow the pace of developments in the United States," but "based on the recent announcements we have heard, of course we are concerned" about the direction the Trump administration's climate policy might take.

"Some of the actions that have been announced" in the U.S., "might lead to the situation where Europe would have to assume—and we are ready for that—global leadership in the fight against climate change," he added.

The EU favors reducing carbon emissions not only for environmental reasons, but also because it “makes very strong business sense; we really can modernize the whole economy,” Sefcovic said. In addition, the EU has a “positively developing relationship with China” in areas such as emissions trading to cap and reduce greenhouse gas emissions, he said.

Sefcovic was speaking on the commission’s publication of a report to the European Parliament and EU member countries on progress toward the bloc’s decarbonization goals. According to the report, EU greenhouse gas emissions in 2015 were down 22 percent from 1990 compared to a legally binding target to reduce emissions by 20 percent by 2020. The EU also is on track to beat targets for 2020 for renewable sources to provide 20 percent of final energy consumption and for energy consumption to fall to levels that would represent a 20 percent energy efficiency gain.

According to Sefcovic, the EU would have to spend 387 billion euros (\$417 billion) a year after 2020 to meet additional goals by 2030 of a 40-percent reduction in greenhouse gas emissions compared to 1990, a 27 percent share for renewables in consumed energy, and a 27 percent energy efficiency saving.

He cautioned EU countries against spending on fossil fuel energy infrastructure that could become redundant. “We need to invest smartly” because “traditional” investment would lead to a “huge overcapacity,” he said.

NORTH AMERICA

24. Senate Confirms Scott Pruitt as E.P.A. Head

On Feb 17, 2017, the Senate confirmed Scott Pruitt to run the Environmental Protection Agency, putting a seasoned legal opponent of the agency at the helm of President Trump’s efforts to dismantle major regulations on climate change — and to cut the size and authority of the government’s environmental enforcer.

Mr. Pruitt, who has expressed skepticism about human-caused global warming, has been a key architect of the legal battle to overturn the rules.

Within days of Mr. Pruitt’s swearing-in, Mr. Trump is expected to sign one or more executive orders aimed at undoing Mr. Obama’s climate change policies.

Already, Mr. Pruitt has begun work to reshape the environmental agency. Among the candidates he has interviewed for top positions are several former senior staff members in the office of his fellow Oklahoma Republican, Senator James M. Inhofe, who has become known as Congress’s most prominent denier of the science of global warming.

25. US EPA Under Attack on Many Fronts

Facing unified Republican control of Congress and the White House, EPA and its supporters are bracing for the threat of significant attacks on its programs. These attacks are expected to come from and in fact are already coming from many directions. Some of these are highlighted below.

A. Reduce EPA Budget

I. Upcoming Budget Fights a Crucial Test

Attacks on EPA's budget could begin as soon as the looming expiration of the stop-gap measure that funds the government through the end of April -- this could set up the first of many battles over whether the agency will have adequate resources to address environmental problems, several observers say.

Myron Ebell, the former head of the Trump transition team at EPA, says he hopes that President Donald Trump fulfills his campaign promise to dramatically and permanently shrink EPA by revoking its climate change authority, significantly cutting its staff and budget, and shifting much of its work to states.

He notes that that Trump also campaigned on reducing federal spending by 2 percent a year while increasing defense spending and maintaining entitlements. That means Trump needs to show his intent in his first budget request to Congress, expected in coming months. Ebell has told the press that if President Trump is serious about cutting the government's budget and slashing the federal workforce, it will require cuts of \$800 million to \$1.2 billion from EPA's current \$8.1 billion budget, though states would likely receive an increase in their share (~ 4 billion) of EPA-funded grants.

And he says that cutting EPA's workforce may be made easier by the fact that the Obama administration moved many career staff from working on conventional Clean Air Act issues to working on climate and greenhouse gas (GHG) programs that the Trump administration has promised to abolish.

He says such budget cuts are justified because the agency has no affirmative regulatory agenda since "its work is largely done," after the problems that led to its creation in the 1970s -- dangerous urban smog and polluted waters -- have largely been resolved.

Such suggestions could gain significant support in the administration, where Scott Pruitt has also pledged to roll back many federal rules and return much of the agency's work to the states.

One approach could be proposed budget "riders" zeroing out specific agency programs. Alternatively an attempt could be to make a significant deep cut to EPA funding and leave it to the Administrator to decide where to make the cuts. Both are plausible scenarios when Congress takes up the next stopgap funding for the rest of fiscal year 2017.

II. FY17 or FY18 or Both?

Current signals are mixed on whether the biggest EPA budget fights -- whether over agency resources or policy riders that defund rules or programs -- will surface when lawmakers seek to extend agencies funding for the remainder of FY17 or wait until the FY18 budget cycle when the Trump administration presents its first full-year budget request.

There are some press reports indicating that the Trump administration is hearing advice that Republicans should defer bigger battles over spending cuts until FY18. Senator Roy Blunt (R-MO), a member of the appropriations committee, predicted February 7 in a remark to reporters that the biggest clashes over EPA funding will come in FY18, not the upcoming legislation for the rest of FY17. Alternatively, Sen. Ben Cardin (D-MD), a frequent defender of the agency in the Senate predicted fights over EPA spending at every stage of the process.

III. Even Small Budget Cuts Can Hurt Programs Significantly

Attention needs to be paid to the threat of even relatively small funding cuts in dollar terms that could decimate activities in other areas. For example, mobile source enforcement could be severely impaired by even small cuts. If a few million dollars that is now devoted to in use testing of vehicles were eliminated, EPA would be without the resources to catch future cheating of the type that occurred in the Volkswagen diesel emissions scandal.

The VW scandal erupted when outside groups first discovered vehicles were emitting on the order of 30 times more nitrogen oxides (NO_x) than allowed and prompted some congressional criticism of the agency for not catching the problem earlier. But the fact that EPA was not the first to catch the problem can at least in part be attributed to resource constraints even under the agency's current budget.

B. Attack on Regulations

I. Congressional Review Act

Proposed regulations generally undergo a lengthy review process that includes research, analyses and public input. But if a majority of lawmakers disagree with a rule — and the president signs off on their effort — the Congressional Review Act gives them a way to stop it in its tracks.

This law is intended to be an oversight tool for members of Congress, offering a check on federal agencies. Congress often delegates the power to carry out parts of laws to these agencies — giving them the authority to fill in the blanks. Under the Congressional Review Act, lawmakers have the ability to make sure that the agencies filling in the blanks are hewing closely to the spirit of the law. Though the time frame can vary, the law allows Congress at least 60 days to review a major rule before it goes into effect. During that period, lawmakers can object, and, if enough of them agree, eventually overturn it with the president's signature.

A majority in both chambers of Congress must pass a "joint resolution of disapproval," as the measure rolling back a rule is called. The measure cannot be filibustered as Republicans hold a majority in both chambers.

It has been successfully used to overturn a regulation only once. In 2001, with the signature of former President George W. Bush, Congress rejected a rule on ergonomic standards from the Clinton administration's Occupational Safety and Health Administration.

Congress has passed five other joint resolutions of disapproval since the law was enacted in 1996, all under former President Barack Obama. He vetoed each of them. President Trump is highly unlikely to veto congressional Republicans' efforts to roll back Obama-era regulations as he has said he will relieve what many in the business community denounce as an unmanageable regulatory burden. Environmental regulations in particular have come under fire for increasing the cost and complexity of doing business, and conservatives in Congress have been eager to undo many of them.

The U.S. Congress moved swiftly to undo Obama-era rules on the environment, corruption, labor and guns, with the Senate wiping from the books a rule aimed at reducing water pollution. By a vote of 54-45, the Senate approved a resolution already passed in the House of Representatives to kill the rule aimed at keeping pollutants out of streams in areas near mountaintop removal coal-mining sites.

The Senate then turned to a rule requiring mining and energy companies such as Exxon Mobil and Chevron to disclose taxes and other payments they make to governments at home and abroad.

The House also overturned Obama administration rules addressing pay discrimination at federal contractors and requiring expanded background checks for gun purchasers who receive Social Security benefits and have a history of mental illness.

Other recent environmental regulations issued within the last 60 legislative days that could be scrapped with a CRA resolution of disapproval include changes to the renewable fuel standard, formaldehyde emissions standards for composite wood products, a risk management program rule, revisions to an air quality model guideline, the Wisconsin infrastructure state implementation plan and a pesticide applicator rule.

EPA's final medium- and heavy-duty truck rule potentially could be targeted, but it is not considered a candidate for a CRA resolution, due to widespread support from truck and engine makers.

The House has already passed legislation that would eliminate a Bureau of Land Management (BLM) rule curbing the release of methane, a potent greenhouse gas, from oil and gas operations on federal land. The resolution, which needs Senate and presidential approval to take effect, uses the Congressional Review Act to reverse one of the final rules the Obama administration issued. While Trump administration officials have discussed whether to address methane regulation in the upcoming executive order, it may not be included in light of Congress's recent action.

But deregulatory advocates are reportedly urging lawmakers to go further. Free-market groups sent a January 31 letter urging lawmakers to make "additional efforts to use the CRA to bring as much permanent regulatory relief to the American people as possible." While they do not identify particular rules for rollback, the letter says Congress must roll back the "regulatory avalanche of the last eight years."

II. Regulatory Freeze

On January 26, the EPA issued a rule freezing, for at least 60 days, the implementation of 30 rules that had been issued late in the term of the outgoing Obama administration. The notice pivots off of a January 20 memorandum issued by the White House, instructing agencies to freeze new or pending regulations until the new administration has had a chance to review them. While many of the pending rules relate to authorizing delegated state programs, some are more broadly applicable and would have more immediate effects if further delayed, withdrawn, or struck down.

Each frozen rule is currently scheduled to take effect on March 21, but the administration is leaving room for further delayed implementation. The rules affected include standards governing radon emissions, formaldehyde emissions, air quality, pesticides, biofuels, solid waste landfill permitting, oil and hazardous substances pollution, and aircraft emissions.

III. Two-for-One on New Regulations

On Monday, January 30, President Trump signed an executive order requiring federal agencies (including the EPA) to eliminate two existing regulations for each new regulation it promulgated. The order further requires that the cost of any new regulation must be offset by eliminating

regulations imposing equivalent costs to businesses, presumably creating an additional layer of oversight for new and existing rules by the Office of Management and Budget (OMB). For now it is unclear how such a requirement would play out in practice. In particular, scrapping old regulations still requires compliance with the Administrative Procedure Act. In addition, many environmental statutes contain mandates to the EPA to promulgate regulations within specified time periods (many of which the EPA has already missed), presenting potential conflicts with such a broad executive order and delays that may result. At a minimum, it would appear that the implementation of this executive order will subject rulemakings to several rounds of litigation at multiple stages and, in all likelihood, slow their progress.

Trump's regulatory order says that, "Unless prohibited by law, whenever an executive department or agency (agency) publicly proposes for notice and comment or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed."

Attorneys for both industry and environmental groups reportedly agree that the "unless prohibited by law" clause will likely turn out to allow mandatory rulemakings to go forward unimpeded -- either because the White House will interpret it that way, or because courts will hold that an EO cannot set new hurdles for a legally required rule.

IV. Regulatory Budget

Along with the "one in, two out" mandate, Trump's EO also creates a "budget" that limits the total new compliance costs agencies can impose through regulation each year, with a 2017 limit of \$0. That means new EPA rules found to increase costs would have to be balanced by eliminating existing rules with equal or greater compliance burdens.

While congressional Republicans have long sought a mandate for EPA to eliminate existing regulations in order to enact new ones, and to require agencies to meet a regulatory budget that caps the costs of their mandates, implementing that proposal through an EO rather than statute means it, too, will arguably not apply to mandatory rules.

"[M]andates will cut through the zero regulatory budget level for 2017," a former OMB official told the press. However, similar to the mandate for cutting existing rules the budget could still delay EPA's regulatory process at least until the White House or courts issue clear guidance on how to proceed.

Nonetheless, the former OMB official says supporters of a regulatory budget are still welcoming its inclusion in the EO, and even raising the possibility that it "negates the need for a number of other regulatory reform measures" that Congress might pass.

But the GOP could also renew its push to enact a budget by legislation so Congress, rather than the White House, would set the annual budget, rather than allowing Trump "absolute control over the rate of promulgation of discretionary rules," the former official continues.

V. Vehicle Emissions Rules

Ford Motor Co Chief Executive Mark Fields said that when he and other auto industry CEOs met with Trump they told him that "various studies showed that up to 1 million jobs could be at risk if we're not given some level of flexibility on that to align with market realities." In a February 10th letter to the President, all the major auto manufacturers reiterated the potential jobs impact and highlighted the need for one national program with harmonized rules from NHTSA, EPA and

California. The industry does not want to get rid of the current corporate average fuel-economy standards and associated emission limits, Fields said. What it does want is "one national standard for fuel economy," which Fields called "really important."

The theme of unified national standards had been cited by auto executives even before Trump was inaugurated. That specifically means federal action to eliminate the 2009 EPA waiver that allows California alone to set its own emission standards, as it has been doing since before the EPA existed. Further, the law permits any U.S. state to abide by the federal standards or opt into the stricter California standards, but not to set its own emission rules.

New EPA Administrator Scott Pruitt has said he will review the Obama administration's decision to lock in the fuel efficiency rules.

One source familiar with debates on the vehicle GHG standards says that automakers appear to want "peace" on the issue -- despite their strident opposition to what they viewed as a hasty determination issued just a week before Trump's inauguration. This could be because such a revolt by the automakers could spur the Trump EPA to move to weaken the rules, which would in turn trigger a reaction by California to push ahead with its own rules under its Clean Air Act authority to do so.

"In a fact-based, rational world, the industry would look at how the table is set," the source says.

Others have suggested the sector's goal may be geared to shaving potential compliance costs, rather than mounting a full-scale attack on the rules and by extension California's program. They cite the fact that California Gov. Jerry Brown (D) has two more years in office and California just issued a plan to retain its current state standards. It is also plausible that California could start work on standards reaching to 2030, perhaps in March.

The question for industry would then become whether it wants to spend at least the next three years "starting over" with EPA on revised standards for model years 2022-2025 or instead negotiate a deal with California and EPA, as has occurred numerous times before.

Some argue that the Trump EPA has discretion to reverse the prior determination, as long as it articulates a reasonable basis for doing so under the air act. However, that action would have to push back against a "robust" record the agency developed in favor of retaining the rules.

That sentiment tracks with views aired by former EPA policy official Robert Sussman, who recently wrote in a blog post that a "rear guard battle" by the industry to scuttle vehicle GHG controls would position the industry poorly in the years to come. "Is this the best posture for a prosperous and successful industry that is preparing for a radically different future brought about by fast-moving technological change?" he asked.

Notions that automakers are seeking to avoid full-scale war with California and environmentalists does not preclude them from seeking more flexibility. For example, the sector petitioned EPA and the Department of Transportation (DOT) to consider several flexibilities under GHG and fuel economy rules before EPA's recent determination.

Automakers are formally urging EPA Administrator Scott Pruitt to withdraw the agency's decision to retain its light-duty vehicle greenhouse gas (GHG) standards for model years (MY) 2022-2025, arguing that the agency has ample authority to scrap the determination and "resume" a joint mid-term review of the standards with the Department of Transportation (DOT).

The recent request offers another sign that continuing uncertainty will persist around EPA's vehicle GHG program -- with Pruitt already indicating prior to his Senate confirmation that he planned to review the Obama EPA determination. That raises the prospect of a clash between the agency and California regulators, who have vowed to push forward with their vehicle GHG programs.

"The Final Determination is the product of egregious procedural and substantive defects and EPA should withdraw it," the Alliance of Automobile Manufacturers writes in a Feb. 21 letter to Pruitt that summarizes an array of auto industry objections to the Obama EPA decision to keep the standards in place. The letter focuses largely on industry's request to resume the mid-term review of the MY 2022-2025 GHG standards, and it does not have a specific request regarding the rule's stringency. However, it also floats a range of arguments that could eventually serve to weaken the standards.

The group Global Automakers also sent Pruitt a similar letter seeking to reopen the decision.

The alliance letter also highlights procedural arguments that it should be a relatively simple matter for EPA to reverse course. And it comes as some EPA critics are separately sharpening their attack on the agency's 2009 waiver authorizing California's vehicle GHG program -- a program that now significantly complicates any EPA effort to weaken its light-duty vehicle GHG standard.

The alliance argues that the final determination is a rule -- not an adjudication as EPA claims -- making the decision subject to a regulatory freeze now in place for last-minute Obama administration rules. "[A] wealth of precedents confirmed that the Final Determination is a rule, and all rules not yet published in the Federal Register are subject to the regulatory freeze," the alliance says.

The alliance then offers alternative rationales for a quick EPA reversal "on its own initiative," whether or not EPA under Pruitt continues to argue that its determination is not a formal rule.

"Even if EPA continues to endorse the view that the Final Determination is an adjudication, however, EPA has brought inherent power to reconsider its decision 'within the period for taking an appeal,'" the alliance claims, citing other court precedents.

The rest of the letter outlines an array of alleged procedural and substantive flaws in EPA's determination that should justify a prompt withdrawal of the decision, largely summarizing persistent industry criticism of the decision.

"EPA has abrogated its commitment to a robust midterm evaluation," the alliance says, reprising claims that the move scrapped prior EPA and DOT commitments to propose a decision on the determination prior to mid-2017 of the earliest.

"The industry took the agencies at their word, commissioning complex studies critical to assessing the MY2022-2025 standards and the process used by EPA in its analysis, that we had expected to add to the administrative record for the Midterm Evaluation in 2017," the alliance says.

The industry group also faults the agency for rejecting its request to extend the comment period on its proposed determination, and contends that EPA's "unilateral announcement of its Final Determination" amounts to "failure to harmonize its greenhouse gas emissions standards" with

DOT's fuel economy standards. Due to earlier statutory restrictions, DOT has not yet issued fuel economy limits for MY 2022-2025.

The alliance also reopens an array of technical and cost arguments against EPA's decision to retain the standards, including claims the vehicle standards will require more use of electrification than EPA has assumed; that there are "substantial discrepancies" between EPA and DOT's technology and cost assumptions related to the MY 2022-2025 standards; and that EPA improperly failed to conduct analysis of consumer acceptance of compliance technologies.

VI. Trailer Makers Detail Narrow Challenge to EPA Heavy-Duty Truck GHG Rule

The Truck Trailer Manufacturers Association (TTMA) says it plans to challenge only the trailer-related provisions of EPA's phase two medium- and heavy-duty truck greenhouse gas rule finalized last year, rather than pursue a broad challenge to the overall rule.

The group outlines the scope of its challenge in a February 2 filing responding to January 23 motions by eight states and environmental groups to intervene on EPA's behalf and defend the rule. That effort appeared to be aimed at defending the trailer provisions in the event the Trump administration declines to do so, though it could also be an attempt to preserve the overall stringency of the rule if the trailer portion is removed. The court has not yet ruled on the intervenor motions.

One industry source told the press that groups that back the rule's engine and vehicle provisions do not intend to become involved in the litigation and expect the new administration and TTMA to reach a settlement. However, that participation plan could change if the stringency of the heavy-duty truck portion of the rule is not softened to account for whatever may be lost from trailers.

TTMA says in the filing that it is not taking a position on the effort to intervene while noting it "challenges only the provisions that pertain to trailers, and trailers do not have engines." The filing notes that the challenged provisions require trailers hauled by heavy-duty tractors to have aerodynamic additions that, the group says, will achieve little if any GHG or fuel economy benefit because the added weight of the equipment would require loads to be lighter and result in the need for additional trucks to transport the same amount of goods.

Joining TTMA in the Dec. 28 challenge to the EPA rule is the Racing Enthusiasts & Suppliers Coalition, a group that is expected to argue that EPA's removal of language from a draft version of the rule -- which critics warned could affect amateur racers -- did not go far enough to satisfy their concerns.

Offering support to this group is Sen. Richard Burr (R-NC), who introduced January 24 legislation, S. 203, to "stop EPA from cracking down on amateur race car mechanics and hobbyists." Rep. Patrick McHenry (R-NC) January 6 introduced a companion version in the House, H.R. 350.

Burr's office said in a statement: "In 2015, for the first time ever, the Obama administration proposed a rule that would have enabled the EPA to fine amateur motorsports enthusiasts for converting their personal vehicles to racecars. This proposal ran counter to nearly a half century of clear congressional intent under the Clean Air Act. Thankfully, the rulemaking was removed; however, the EPA still views the practice of converting vehicles into racecars as unlawful. The RPM Act will ensure that no administration will ever be able to overstep its regulatory powers in this area."

EPA last April announced that it removed the provision in the then-proposed truck rule that addressed "tampering" with vehicles and had outraged the racing enthusiasts. In a statement posted to its website, the agency said it "supports motorsports and its contributions to the American economy and communities all across the country. EPA's focus is not on vehicles built or used exclusively for racing, but on companies that don't play by the rules and that make and sell products that disable pollution controls on motor vehicles used on public roads." But nonetheless, EPA said it "has decided to eliminate the proposed language from the final rule."

VII. Trump to Roll Back Obama's Climate, Water Rules Through Executive Action

President Trump is preparing executive orders aimed at curtailing Obama-era policies on climate and water pollution, according to individuals briefed on the measures. While both directives will take time to implement, they will send an unmistakable signal that the new administration is determined to promote fossil-fuel production and economic activity even when those activities collide with some environmental safeguards.

One executive order — which the Trump administration will couch as reducing U.S. dependence on other countries for energy — will instruct the Environmental Protection Agency to begin rewriting the 2015 regulation that limits greenhouse-gas emissions from existing electric utilities. It also instructs the Interior Department's Bureau of Land Management (BLM) to lift a moratorium on federal coal leasing.

A second order will instruct the EPA and Army Corps of Engineers to revamp a 2015 rule, known as the Waters of the United States rule that applies to 60 percent of the water bodies in the country. That regulation was issued under the 1972 Clean Water Act, which gives the federal government authority over not only major water bodies but also the wetlands, rivers and streams that feed into them. It affects development as well as some farming operations on the grounds that these activities could pollute the smaller or intermittent bodies of water that flow into major ones.

Trump, who signed legislation last week that nullified a recent regulation prohibiting surface-mining operations from dumping waste in nearby waterways, said he was eager to support coal miners who had backed his presidential bid.

The greenhouse-gas limits on existing power plants, dubbed the Clean Power Plan, represented a central components of President Barack Obama's climate agenda. The regulations, which were put on hold by the Supreme Court and are being weighed by the U.S. District Court for the District of Columbia, direct every state to form detailed plans to reduce carbon dioxide emissions from such sources as coal-fired power plants, enough to decrease carbon pollution by about one-third by 2030, compared with 2005 levels.

One measure — lifting the moratorium on federal coal leasing — could take immediate effect. That freeze has been in effect since December 2015, and last month the Interior Department proposed major changes to a program that guides coal exploration and production across 570 million publicly owned acres.

C. Climate Change Is A Hoax

Many consider efforts to zero out specific climate change activities at EPA as inevitable, given critiques by Pruitt and others of EPA's power plant rules up to this point.

The United States will switch course on climate change and pull out of a global pact to cut emissions, said Myron Ebell, who headed U.S. President Donald Trump's Environmental Protection Agency (EPA) transition team until his inauguration. "(Trump) could do it by executive order tomorrow or he could do it as part of a larger package," Ebell told a conference in London. "I have no idea of the timing."

Trump, a climate change doubter, campaigned on a pledge to boost the U.S. oil and gas drilling and coal mining industries by slashing regulation. He also promised to pull the United States out of the Paris Agreement aimed at curbing global warming.

Ebell is Director of Global Warming and International Environmental Policy at the Competitive Enterprise Institute, a conservative think tank in Washington.

He told reporters that the president had made a number of "clear black-and-white" promises on climate and energy during his campaign. That includes exiting the climate deal, defunding programs that advance environmental programs and withdrawing or repealing Obama administration rules regarding the Clean Power Plan.

Asked to clarify his claim that the president would pull the US out of the 2015 Paris climate change deal, Ebell advised reporters to go back and read Trump's campaign speeches. Trump promises included exiting the Paris agreement, cutting funds for UN climate programs, and undoing President Obama's climate action plan and rules on CO2 emissions, Ebell said.

His work at the EPA had been to "translate commitments and promises made by President Trump...into an action plan that can be accomplished fairly quickly", he added.

Leaders in China, Europe and elsewhere have cautioned Trump that withdrawing could imperil international cooperation on security, trade and other fronts.

Environmental groups have warned that withdrawing from the global accord would have significant consequences. As the richest nation and the second-largest polluter, U.S. efforts are central to keeping climate change from hitting an irreversible tipping point, unleashing catastrophic floods, droughts and storms, according to researchers.

The accord, brokered in December 2015 by more than 190 countries, is broader than any previous climate agreement. It calls for reducing pollution in hopes of limiting global warming to 2 degrees Celsius (3.6 degrees Fahrenheit) above temperatures at the outset of the industrial revolution.

D. Modify NAAQS Process

A group of mostly GOP senators has reintroduced a bill that would extend EPA's process for setting national ambient air quality standards (NAAQS) and ease future limits, legislation that could win approval given its support from top Republican leaders, including House Speaker Paul Ryan (R-WI).

S. 263, introduced February 1 by Sens. Shelley Moore Capito (R-WV), Jeff Flake (R-AZ), and Joe Manchin (D-WV) seeks to extend the NAAQS review cycle from the current five years to 10 years, while introducing new factors that could limit the stringency of the limits for the six standards, with a particular focus on ozone.

Reps. Pete Olson (R-TX), Bill Flores (R-TX) and Bob Latta (R-OH) February 1 introduced the House companion H.R. 806.

While the legislation did not advance in the last Congress, it could see action in the current Congress given backing from Ryan. His election-year agenda cited previous versions of the legislation to address concerns that, in some cases, the NAAQS review cycle meant that EPA was developing new standards before states had implemented prior versions.

“It takes longer than five years to implement these standards, so the statute forces EPA to develop a new standard before the agency has gotten very far implementing the old one, and without knowing whether a new standard is even needed,” Ryan wrote. “To address these concerns, limited changes have been proposed to facilitate more streamlined, effective implementation of standards and eliminate premature and unnecessary rulemakings,” he said.

The legislation’s review cycle extension would apply to all six NAAQS: ozone, particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead. Supporters say EPA rarely meets its five-year deadlines anyway, and has been sued by environmentalists to force court-ordered deadlines to complete reviews.

The bill would further prohibit any ozone NAAQS review before 2025, and extends the compliance date for states to meet EPA’s toughened ozone NAAQS of 70 parts per billion (ppb), set in 2015. This would avoid duplicative requirements for states still implementing EPA’s weaker ozone NAAQS of 75 ppb, set in 2008, the lawmakers say.

States’ suggested designations of areas in “attainment” or “nonattainment” with the 2015 NAAQS would now be due in 2024, with EPA’s final decisions on designations due in 2025, rather than October this year as currently foreseen, and state implementation plans (SIPs), outlining states’ plans to attain the NAAQS, not due until 2026.

Under EPA’s current proposed schedule, SIPs for areas classified in “moderate” nonattainment would be due in late 2019, with the first attainment deadline -- for “marginal” areas -- passing in late 2020. EPA has yet to finalize its proposed implementation rule for the 2015 ozone NAAQS, and is taking comment on the proposal.

The bill would further base future NAAQS reviews on consideration of technical feasibility and also a report from EPA’s Clean Air Scientific Advisory Committee (CASAC) on “any adverse public health, welfare, social, economic, or energy effects which may result from various strategies for attainment and maintenance of” the standards.

Until now, EPA has been allowed to consider only public health impacts in setting “primary” NAAQS, designed to protect public health, with an express Supreme Court prohibition on consideration of implementation costs, while industry groups and GOP lawmakers say costs are an important factor that should be considered.

The pending bill would require EPA to issue implementation guidance concurrently with new NAAQS, rather than years after issuance of a NAAQS as has been the pattern in the past. Permit applicants with applications deemed complete at the time a new NAAQS is promulgated would be allowed to comply with permit requirements relating to the NAAQS in effect when they filed their application.

Further, the bill would force EPA to prepare within two years a report on the impact of foreign-sourced air emissions on NAAQS attainment in general, and to report on the effectiveness of states' petitioning EPA under the air law for a regulatory exemption for foreign emissions beyond their control under air law section 179(B).

The Obama EPA in its proposal for implementation of the 2015 ozone NAAQS said it views section 179(B) as essentially applicable to areas experiencing pollution from areas bordering the United States, not emissions from further afield. Some states and industry groups are highly critical of this restriction, however.

E. Rescind California Waiver

As noted above, the auto industry has concerns regarding the California waiver which allows CARB to set its own vehicles standards but others have concerns as well. Trucking and construction groups are expressing optimism that they can prevail in their long-pending federal lawsuit challenging the Clean Air Act waiver allowing California to implement more stringent vehicle emission standards than EPA, due to the potential new influence of Trump administration officials.

"[We] are encouraged that President Trump's nominee to head up the U.S. EPA has questioned whether California should be granted the enforcement waivers from the U.S. EPA to institute their own independent air quality regulations," Joe Rajkovicz, director of governmental affairs for the Western States Trucking Association, one of the plaintiffs in the pending case, told the Northern California Record.

"Our lawsuit claims the U.S. EPA applies the wrong set of standards when considering a waiver application -- essentially acting as a rubber stamp to the whims of California regulators," the February 2 article says.

Rajkovicz was referring to comments from new EPA administrator Scott Pruitt, who during his recent Senate confirmation hearing opened the door to rolling back California's waiver to pursue light-duty vehicle greenhouse gas controls that are stricter than EPA's, potentially the first time the agency has sought to withdraw an existing approval, though he vowed not to "prejudge" the issue.

The industry lawsuit, Dalton Trucking, Inc., et al. v. EPA, et al., is now pending before the U.S. Court of Appeals for the 9th Circuit. The industries are urging the court, including in recent briefs, to undo EPA's Clean Air Act waiver allowing California to restrict use of non-road equipment to limit air emissions, arguing that it misinterprets the air law and should not receive deference from the court on that interpretation -- a major test of EPA's waiver authority.

The suit aims to overturn the agency's 2013 grant of an air law waiver for California to introduce in-use restrictions on nitrogen oxides from non-road engines. The engines are commonly found in construction equipment.

F. Abolish EPA

In the House, Rep. Matt Gaetz (R-FL) and other lawmakers have already introduced H.R. 861, a bill that would abolish EPA and move the agency's duties to states.

G. Bill Limiting DOJ Settlement Power Passes Committee

House Republicans are citing the Obama EPA's court settlement with Volkswagen (VW) over its emissions test cheating scandal that created a \$1.2 billion fund supporting zero emissions vehicle (ZEV) infrastructure as a major reason to approve a bill to bar similar pacts in the future, saying such deals circumvent Congress' spending power. During a February 7 House Judiciary Committee markup, supporters of H.R. 732 said the bill is designed to block any future Department of Justice (DOJ) actions similar to the VW agreement, as well as fair-housing cases they object to, by restricting payments in settlements to those that remedy "actual harm" that was "directly and proximately caused by the party making the payment."

When committee Democrats raised objections that the bill would prevent restitution for indirect harms, including the general impacts of increased air pollution from VW's emissions violations, GOP members of the panel argued that legislators, not DOJ, are in the best position to decide how to address those cases.

"Settlements addressing indirect harms are precisely the problem. How best to remedy indirect harm is a policy question" that should be dealt with by Congress, Rep. Ken Buck (R-CO) said. Rep. Bob Goodlatte (R-VA), chairman of the full judiciary committee and H.R. 732's primary sponsor, said DOJ lacks statutory authority to negotiate settlements aimed at indirect injuries. Rather, he said, it can only secure funds for victims who were directly harmed by criminal conduct.

"DOJ has authority to obtain redress for victims. Federal law defines victims to be those directly and proximately harmed by a defendant's acts. Once those victims have been compensated, deciding what to do with additional funds extracted from defendants becomes a policy question properly decided by elected representatives," Goodlatte said. He later said that penalties for environmental violations could still be spent on remediation, or "maybe it'll be spent on another priority," depending on Congress' priorities.

But Rep. Hank Johnson (D-GA) countered that Republicans' opposition to stringent environmental policies means they would be unlikely to fund efforts like the ZEV fund, as opposed to "other priorities." "My friends on the other side want to do as much as they can to protect corporate polluters from accountability. . . . If you put this money in the hands of the legislative branch, then it's not going to go for environmental remediation. It's going to go for other things, like war -- weapons of war," Johnson said.

In response, Rep. Louie Gohmert (R-TX) said, "We're not looking to protect corporate polluters . . . we're looking to make sure that that money goes where it should, instead of going to reward some group that is friendly in a political way."

Legislators at the hearing voted down a series of Democratic amendments aimed at weakening the bill along party lines, including one offered by panel ranking member Rep. John Conyers (D-MI) that would exempt settlements for lead contamination in drinking water and another from Johnson to exempt all instances of indirect harm caused by unlawful conduct. H.R. 732 itself passed the hearing on a 17-8 vote, clearing the way for a future vote by the full House.

26. Trump Adviser Derides Environmental Experts

Myron Ebell claims that policymakers were in thrall to firms and NGOs who had "figured out how to get rich" by promoting the idea of climate change. He said a "climate industrial complex" worth

billions of dollars was lobbying governments worldwide. He was speaking at a Brussels event organized by the Alliance of Conservatives and Reformists in Europe.

"The arguments and ideas are on the side of free market thinking about the environment, and the power, money and influence are on the side of environmentalists," he claimed. Ebell went on to urge his audience to think of environmental experts as "urban eco-imperialists".

Ebell's opening speech rejecting all state intervention in environmental issues was dismissed as "narrowly focused and very disappointing" by former UK minister for climate change Greg Barker. "Please stop trashing experts - I think it's incredibly dangerous," the Conservative peer said.

Barker advised Ebell to take advantage of his time outside the "Trump bubble" to engage with the broad consensus of scientific opinion on man-made climate change. Speaking to journalists after the panel, he added that there was a "very strong mainstream conservative voice that is pro-climate action, pro-markets" in the EU.

A protester from Greenpeace was removed from the room after interrupting Ebell, saying he was "denying basic science and funded by the fossil fuel lobby".

27. Automakers Hire Powerful Lobbying Group

The Alliance of Automobile Manufacturers has hired Akin Gump Strauss Hauer & Feld LLP to promote "reasonable fuel efficiency," as well as safety standards for the auto industry, according to lobbying disclosure records released by the Senate last week. The firm has been lobbying for the industry group since January 1 and includes several prominent lobbyists on its team, including Hunter Bates, former chief of staff to Senate Majority Leader Mitch McConnell (R-Ky.); Ryan Thompson, ex-chief of staff to Sen. Jim Inhofe (R-Okla.); and Ed Pagano, a former top legislative affairs aide in the Obama White House.

Bates lobbied for the alliance at his prior firm, Republic Consulting LLC. The group is one of K Street's big spenders, having shelled out \$7.45 million on lobbying last year, according to records. Akin Gump is the influence industry's top money-making firm. It brought in \$35.91 million in lobbying fees last year, according to the Center for Responsive Politics, a campaign finance watchdog group.

Automakers have bristled at fuel economy standards issued by U.S. EPA. In the final days of the Obama administration, the agency decided to keep those tough standards in place through 2025, a decision that was made months ahead of schedule. Industry lobbyists, including the alliance, are hopeful that EPA under Trump will soften those rules.

In a statement congratulating EPA Administrator Scott Pruitt on his Senate confirmation, Alliance of Automobile Manufacturers President and CEO Mitch Bainwol said his group looks forward to working with the agency chief to get those standards "back on track."

Automakers are increasing their efforts taking aim at the standards in their current form.

General Motors LLC has also added to its lobbying team, hiring Majority Group LLC to lobby for the company since the beginning of the year, according to records. Hayden Rogers, former chief of staff for Sen. Joe Manchin (D-W.Va.), and Jed Bhuta are lobbying for the company. Bhuta is familiar with GM, having been its director of federal affairs and also lobbied for America's Natural Gas Alliance in the past.

The Majority Group also signed up to lobby for Southern Co. Its registration shows that Bhuta is the firm's lobbyist that has been working on behalf of the electric utility giant since January 1.

28. Top EPA Vehicle Staffer Defends Agency, Acknowledges GHG Uncertainty

The top EPA transportation and air quality official is broadly defending the agency's mission to protect public health, while acknowledging uncertainty about the agency's agenda under the Trump administration and declining to predict the result of the administrator nominee's pledge to review a recent decision retaining light duty-vehicle GHG rules.

"Elections have consequences," EPA Office of Transportation and Air Quality Chief Chris Grundler said in January 25 remarks at an SAE International event in advance of the Washington Auto Show in Washington, D.C. He added that government policies "will and indeed are changing," but acknowledged the peaceful transfer of power to the new administration. "Our new leadership is just now arriving at the EPA . . . we all respect the prerogatives of our new leadership to set the agenda and establish priorities," Grundler said, adding that the transition will take time and calling a degree of uncertainty in presidential transitions "very normal."

While Trump's EPA administrator, Scott Pruitt, has pledged to review EPA's recent determination to retain its light-duty vehicle GHG rules, multiple observers are suggesting the industry might want to think long and hard before launching a major fight over EPA's vehicle rules, given California's leverage to adopt its own GHG programs.

During the recent SAE event, Grundler -- who first came to EPA in 1980 and was heavily involved in developing the first GHG standards for light- and heavy-duty vehicles -- issued a broad defense of the agency and career staff at a time when it has served as a political punching bag for many Republican lawmakers and Trump during the campaign.

"One thing is certain, the mission of the [EPA] to protect public health and the environment does not change with election cycles," Grundler said, adding that this mission is grounded in laws. "All of us career staff at the EPA take the same oath as the President to defend the Constitution. . . . It is an honor and a privilege to do these jobs, and we will do our duty."

And he also defended Clean Air Act vehicle rules that he noted were developed largely in cooperation with the industry over decades, a trend he argued should continue.

"We can't accomplish our missions at EPA without your firms being successful, we get that," he said, noting that the industry funds research and development from its annual revenues. He added that the history of the Clean Air Act shows that economic progress and environmental progress are not "mutually exclusive."

His remarks mixed a focus on the present -- including the lessons of the recent Volkswagen emission cheating scandal -- with discussion of the future and the need to ensure that environmental implications are factored into planning for self-driving cars.

It "offends the fundamental sense of fairness" for companies that cheat on emissions to "gain an advantage over those trying to build clean vehicles," Grundler said, referencing the VW scandal.

On emerging issues, Grundler said the environment "has not been a big part of this conversation so far" about the implications of autonomous vehicles, but "I think it should be," given the potential of the technology to either benefit or harm the environment. "We need to figure that out."

Grundler in both his remarks to the audience and to reporters afterward repeatedly demurred on predictions of specific agency actions. For example, in response to a reporter query on whether or how EPA might jettison its final determination on the vehicle rules, Grundler said, "That will be up to the new administrator." "I know that [Pruitt] mentioned in his [Senate confirmation] hearing that it merits review, so we will be prepared to brief him and his team on the work we did," Grundler added.

Similarly, in response to whether altering the determination or ultimately weakening the rules would require new technical analysis, he said "it would not be wise for me to speculate on that right now," adding that he is an engineer and did not want to provide any legal opinion.

29. Republican Luminaries Float Carbon Tax That Could Scrap EPA GHG Role

Several veteran Republican luminaries are launching an effort to build support for a carbon tax and "dividend" plan that could largely revoke EPA's authority to regulate greenhouse gases, tailoring their pitch to the Trump administration and GOP lawmakers who are already vowing to scuttle EPA's climate programs.

The effort, floated under the umbrella of a newly launched Climate Leadership Council (CLC), brings together several longtime Republicans who have separately embraced calls for carbon tax-based approaches to address climate change, but now can make the case with the GOP in unified control of Congress and the White House.

It remains to be seen whether the effort or others like it can break through publicly-expressed hostility to climate policy coming from nearly all federal GOP lawmakers -- many of whom even do not acknowledge the climate change problem.

Also, the proposal's reliance on substituting an initial \$40 per ton carbon tax for GHG regulatory authority -- environmentalists' only real leverage to force GHG cuts to date -- points to difficult and bruising negotiations that would be necessary with Democrats and environmentalists to enact such a plan. However, the biggest hurdle might be winning buy-in from President Donald Trump. Key anti-establishment White House advisers have long been skeptical of GHG curbs and might be cool to a pitch from veteran Republican statesmen.

"We have no assurances at all that this is going to be something the administration will grab hold of," said James Baker, former Secretary of State for President George H.W. Bush and also Treasury Secretary during the Reagan administration, at a February 8 National Press Club event announcing the proposal. "We happen to believe this will make American great again but . . . we will see what the administration thinks about it," Baker said.

He and several former GOP administration officials were scheduled to hold meetings on the proposal with Trump officials February 8. News reports say the meetings were expected to include Vice President Mike Pence; Trump adviser Jared Kushner; Gary Cohn, director of the National Economic Council; and Trump's daughter Ivanka Trump, who is said to favor action to address climate change.

Highlighting early support from major Republicans, the party's 2012 standard bearer Mitt Romney tweeted February 7 that the CLC plan is "thought provoking," adding that it would both "strengthen the economy" and "confront climate risks."

Baker's remark came at the formal launch of the CLC, a group geared toward "mobilizing global opinion leaders around effective popular and equitable climate solutions." The group released three documents on the tax and dividend plan, offering general guidelines for policymakers while leaving open many of key decisions.

The specific regulations that would be repealed are not clear, though the plan specifically mentions EPA's Clean Power Plan. It also suggests that a robust carbon tax could end federal and state tort liability for emitters.

To enable this policy trade, the initial carbon tax rate should "exceed the emissions reductions of current regulations," according to the proposal text. And a "Blue Ribbon Panel" could recommend "at the end of a five year period" whether the tax rate should be increased further, based on the best available climate science.

The proposal is signed by Baker, former George W. Bush Secretary of Treasury Henry Paulson, former Reagan Secretary of State George Shultz, former Reagan Council of Economic Advisers (CEA) Chairman Martin Feldstein, former George W. Bush CEA Chairman Greg Mankiw, CLC President Ted Halstead, Sequoia Capital's Thomas Stephenson, and former Walmart board chairman Rob Walton.

Leaving the Obama rules in place would result in a 16 percent reduction, while the analysis finds that a \$40 per ton tax could result in a 28 percent GHG cut -- easily meeting the U.S. Paris pledge.

The GHG analysis appears to leave open the question of what would happen to transportation-related rules under the CLC proposal, noting that "a much higher tax rate is needed to ensure emissions reductions in the transport rather than the power sector."

30. Professor Co-Authors Report Assessing Cost of Climate Change

Chris Forest, associate professor of climate dynamics at Penn State, was co-author of a National Academies of Sciences, Engineering and Medicine report recommending new methods for estimating the social cost of carbon emissions worldwide.

According to the report, "Valuing Climate Damages: Assessing Approaches to Updating the Social Cost of Carbon," new practices would strengthen the scientific basis, provide greater transparency and improve characterization of uncertainties over the current estimates. The social cost of carbon is a dollar estimate of the net global damages incurred per metric ton of carbon emissions in a given year.

The report enhances changes to a method developed in 2010 by the federal Interagency Working Group on the Social Cost of Greenhouse Gases by highlighting four components of analysis: socioeconomic and emissions projections, climate modeling, estimation of climate impacts and damages, and discounting net financial damages. The report also suggests long-term improvements that could be made to update on a regular basis the social cost of carbon emissions.

Government agencies use the estimated cost when analyzing the impacts of various regulations, including standards for vehicle emissions and fuel economy, regulation of emissions from power plants and energy efficiency standards for appliances.

“The overall role of this report is to provide guidance on how the federal government can make more informed decisions when making regulatory analyses,” said Forest. “Ultimately, accounting for the impacts of climate change is required for long-term planning in the government, business and all areas of society. I hope this report will help serve this purpose.”

Forest, an expert on the uncertainty and integration aspects of climate modeling, contributed his knowledge on modeling the long-term response in the Earth system to future emissions while also considering computational efficiency of the overall modeling system.

“A strong tension exists between the complexity required to represent the details and the simplicity to run thousands of scenarios,” said Forest.

The climate module must provide changes on a regional and global scale in response to climate forcings, and also be able to capture the basic physics, chemistry and biology of the Earth system by representing the detailed processes, interactions and feedbacks of the atmosphere, oceans, land and ice components.

The report provides analysis on how these complex climate variables interact and are further shaped by society, economics and other factors, to generate different possible futures. Accounting for these interactions in the overall framework is important but difficult to capture with simple models, said Forest.

The study was funded by the U.S. Department of Energy. The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology and medicine.

31. North America’s First Electric School Bus Unveiled in Palo Alto

The eLion electric school bus, the first Type C electric school bus manufactured in North America, was recently unveiled in Palo Alto, CA. The eLion was introduced by David Heurtel, the Québec Minister of Sustainable Development, Environment and the Fight against Climate Change, and Tyson Eckerle, Deputy Director of Zero Emission Vehicle (ZEV) Infrastructure at the California Governor’s Office of Business and Economic Development (GO-Biz). The eLion uses a technology developed and funded in part by proceeds from the Québec cap-and-trade program which is linked with the California program.

With help from GO-Biz, Lion Bus plans to locate a new manufacturing facility in California. The state will help Lion find a location for the new plant as the company ramps up production.

The eLion provides an example of how the two regions’ leadership and collaboration on climate change is driving economic growth through clean tech investment and innovation. Since the launch of their cap-and-trade programs in 2013, Québec and California have provided more than \$5.5 billion for initiatives and technologies financed through Québec’s Green Fund and California’s Greenhouse Gas Fund. Many of the investments target innovations in transportation, since this sector is the largest single contributor of greenhouse gas emissions in both California and Québec.

The eLion was developed by Québec-based Lion Bus and is emblematic of the region's fast growing electric vehicle industry. Zero emission school buses are attracting strong interest from school districts because they make the planet cleaner and provide healthier air for children, whose developing lungs are especially vulnerable to vehicle emissions. Zero-emission buses also benefit from incentive purchase funding made possible by Québec and California's cap-and-trade programs, which aims to help bring technologies like the eLion to communities most in need of pollution relief.

California and Québec have linked their respective cap-and-trade programs to create the only carbon market in the world that is designed, developed and operated by sub-national governments from different countries. With the province of Ontario expected to join in 2018, the market will soon represent a population of 62 million and a GDP of more than \$3.7 trillion.

32. B.C. Government Launches Incentives for Zero-Emission Vehicles

British Columbia's Minister of Energy and Mines has announced an investment of \$40 million to encourage British Columbians to "make the switch to zero-emission vehicles, reduce greenhouse gas emissions and support investment in made-in-B.C. green technology."

The funding for the province's Clean Energy Vehicle (CEV) Program will be distributed over the next three years to support continued point-of-sale purchase incentives of up to \$5,000 for battery electric vehicles and \$6,000 for hydrogen fuel cell electric vehicles, the Ministry of Energy and Mines said in a press release. The vehicle price cap established for the CEV Program in March 2016 remains in effect: vehicles priced above \$77,000 are ineligible for purchase incentives. The vehicle incentives will continue to be administered and delivered by the New Car Dealers Association of British Columbia.

Programs funded within the \$40 million amount are also under development to:

- Expand public, residential and workplace charging and hydrogen fueling infrastructure;
- Support research, economic development and job training in the zero-emission vehicle (ZEV) sector;
- Increase public awareness of the benefits of ZEVs;
- Continue purchase incentives for specialty-use vehicles used in vehicle fleets such as light-duty zero-emission trucks, buses and motorcycles; and
- Provide incentives for bikes, electric bikes, electric scooters, car share credits and transit passes when someone scraps an older vehicle.

The provincial Minister of Environment, noted that "transportation accounts for nearly half of the emissions by the average B.C. family, and light-duty vehicles account for 14% of B.C.'s overall emissions. With 98% of our electricity in B.C coming from clean or renewable sources, encouraging people to buy or lease a zero-emission vehicle is one of best ways we can reduce greenhouse gas emissions and ensure British Columbia remains a climate action leader," she said.

The Ministry of Energy and Mines noted that the funding provides more money per year to meet growing demand for rebates on vehicles and specialty-use vehicles, and supports the expansion of charging stations, hydrogen fueling stations and the development of new research and training programs, fulfilling the province's undertaking in the Climate Leadership Plan to expand the CEV

Program to support new vehicle incentives and infrastructure, as well as education and economic development initiatives.

Funding for incentives of \$500 toward the cost of bicycles, electric bicycles, electric scooters, car share credits and transit passes when someone scraps an older vehicle will be distributed by SCRAP-IT BC, the ministry said, adding that incentives from SCRAP-IT BC for the purchase of a new electric vehicle have been increased from \$3,250 to \$6,000, and it is also now offering incentives of \$3,000 for the purchase of a used electric vehicle.

The province introduced the CEV Program in 2011 and – including today's announcement – has since committed more than \$71 million for vehicle purchase incentives, charging and hydrogen fueling infrastructure, vehicle fleet programs, public outreach and research and training.

The ministry reported that each electric vehicle on the road in B.C. displaces four tons of carbon dioxide emissions annually. In 2015, the ZEV sector encompassed 198 companies, employed approximately 3,850 full-time equivalents and contributed about \$700 million in total direct economic activity.

33. B.C. Joins International Alliance for Zero-Emission Vehicles

British Columbia has become the 14th jurisdiction to sign on to the International Zero-Emission Vehicle (ZEV) Alliance, whose members strive to make all new passenger vehicles in their jurisdictions ZEVs by no later than 2050.

Achieving the 2050 goal will accelerate the global transition to ZEVs and could reduce transportation sector climate impacts by more than one billion tons of carbon dioxide emissions per year by 2050, lowering global vehicle emissions by about 40%, the Ministry of Environment said in a press release.

ZEVs in use today include battery-electric, plug-in hybrid and fuel cell vehicles. Other governments that have signed on to the International Zero-Emission Vehicle Alliance include Quebec, Germany, the Netherlands, Norway, the United Kingdom and the states of California, Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island and Vermont.

According to B.C.'s environment ministry, the province is a leader in clean-energy vehicles with the largest public charging infrastructure network in Canada and the second-highest per capita adoption of electric vehicles in the country. The province introduced the Clean Energy Vehicle Program in 2011 and has since committed \$25 million to make clean energy vehicles more affordable and reduce GHG emissions. The program offers point-of-sale purchase incentives up to \$5,000 for the purchase or lease of a new battery-electric or plug-in hybrid electric vehicle, and up to \$6,000 for a hydrogen fuel cell vehicle, the ministry said. Since 2011, the program has supported the purchase of approximately 2,000 electric vehicles and the development of over 1,000 charging stations.

The ministry also reported that in 2012, the use of renewable and low-carbon fuels resulted in the avoidance of over 900,000 tons of GHGs in B.C. – the equivalent of removing more than 190,000 vehicles from the road. By 2020, the low-carbon fuel requirements are expected to result in the avoidance of 2.7 million tons of GHGs annually. A further 20 DC fast charging stations and 200 level 2 charging stations will be installed by March 31, 2018.

34. VW Was Not Alone - Bosch to Pay VW Diesel Owners \$330 Million

With a judge set to weigh in on the settlement VW Group negotiated with its 3.0-liter V-6 diesel owners, Volkswagen seems to have settled most of the U.S. legal claims stemming from its diesel-emission cheating scandal. Total costs in the U.S. alone are now more than \$20 billion, and among other penalties, VW has pleaded guilty to three felony counts of criminal misconduct under U.S. law.

Global auto supplier Bosch, which sells billions of dollars of parts to VW Group all over the world—and which wrote the "defeat device" software VW used to trick the EPA tests also reached a settlement with VW owners. According to court documents filed when the 3.0-liter V-6 diesel settlement was revealed, the German company will pay out \$327.5 million to U.S. owners of Audi, Porsche, and Volkswagen diesel vehicles.

Under the settlement, \$163.3 million of that is for the owners of almost half a million 2.0-liter 4-cylinder TDI diesels sold by VW and Audi between 2009 and 2015. Most 2.0-liter diesel owners will receive \$350 each. The vast majority of their cars are expected to be sold back to VW, although 2015 models may now legally be modified.

The 2.0-liter diesel cars include the Audi A3 TDI and the TDI models of the Volkswagen Beetle, Golf, Golf SportWagen, Jetta, Jetta SportWagen, and Passat.

Bosch's tab for the smaller group of 80,000 3.0-liter V-6 diesels—sold by Audi, Porsche, and Volkswagen—is far higher per car, at \$113.3 million. Owners of those vehicles are expected to receive \$1,500 each from Bosch.

According to the press, none of Volkswagen's thousands of engineers knew how to write the "defeat device" software that would cheat the emission tests. The company was deeply nervous about that role, according to a New York Times article.

In agreeing to the settlement, Bosch specifically did not admit any wrongdoing or accept any liability. The company said it had chosen to settle the cases with both diesel-vehicle owners and the U.S. Federal Trade Commission to allow it to focus on a "transformation process" on which it has embarked.

Bosch's woes in connection to the Volkswagen diesel scandal are far from over, however. The company is still the subject of criminal inquiries in the U.S. and Germany, and the target of numerous civil suits from Volkswagen owners in several European countries. Bosch will "continue to defend its interests in all other civil and criminal law proceedings," it said in a statement, and that it would "cooperate comprehensively with the investigating authorities in Germany and in other countries."

The involvement of Bosch, one of the world's largest auto suppliers, underscores the broad nature of the diesel deception, which stretched beyond the carmaker and involved dozens if not hundreds of people for nearly a decade.

Volkswagen held powerful sway over Bosch, based on the accounts in the lawsuits. The carmaker was one of Bosch's biggest customers, with a relationship dating from the early days of the Volkswagen Beetle in the 1930s.

“A supplier has practically no possibility to say ‘no,’ or they lose business from the biggest carmaker in the world,” said Kai Borgeest, a professor at the University of Applied Sciences in Aschaffenburg, Germany, who has testified as an emissions expert at the European Parliament.

In 2006, when Volkswagen began planning a push to sell fuel-efficient “clean diesel” in the United States, Bosch provided an innovative fuel injection system known as common rail, as well as a newly developed onboard computer called the EDC17. Bosch advertised in trade magazines that the new engine computer “makes an important contribution to observing future exhaust gas emission limits.”

But Volkswagen developers soon found that their pollution control equipment could not meet stricter emissions standards in the United States. The equipment would wear out too quickly if it operated continuously. At a meeting in November 2006, Volkswagen managers and engineers developed a plan for how they could use software supplied by Bosch to recognize the telltale driving pattern used by regulators when they measured emissions inside special labs, according to the lawsuits and American authorities’ case against the carmaker. The software would instruct the pollution control equipment to fully deploy only when a test was underway. It dialed back the controls under normal driving conditions, causing the car to spew more toxic nitrogen oxides than a heavy-duty diesel truck.

Volkswagen did not have anyone at the time who could make the necessary changes to the software. So the company turned to Bosch to do the programming, according to the class-action lawsuits in the United States. Volkswagen engineers provided detailed specifications to Bosch, which wrote the necessary code.

Later, Bosch helped conceal the software from authorities, according to the class-action suits. It altered an onboard diagnostic system so it would not provide warnings that the emissions system was malfunctioning. The suits also said Bosch helped delete text from software documentation that might have raised suspicion.

“VW and Bosch continued over the next few years to refine the defeat device,” one of those lawsuits said. “This was a lengthy and complicated process.” The sheer amount of work required to install the software in Volkswagen vehicles suggests that a large number of people were involved. The software had to be altered for each model and option package. There are 11 million tainted diesel engines in more than 30 Volkswagen, Audi, Porsche, Seat and Skoda models, which were available around the world in dozens of variations.

Knowledge of Bosch’s involvement reached to the top, the class-action lawsuits said. In May 2014, shortly after a study by researchers at West Virginia University uncovered discrepancies in Volkswagen diesel emissions, Volkmar Denner, the Bosch chief executive, took part in a meeting in Wolfsburg with Martin Winterkorn, the carmaker’s chief executive.

The atmosphere inside Volkswagen at the time was tense. Executives feared the West Virginia study would alert regulators to the deception. At that meeting, one of the items on the agenda was the “acoustic function,” according to company documents quoted in the lawsuits. That was an internal code name for the defeat device. Bosch argued that there was a general discussion about diesel engine acoustics at the meeting, but no talk of a defeat device, according to a court document.

35. VW to Pay Additional \$1.2 Billion for 3.0L Engines in Emissions Test Scandal

Volkswagen has agreed to pay at least \$1.2 billion in buybacks and compensation to settle claims from U.S. owners of cars with larger diesel engines rigged to cheat on emissions tests. The proposed settlement filed in U.S. District Court in San Francisco covers some 75,000 Audi, Volkswagen and Porsche cars with 3.0-liter diesel engines.

Owners of older models that cannot be fixed to meet pollution standards will be offered buybacks and compensation. People with cars that can be fixed will get compensation of up to \$16,114 - if VW can come up with a fix by an agreed deadline. If not, buybacks could push the cost as high as \$4.04 billion.

Volkswagen has already agreed on a settlement for some 500,000 smaller, 2.0 liter diesel engines.

36. Study Finds Saturday Driving Restrictions Fail To Improve Air Quality

Decades ago Mexico City's air pollution was so poor, birds would fall out of the sky -- dead. Locals said living there was like smoking two packs of cigarettes a day, according to one report. In response, Mexico City took several steps to try to improve air quality including restricting driving one or two days during the weekdays. The program has had negligible results.

In 2008, the city added driving restrictions on Saturdays in hopes of moving the needle but according to new research by Lucas W. Davis, an associate professor at UC Berkeley's Haas School of Business, extending the program one more day also isn't working.

"Saturday driving restrictions are a flawed policy. It's a big hassle for people and does not improve air quality," says Davis, who is also the faculty director at the Energy Institute at Haas.

The study, "Saturday Driving Restrictions Fail to Improve Air Quality in Mexico City," published in Scientific Reports, is the first to examine the effects of restricted driving on Saturdays. It compares pollution levels of eight major pollutants before and after the program went into effect. Having fewer motorists on the road on Saturdays led to close to zero impact. Proponents of the Saturday program had estimated vehicle emissions would be reduced by 15% or more.

Mexico City has the worst air quality in the Western Hemisphere with particulate levels that are three to four times higher than in New York, Los Angeles, São Paulo, or Buenos Aires, the paper states. Mexico City has tried many different approaches to improving air quality, including the city's well known driving restrictions, which were first introduced in 1989.

To determine the impact of Saturday restrictions, Davis analyzed hourly air pollution data from 29 monitoring stations around Mexico City from 2005 to 2012. He studied emission levels for carbon monoxide; nitric oxide; nitrogen dioxide; nitrogen oxide; ozone; large particulates; small particulates; and sulfur dioxide. None of these pollutants decreased as a result of Saturday driving restrictions.

Trying to figure out why pollution did not decrease, Davis next examined ridership data from Mexico City's public transportation systems. From city buses, to light rail, to electric buses, he found no discernible increase in Saturday riders. "People have found other ways to get around the driving restrictions," says Davis. "Some purchase multiple cars, others take taxis or Uber."

Davis argues that as Uber and other taxi-like services become increasingly available, driving restriction policies will continue to struggle to improve air quality. Instead, he suggests that Mexico

City and other cities plagued by dangerous pollution need to require stricter vehicle emission tests.

"Test every car, test every year. If you have a car that's polluting the air, you can't drive it. Period," says Davis.

Despite this study, other experts believe that Mexico has made significant strides towards improving the environment while both the population and the economy have expanded and hundreds of thousands of new vehicles have come onto the roads.

"Alongside driving restrictions, Mexico City has made massive investments in public transport to provide cleaner alternatives to driving," said Mark Watts, executive director of C40, the global network of cities dedicated to improving the environment and fighting climate change.

"Several new bus rapid transit lines have opened recently and they have the largest year-round bike sharing scheme in North America. At the recent C40 Mayors Summit hosted by Mexico City, Mayor Mancera committed to ban diesel cars from the city by 2025, because they are responsible for the pollutants that are most dangerous to public health."

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37. China Approves Two Electric Car Projects

China has announced that it has approved two electric car projects worth 6.15 billion yuan (\$896 million). After completion, the two projects will boast a combined output of 115,000 electric cars, according to a statement by the National Development and Reform Commission.

The approval came as the central government has intensified efforts to encourage the use of new energy vehicles to ease pressure on the environment, including tax exemptions, discounts for car purchases and an order for government organizations to buy more new energy cars, Xinhua news agency reported.

China sold 507,000 new energy vehicles last year, an increase of 53 per cent year on year.

Sales of pure electric vehicles surged 65.1 per cent year on year to 409,000, accounting for 80 percent of new energy vehicle sales.

An earlier guideline by the State Council said China will build more than 12,000 new charging stations before 2020 to fulfil the demands of over 5 million new energy vehicles.

38. China Electric Vehicle Sales Drop on Cut in State Subsidies

Sales of new-energy vehicles, the term China uses to refer to all-electric vehicles, plug-in hybrids and fuel-cell cars, dropped 74 percent in January from a year earlier to 5,682 units, according to data released February 13 by the China Association of Automobile Manufacturers.

Handouts from both central and local governments can lop as much as 80 percent off the retail price of a new-energy vehicle in China, which has helped boost sales and pushed the country past the U.S. as the biggest market in the world for electric vehicles since 2015. The central government cut its subsidies for electric cars by 20 percent from January 1 and limited the level

of rebates local authorities can match to no more than 50 percent, with all support to be phased out by 2020.

China sold 507,000 units of new-energy vehicles last year, 53 percent more than the previous year, according to CAAM, missing its estimate for 700,000 units. Green-car sales could reach 800,000 units this year, according to the association. The country is targeting to sell 2 million units in 2020.

39. Beijing Imposes Weekday Ban on Older Cars

Beijing announced a weekday ban on older, heavily polluting passenger cars from driving within about a 10-mile radius of the city center. The ban was announced February 14 as the city warned that children and the elderly should remain indoors because of unhealthy levels of air pollution in the capital. It is to take effect immediately.

The ban applies to gasoline-powered light vehicles—primarily passenger cars—that fail to meet China III national vehicle emissions standards, which were implemented for vehicles sold in Beijing in 2006, and nationwide in 2008.

Some 5.7 million cars and trucks now travel daily in Beijing, accounting for about a third of the fine particulate matter pollution (PM-2.5) considered so dangerous to human health.

While restrictions already in place have limited the number of vehicles that do not meet China III emissions standards to around 10 percent of the cars on Beijing's roads, those vehicles contribute more than 30 percent of nitrogen oxide and 25 percent of volatile organic compound pollution from vehicles in the capital, the government said.

Violators who drive within the Fifth Ring Road—roughly 10 miles from the heart of the city—face a fine of 100 yuan (\$14.55) for every four hours their vehicle stays within the ban area, the city said.

40. Beijing to Intensify Battle Against Air Pollution

Beijing will intensify the battle against air pollution, as the city mayor promised to take "extra" anti-smog measures in 2017.

Beijing mayor Cai Qi said in a media conference that the municipal government will continue to decrease coal use by helping residents in 700 villages use clean energy. "We will try to basically realize zero coal use in six major districts and in Beijing's southern plain areas this year," Cai said, adding that the city will eliminate coal-fired boilers that each produces no more than 10 tons of steam per hour. "We will slash coal use by 30 percent to less than 7 million tons in 2017," he said.

Meanwhile, Beijing will kick 300,000 old vehicles off the roads this year and promote new energy cars instead.

"It is an urgent task for Beijing and its neighboring areas to work together and improve air quality in the region," Cai said.

Average density of PM 2.5 in the Chinese capital was 73 micrograms per cubic meter in 2016, down 9.9 percent from the previous year, according to Lu Yan, head of the Beijing Municipal Reform and Development Commission.

41. Pollution Control Ordered for Cities Surrounding Beijing

Twenty cities surrounding Beijing whose bad air is exacerbating chronic pollution in the Chinese capital must implement coordinated air-pollution controls, the Ministry of Environmental Protection announced. The order is meant to help Beijing reduce daily concentrations of PM-2.5—fine airborne particulates of 2.5 microns or less that are known to damage lungs and other organs—from last year’s average of 73 micrograms per cubic meter to 60 micrograms per cubic meter by the end of 2017, state-run China Daily reported February 13.

The ministry began discussing the joint coordination last June, according to a document from the ministry website outlining possible actions the cities would take to assist in controlling air pollution around the Beijing-Tianjin-Hebei region.

China is into year three of its declared “war on pollution” and is trying to ensure local governments follow air-pollution reduction rules, particularly in the northeastern part of the country around the capital.

Under a 2013 action plan, local governments are required to halt some industrial production when air pollution emergencies are forecast, but not all local governments have followed those orders, the government said. Under the new plan, cities must implement coordinated air pollution controls, monitoring and early warning systems. In addition to Beijing and Tianjin municipalities, the cities ordered to take pollution-cutting measures include eight in surrounding Hebei province—Shijiazhuang, Langfang, Baoding, Cangzhou, Hengshui, Xingtai, Tangshan and Handan; five in Shandong province to the near east—Binzhou, Jinan, Zibo, Dezhou and Liaocheng; and five in Henan province just south of Hebei—Zhengzhou, Xinxiang, Hebi, Anyang and Jiaozuo.

A crescent of mountains rings Beijing on the west and north, often bringing air pollution into the city through three natural wind channels from the south, southeast and east. The cities and their thousands of tall smokestacks from iron, steel and other heavy industry are a major source of air pollution for the capital.

42. Some Companies Must Join Pollution Tracking System This Year, China Says

Businesses in more than 20 industries in China must join a new pollution registration system during the next 11 months that will let officials track and ultimately tax a company for excess air and water pollution, the government announced. The system will cover power plants, pesticides producers, food processors and a slew of other businesses this year. A second wave of deadlines in 2020 will include coal producers, automobile manufacturers and electronics companies.

The new registration system will ultimately apply to any company listed on a national, provincial or city-level “critical monitoring catalog” of businesses required to report pollution and in some cases pay pollution fees.

China announced the broad outline of the plan to replace the “critical monitoring catalog” system in November. But on January 23, the environment ministry unveiled a list of industries whose businesses must apply for registrations as early as this year.

Industries and companies that need to apply for the licenses by the end of this year are:

- power plants not incinerating residential garbage, hazardous waste, biomass, waste dirt or ash;
- meat processing companies that annually slaughter more than 15,000 pigs, 10,000 cows or 10 million chickens;
- seafood processors annually handling more than 10,000 metric tons of food;
- food or animal feed processors;
- pure vegetable oil producers;
- raw sugar processors;
- corn meal processors;
- cement producers;
- pesticide producers;
- cotton, wool, hemp dyeing and finishing and chemical fiber weaving, dyeing and finishing companies;
- companies that use procedures for electronic polishing;
- leather and fur tanners;
- pulp makers;
- paper makers;
- paper product producers;
- petroleum refiners;
- basic organic chemical processors;
- coking companies;
- pharmaceutical raw material manufacturers;
- plain glass makers; and
- most ferrous and non-ferrous metals processors;

Companies in these industries need to apply by the end of 2020:

- coal production;
- automobile manufacturing;
- computer, communications and electronic equipment manufacturing;
- drinking water production, and wastewater treatment of more than 100,000 metric tons per day;
- power production using residential garbage, hazardous waste, biomass, or waste dirt or ash;
- rail, ship building, aerospace and other transport equipment manufacturing;
- public facilities;
- general and industrial waste landfills, and any companies utilizing hazardous waste;
- wood furniture making, including bamboo and rattan;
- companies with boilers or stoves with a 20 metric ton per hour capacity;
- companies with industrial kilns;
- companies that handle wastewater and other liquid waste;
- dairy producers above 200,000 metric tons annually;
- condiments and fermented products;
- food processors that involve refining processes;
- wine and liquor producers;
- woven garments and other apparel manufacturing;
- fur makers that don't involve tanning;

- shoe making;
- lumber production above 200,000 cubic meters annually;
- furniture finishing with electronic polishing, spray paint or oil paint using over 10 metric tons of finishing product annually or any lumber processing using adhesives;
- dissolved wood pulp processing;
- chemical fiber production;
- rubber and plastics manufacturing;
- non-metal mineral products manufacturing;
- electrical equipment and machinery manufacturing;
- waste resource utilization;
- catering;
- vehicle, electronic and household appliance repair; and
- hospitals.

In addition, companies that are not listed under these categories, but emit sulfur dioxide, nitrogen oxide, smoke or dust, or volatile organic compounds above 30 metric tons annually each will also be required to register. Any company with annual emissions of wastewater with certain levels of chemical oxygen demand and ammonia nitrogen over 30 cubic meters annually also will have to register.

43. Chinese Air Pollution Linked To Respiratory and Cardiovascular Deaths

In the largest epidemiological study conducted in the developing world, researchers found that as exposures to fine particulate air pollution in 272 Chinese cities increase, so do deaths from cardiovascular and respiratory diseases. The researchers reported their results in "Fine Particulate Air Pollution and Daily Mortality: A Nationwide Analysis in 272 Chinese Cities," published online ahead of print in the American Thoracic Society's American Journal of Respiratory and Critical Care Medicine.

"Fine particulate [PM2.5] air pollution is one of the key public health concerns in developing countries including China, but the epidemiological evidence about its health effects is scarce," said senior study author Maigeng Zhou, PhD, deputy director of the National Center for Chronic and Non-communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention. "A new monitoring network allowed us to conduct a nationwide study to evaluate short-term associations between PM2.5 and daily cause-specific mortality in China."

The researchers found:

- The average annual exposure to PM2.5 in the Chinese cities was 56 micrograms per cubic meter -- well above the World Health Organization air quality guidelines of 10 µg/m³.
- Each 10 µg/m³ increase in air pollution was associated with a 0.22 percent increase in mortality from all non-accident related causes.
- Each 10 µg/m³ increase in air pollution was associated with a 0.29 percent increase in all respiratory mortality and a 0.38 percent increase in chronic obstructive pulmonary disease (COPD) mortality.
- Mortality was significantly higher among people age 75 and older and among people with lower levels of education.
- The association between PM2.5 levels and mortality was stronger in cities with higher average annual temperatures.

The researchers speculate that differences in educational attainment may result in environmental health inequalities and access to health care that affect mortality. In warmer cities, the authors hypothesize residents may spend more time outdoors and open windows, increasing their exposure to PM2.5.

The researchers said their study suggests a weaker association between increases in PM2.5 and mortality than studies conducted in Europe and North America. They suggest a number of possible explanations for this difference, including that in most Chinese cities there was a plateauing of mortality at the highest levels of pollution and the components of PM2.5 pollution in China may be less toxic than the components in Europe and North America. Crustal dust from arid lands and construction make up more PM2.5 pollution in China than it does in Europe and North America.

In 2013 China began introducing PM2.5 monitoring in urban areas. The current study analyzed available data from 2013-15. For nearly half the cities in the study, there was only one year of PM2.5 data available, and the authors note that a limitation of their study is that it does not look at the cumulative effect of PM2.5 over many years.

"Our findings may be helpful to formulate public health policies and ambient air quality standards in developing countries to reduce the disease burden associated with PM2.5 air pollution," said study co-author Haidong Kan, MD, professor of public health at Fudan University in China. "Further massive investigations, especially looking at the long-term effect studies, are needed to confirm our results and to identify the most toxic components of PM2.5 in China."

44. Japan Makes Big Push for Hydrogen Fuel Cells

With the blessing of Prime Minister Shinzo Abe, Toyota is at the forefront of Japan's efforts to use hydrogen and fuel cells to power cars, heat homes and keep factories running. Other companies pursuing the technology include Panasonic Corp., Toshiba Corp. and JX Nippon Oil & Energy Corp.

Japan's enthusiasm for hydrogen contrasts with growing momentum toward electric cars in the U.S. and Europe, where automakers from Volkswagen AG to General Motors Co. are working on dozens of models due to be released in the next few years. It's one of the few ways the nation can both cut emissions and its reliance on imported fuels as it winds down nuclear power following the meltdown at Fukushima.

"It's about increasing the number of players and putting in place hydrogen infrastructure in the most appropriate locations so that hydrogen business becomes viable in 10 to 15 years," said Taiyo Kawai, project general manager at Toyota's R&D and Engineering Management Division.

Fuel cells convert hydrogen into electricity, leaving only water vapor as a byproduct. They've been in use for decades and gained prominence when the U.S. space program took off in the 1950s. It's only in the last few years that they've become cheap enough for more widespread commercial applications. Sourcing and handling the hydrogen for them remains one of the biggest logistical and economical challenges.

Japan's drive to use the lightest element is running alongside its incentives for electric vehicles, though the nation has done more than any other to establish fuel cells as a viable technology for power generation and maybe cars as well.

One catalyst is the Tokyo Olympic Games in 2020, a major showcase for Japan's technological prowess. The capital has announced plans to spend 45.2 billion yen (\$400 million) on fuel-cell vehicle subsidies and hydrogen stations by the time of the games. Toyota envisions more than 100 fuel-cell buses crisscrossing the nation's capital by then.

Prime Minister Abe has become a vocal advocate for hydrogen—both to stimulate developments in technology and to help the resource-poor nation lower greenhouse gases. With Japan relying more on fossil fuels since the shuttering of most of its nuclear reactors after the Fukushima disaster almost six years ago, it's a push that's gained more urgency.

"Hydrogen energy is an ace in the hole for energy security and measures against global warming," Abe said in a speech to parliament on January 20. "Thanks to deregulation, a hydrogen society of the future is about to begin here in Japan."

Examples of projects under development include:

- Toyota has been selling a fuel-cell vehicle called the Mirai since late 2014 and targets annual global sales of 30,000 hydrogen vehicles by 2020.
- GM and Honda Motor Co. Plan to begin jointly making fuel-cell systems around 2020.
- The Japanese government is targeting 1.4 million installations of "ene-farm" residential fuel-cells by 2020 and 5.3 million by 2030.
- Toshiba is offering products called H2One, which combine a storage battery and fuel cell in a container. It's designed for sites with bigger energy demand and can be used in disasters. One such project in Kawasaki, near Tokyo, can supply enough electricity and hot water for 300 people for a week.
- The government aims to be producing hydrogen from emissions-free sources by 2040.
- Kawasaki Heavy Industries Ltd. and Iwatani Corp. are among companies developing technologies to produce hydrogen through the gasification of lignite coal and studying how to ship liquefied hydrogen in the western city of Kobe.

While Japan's program is global in reach, envisioning liquid hydrogen supplies coming from the U.S. and Australia, the projects in most other places envision the fuel being produced and consumed locally, said Ali Izadi-Najafabadi, a Tokyo-based analyst for Bloomberg New Energy Finance.

Even so, for all the promise offered by fuel cells in homes and cars, widespread use of hydrogen would require setting up supply chains and costly infrastructure such as filling stations from scratch. For that reason, Musk, the founder of Tesla Inc., has famously scorned hydrogen vehicles as expensive and impractical, particularly since lithium-ion batteries that power his own cars are already widely available.

"Electric vehicles are obviously cheaper," said Hiroyuki Sato, a consultant at Nomura Research Institute. "There are charging stations, and they are being mass produced."

Even with Abe's backing, hydrogen isn't expected to play a dominant role as a source of energy in Japan any time soon. The nation's 2030 power mix, an outlook published by the trade ministry in 2015, makes no mention of hydrogen.

45. Nissan Used Defeat Device in Qashqai Diesel, South Korean Court Rules

A South Korean court ruled against Nissan Motor Co. in an emissions case, siding with the government in its accusations that the automaker had used a defeat device in its Qashqai SUV. Nissan sued South Korea's environment ministry last year after the ministry said Nissan cheated on emissions of the Qashqai diesel model and fined it 330 million won (\$279,900).

The ministry had also halted sales of the model in the country and ordered a recall of 814 Qashqai vehicles.

The ruling by the Seoul Administrative Court is a blot on the image of Nissan, which had hoped to be exonerated of the charges of emissions cheating in the only country where it has been accused of it. The court said it believed that Nissan used the defeat device to deactivate its emissions reduction system in the Qashqai under regular driving, which led to excess emissions of nitrogen oxide (NOx). "It is reasonable to believe that the vehicle in this case achieved certification with false and other illegal means," the court said in its ruling.

Nissan said the court ruling was "regrettable." "There is no change in our stance that we have not used any illegal devices in our vehicles," a Nissan spokeswoman said. "We will consider possible measures," she added, without elaborating.

The government conducted tests on 20 diesel vehicles made by various automakers after it had found Volkswagen Group had manipulated emissions of some vehicles sold in the country.

The Qashqai SUVs affected by the probe were produced at Nissan's plant in Sunderland, England, and use 1.6-liter diesel engines supplied by its alliance partner, Renault.

46. Increasing Factory and Auto Emissions Disrupt Natural Cycle in East China Sea

China's rapid ascent to global economic superpower is taking a toll on some of its ancient ways. For millennia, people have patterned their lives and diets around the vast fisheries of the East China Sea, but now those waters are increasingly threatened by human-caused, harmful algal blooms that choke off vital fish populations, according to a new study led by researchers at the University of California, Irvine.

"There has been massive growth in emissions from China's factories and cars over the past few decades, and what comes out of the smokestacks and tailpipes tends to be richer in nitrogen than phosphorus," said Katherine Mackey, assistant professor of Earth system science at UCI and lead author of the study, published recently in *Frontiers in Marine Science*.

Mackey and colleagues at Woods Hole Oceanographic Institution, China's Fudan University and Nanjing University, and UC Santa Cruz studied the deposition of particles in the ocean downwind of China's enormous industrial and population centers. They found that the winds carried an overabundance of nutrients offshore, where they fell into water to be taken up by marine organisms. That, together with runoff from rivers flowing into the sea, is causing changes to the region's ecology. Certain aquatic plants and plankton thrive on the extra nutrients, for instance, crowding out others and wreaking havoc among ocean-dwelling species' normal ratios.

47. Honda Cites Growing Electric Car Demand for Hitachi Venture

Honda Motor Co. plans to set up a joint venture with Hitachi Automotive Systems Ltd. to develop, produce and sell motors for electric vehicles, citing the expected increase in demand for electric autos with tougher environmental standards.

The joint venture has plans to manufacture in Japan, U.S. and China and will consider using Hitachi's existing plants in those countries, Hitachi Automotive Chief Executive Officer Hideaki Seki said at a February 7 briefing in Tokyo. The new company also will sell to automakers other than Honda if there's demand, he said.

Automakers are forging partnerships amid pressure from regulators and rising costs for developing cleaner vehicles and self-driving cars. Toyota Motor Corp. and Suzuki Motor Corp. signed an agreement February 6 to undertake a "concrete examination" of a business partnership. Honda last month said it will jointly manufacture fuel-cell systems with General Motors Co.

Establishing a joint venture with Hitachi can save costs as motor production requires huge capital investment, Honda CEO Takahiro Hachigo said at the briefing. It also will combine the advantages of both companies to advance the competitiveness of the motors from the joint venture, he said.

Tokyo-based Hitachi Automotive, established in 2009, is a subsidiary of the conglomerate Hitachi Ltd. The company first started selling motors for electric vehicles in 1999 and supplies them to Nissan Motor Co., Toyota and General Motors.

The motors from the Honda-Hitachi venture will be used for hybrids, plug-in hybrids and electric vehicles, Hachigo said. Even with the new company, Honda will continue to make its own motors and keep production lines in Japan, he said.

48. CSE Finds India's Vehicular Emission Monitoring System "Incompetent"

The PUC (Pollution Under Control) system - the only one to check emissions from on-road vehicles - is extremely weak and incompetent, said the Centre for Science and Environment (CSE). Calling for a strong and updated system emission testing system, CSE, a member of the Supreme Court appointed Environment Pollution (Prevention & Control) Authority (EPCA), noted that India cannot deal with the "emission fraud" with the present system.

Citing the example of 'Emissiongate' or the 2015 Volkswagen emission scandal, the report said India needs strong compliance regulations to make manufacturers responsible for on-road emissions. "India will be in deep trouble if massive motorization happens without strong compliance with emissions limits. This will enhance the public health risk," said a CSE report.

Pointing out some of the major incompetence of current emission testing, the report said the PUC can't even check the particulate emissions (the particles lesser than 2.5 or 10 mm in air) which cause major pollution problems in cities. "New data from the Delhi Transport Department shows that failure rate is as dismal as five per cent -- nearly all vehicles pass the test. There is no data, however, on how many vehicles show up for the test," said the study.

The Supreme Court has recently given directions to the EPCA to audit all the 614 PUC stations, given the serious concerns about their quality and credibility. The report added that the PUC norms for on-road vehicles are extremely lax for the older pre-Bharat Stage IV vehicles or older vehicles, often responsible for the maximum emission.

"Without a robust system of emissions monitoring and compliance, the investments in emission control systems in vehicles to meet tighter standards can go waste and negate air pollution control efforts in our cities," the report said.

It said that the automobile industry must commit to portable emissions monitoring to check real driving emissions when Euro VI standards are enforced. The government must fix manufacturers' responsibility for emissions performance of vehicles during their useful life on the road while manufacturers must declare certified as well as on-road emission levels, it said.

"This is a serious public health issue in India where air pollution has emerged as the fifth largest killer and vehicles are responsible for very high exposures to toxic pollution in cities," it said.

Citing the "biggest corporate frauds in the global automobile industry the Volkswagen defeat device case" CSE said such scenarios have gone nearly unnoticed in India. Even though Volkswagen cars have been found to be erring, there is no official action nor is there any attempt to ensure that other models do not emit more than their certification levels.

"This exposes a serious weakness in our emissions regulations that compromise emissions performance of vehicles. This makes India extremely vulnerable as it is rapidly motorizing and dieselizing without a strong compliance framework. This month, even China has gone ahead to recall 2.0 liter Volkswagen diesel cars," its analysis said.

49. Expert: New Emission Standard Will Make Air Quality Better In Delhi

The Environment Pollution Control and Prevention Authority (EPCA) move to implement a uniform structure on commercial vehicles in the entire country has been welcomed by environment experts. They claimed that the directive, when implemented, will reduce air pollution in the region.

EPCA recently directed the transport departments of Delhi-NCR to register only BS-IV vehicles, including commercial trucks, from April 1. This came with an aim to tackle air pollution in Delhi-NCR which has been marked "poor" since the last three months.

At present, commercial vehicles having all-India permits run on Bharat Stage (BS)-III engines, which are a major contributor to pollution. The shift from BS-III to BS-IV will reduce air pollution considerably as the BS-IV engines emit 80% less pollutants than BS-III.

"In Delhi-NCR, the respective governments had implemented BS-IV emission norms in 2010. This new directive is different from the earlier one as it now enforces BS-IV in the entire country," said Anumita Roychowdhury, executive director, research and advocacy and head of the air pollution and clean transportation program, Centre for Science and Environment.

When asked about the benefit to Gurgaon, she said, "Long distance commercial vehicles, which enter Gurgaon are one of the major sources of air pollution. After this directive, Gurgaon will be rid of them as they will not be allowed to ply on Delhi-NCR roads after April 1."

The regional transport authority officials said they will take necessary steps in the city to follow the directive. "We will follow the directives of the Supreme Court. We have not received any order as of now; however, we will take the required steps for compliance of the order," Trilok Chand Secretary, regional transport authority (RTA), said.

Earlier, the RTA has identified 5,000 commercial vehicles, which are unfit to ply on roads. This came after the Supreme Court had asked to ban all 10-year-old diesel and 15-year-old petrol vehicles in Delhi-NCR.

50. Carmakers Cry Foul Over Rollout of BS-IV; Raise Issue of Inventory

A meeting called by the SC-mandated Environment Pollution Control Authority on a countrywide rollout of BS-IV norms by April 1 saw plenty of fireworks recently with the Society of Indian Automobile Manufacturers raising the issue of inventory of non-BS-IV vehicles. SIAM claimed it has an expected pending inventory of about 7.5 lakh two-wheelers, 75,000 commercial vehicles (trucks and buses), 45,000 three-wheelers and 20,000 passenger vehicles as on April 1, 2017. EPCA, at a meeting held in October 2016, had directed that vehicle manufacturers exhaust their stock of non-BS-IV vehicles before April 1.

SIAM's executive director KK Gandhi (technical), however, said: "It's impossible for us to meet this April 1 deadline because of market forces and the impact of demonetization. We cannot do anything about the pending inventory. The IIT-Kanpur's emissions inventory shows diesel vehicles are responsible for only 2% of emissions."

Gandhi added that the "law of the land says that the industry will manufacture only BS-IV-compliant vehicles April 1, 2017, onwards; you (EPCA) changed the rule in October." He was referring to an August 19, 2015, notification of the ministry of transport, which mainly said that only BS-IV-compliant vehicles will be manufactured from April 1, but didn't comment on whether the registration of non-BS-IV vehicles would be allowed after that.

Gandhi said the pending vehicles would have to be "scrapped" if EPCA didn't allow them to be sold. EPCA responded by saying that the industry was eyeing a "scrapage policy" to boost sales.

EPCA once again directed NCR governments to ensure that no non-BS-IV vehicle be allowed to be registered from April 1.

"You have 75,000 trucks left. This is unacceptable. Do you know that moving to BS-IV can give us a reduction of 80% in PM emissions from these vehicles? You should have ramped down production since you were told in advance. Is EPCA now going to stand for automobile manufacturers' profits?" asked Sunita Narain, a member of EPCA. Bhure Lal, head of EPCA, said: "We gave you six months' notice. That's substantial."

A Delhi government official who was at the meeting claimed the transport department had tried to procure 4,000 "clean buses" but manufacturers had, instead, suggested that they buy BS-III buses. "They had placed tenders for DTC buses but there were issues with rates. I think they wanted the buses at the same rates as the previous order. The commercial negotiation didn't work out," Gandhi later told reporters.

EPCA members said at the current rate of sales, manufacturers can sell their 20,000 passenger vehicles and 7.5 lakh two-wheelers in a month or so. But for three-wheelers and commercial vehicles, EPCA will hold a meeting with manufacturers to discuss the breakup of pending inventory.

Under section 5 of the environment protection Act, EPCA has the powers to issue orders on violation of various environmental standards. Vishnu Mathur, Director General of SIAM is also a member of EPCA.

51. When Will You Take 'Polluting' Cars off Roads, NGT Asks Volkswagen

The National Green Tribunal has asked Volkswagen India why costs shouldn't be imposed on it for allowing around 3.14 lakh "polluting" vehicles to ply on the roads more than a year after it undertook to recall them.

Trials in the US showed Volkswagen had installed a software in cars which allowed them to fudge emissions during tests. The Automotive Research Association of India (ARAI) too conducted tests on some Volkswagen models and found three to nine times more NOx emissions on the road compared to test conditions.

The bench said, "...The company has...offered voluntary recall... which are subject matter of these proceedings on EA189 diesel engine... (but) the process of recall is not complied with".

It asked Volkswagen and ARAI to submit a roadmap for the recall. Following the tests, Volkswagen India had undertaken to rejig the software by recalling around 3.14 lakh vehicles which were in alleged violation of emission norms.

Of these, only 1 lakh have been recalled so far, said Sanjiv Ailawadi who is representing petitioner Saloni Ailawadi. The bench asked Volkswagen and the Automotive Research Association of India (ARAI) to "file roadmap with regard to recalling of the vehicles in question. We direct ARAI to file a submission with regard to present status of the recall program."

The tribunal also asked why costs shouldn't be imposed over the delay. "The tribunal has made it clear that environmental costs may be imposed for the delay and violations," Sanjiv Ailawadi said.

Lawyers representing Volkswagen sought to explain the delay, saying ARAI, which is being consulted on the redesign of the software, had approved it for only 70% of the 3.14 lakh vehicles.

ARAI, on the other hand, said Volkswagen had submitted redesigned software for only 70% and was yet to do so for the remaining 30%. In a statement, Volkswagen India said its cars in India were in compliance with the BS IV emission norms.

"We are in the process of implementing voluntary recall of vehicles fitted with EA 189 diesel engines in India. We are cooperating with the concerned agencies and putting our best endeavors to conclude the recall process soon. We have received approvals for 13 out of 16 types of vehicles that are eligible for the voluntary recall," it said.

52. Supreme Court Slams Centre for Not Banning Polluting Fuels in NCR

The Supreme Court slammed the government (Centre) for not taking any decision to ban polluting fuels like furnace oil and pet coke in the NCR and directed it to chalk out a comprehensive plan in a month in consultation with governments of Delhi, Uttar Pradesh, Rajasthan and Haryana to tackle air pollution in the capital.

Pointing out that an estimated eight people die every day in the capital due to pollution-related diseases, a bench of Justices Madan B Lokur and Prafulla C Pant said the governments should take immediate steps to deal with the situation.

It asked the Centre to hold consultations with the parties concerned to ban the polluting fuels used by industries and explore alternatives. The bench said sulfur content in furnace oil and pet coke is too high to be allowed to be used as fuel.

As the pollution level in Delhi has reached alarming levels, the Environment Pollution Control and Prevention Authority (EPCA) has recommended to the Supreme Court to ban the polluting fuels. Although the Delhi Pollution Control Committee had declared them unacceptable fuel in the capital way back in 1996, they are not banned outside Delhi borders and are being increasingly used by industries in the NCR, contributing to the pollution levels in the city.

Advocate Aprajita Singh, who is assisting the court as amicus curiae, told the bench that quality of fuel played a critical role in quantum of pollution generated and sulfur level in furnace oil and pet coke was multiple times higher than in other acceptable fuels. “Samples of pet coke used in NCR contains sulfur level between 69,000 ppm to 74,000 ppm and the level of sulfur in furnace oil is between 15,000 to 20,000 ppm. It is higher in comparison to petrol/diesel with 50 ppm,” she said.

The court asked Solicitor General Ranjit Kumar to ask the Centre to take a call on banning these fuels. It also suggested that a comprehensive plan should be prepared to control pollution levels in the city as various authorities were having different plans and there was lack of a holistic approach. It asked EPCA, Central Pollution Control Board, the Ministry of Environment and Forests, Delhi and its neighboring states to have a joint meeting to chalk out an acceptable comprehensive plan.

Pleading for blanket ban on polluting fuels, EPCA in its recommendation to SC said furnace oil, being the last grade produced by refineries is extremely polluting and pet coke, a by-product, is even more polluting. “There is no doubt that the use of such high sulfur fuel is greatly contributing to pollution in the region ... The use of furnace oil and pet coke should be strictly banned in NCR. Pet coke will be allowed only in cement plants, where combustion and emissions are controlled. However, if any cement plant requires the use of pet coke, it will have to seek permission from CPCB and EPCA,” it said.

EPCA said its investigation had revealed that large quantities of furnace oil are sold in Delhi and NCR by oil companies and the sale has gone up this year with 30,000 metric tons being sold every month.

53. Fuel-Efficiency Norms Give ‘Big Wiggle Room’ For Carmakers

Fuel-efficiency norms coming into force on April 1 this year are not all that they are touted to be, according to the Centre for Science and Environment (CSE). The rules, under which the average fuel-efficiency of cars is set to rise to about 18 km a liter, are not stringent enough, the organization has said.

Anumita Roychowdhury, Executive Director-Research and Advocacy, CSE, said, “The proposed compliance rules have allowed for a number of concessions to the car industry. If this is not addressed immediately, it can undermine the program.” The fuel efficiency norms—Corporate Average Fuel Economy (CAFÉ) standards—do not pertain to the efficiency of each model from a car maker’s stable, but the average of all the models ;thus giving manufacturers enough wiggle room.

Given the nature of CAFÉ standards, Roychowdhury said, brownie points are given for technologies such as mild diesel hybrid, which improve fuel efficiency slightly, but not in lines of true hybrids, defeating the purpose of the rules.

Objecting to the concession given to mild hybrids, which already enjoy incentives under the Faster Adoption and Manufacturing of Hybrid and Electrical Vehicles (FAME) program and excise duty cuts, CSE said this was “a regressive step that undercuts the ongoing effort to control dieselization.”

The rules also allow manufacturers to enjoy points for measures such as tire pressure monitoring system, special transmissions, real-time fuel economy indicator and others. “These are not effective to help either innovation or mitigation. For example, fuel economy indicators have nothing to do with real mitigation and are too dependent on driver behavior,” CSE said.

While the norms for fuel efficiency are set to come into force in phases — more stringent norms increasing fuel efficiency to 20 km per liter will come in 2022 — there is nothing in the rules on penalizing companies for noncompliance. “All that the proposed rules require for non-compliance is to submit a catch-up plan for the reporting period following the previous default year. If manufacturers fail even in the third consecutive year, the designated agency will have to report them to Ministry of Road Transport and Highways and the Bureau of Energy Efficiency. There is nothing beyond reporting,” CSE said.

The rules give more space to car makers by allowing several manufacturers to form a pool to work out the corporate average and comply with the targets. This could potentially allow large luxury car makers to pool with manufacturers producing small fuel-efficient cars to show compliance

54. Air Pollution From Vehicles Top Concern of Viet Nam City Authorities



The Ho Chi Minh City (HCMC) Transport Department has reported that pollution caused by transport activities has become alarming.

There are more than 8 million vehicles in HCMC, including 7 million motorbikes, which produce a huge volume of emission, worsening air pollution and harming people’s health. The figure is 6 million in Hanoi.

Bui Xuan Cuong, director of the HCMC Transport Department, at a working session with the HCMC leaders, reported that the environment monitoring indexes in the second quarter of 2016 were higher than that of the same period of 2015.

Seven out of 15 spots in the city were reported as having CO increasing by 1.11-2.18 times, while 11 out of 15 spots have dust increasing by 1.02-1.64 times, and eight spots have NO₂ going up by 1.02-1.31 times.

If every motorbike consumes 0.5 liters of petrol and every car consumes 1 liter a day, the 7.3 million motorbikes and 600,000 cars in HCMC would consume 4 million liters of fuel and produce a huge volume of emissions.

According to the HCMC Environment Protection Sub-department, air pollution is mostly caused by suspended dust from transport activities. The average content per hour of suspended dust monitored in the third quarter of 2016 in 20 spots in HCM City was between 87.70– 715.93 µg/m³, while 43.75 percent of monitored value could not meet the Vietnamese standard QCVN 05:2013/BTNMT (the concentration of suspended dust is 300 µg/m³ per hour).

The traffic jams in the city make the pollution even worse. The air pollution at Go Vap Roundabout, Nguyen Kiem, Xo Viet Nghe Tinh and Bach Dang streets is more serious because there are too many motorbikes, cars and buses which discharge emissions at the same time. In districts 2, 9 and Thu Duc, the dust sometimes is so thick that it looks like fog.

The same situation can be seen in Hanoi. Tay Son, Truong Chinh, Giai Phong and Nguyen Xien roads are dusty because of the heavy traffic there.

The HCMC Transport Department has proposed to the HCMC People's Committee to urge the Prime Minister to approve the MOT's plan to control vehicles' emission. Under the plan, MOT will draw up a roadmap for applying emission standards for motor vehicles with the capacity of 175 cm³ and higher in 2018-2020.

MOT initially intended to apply the plan on a trial basis in some large cities before applying it on a large scale in all localities. However, implementation has been delayed for many reasons.

55. Singapore Budget 2017: Enhancing Vehicle Incentive Schemes

The Government will adjust two vehicle incentive schemes in a bid to nudge car-buyers towards cleaner and more environmentally-friendly models, said Finance Minister Heng Swee Keat in his Budget address on February 20). Mr. Heng said the current Carbon Emissions-Based Vehicle Scheme (CEVS) will be replaced with a new scheme that would consider four other pollutants on top of carbon dioxide. The new Vehicular Emissions Scheme (VES) will include nitrogen oxides, hydrocarbons, particulate matter and carbon monoxide.

The CEVS was implemented in 2013 to encourage car owners to purchase vehicles with low carbon emissions. After a revision in 2015, the scheme provided for rebates of between S\$5,000 and S\$30,000 if vehicles registered from July 1 of that year were assessed to have carbon emissions of less than or equal to 135g of carbon emissions per kilometer. The rebates were offset from the vehicle's Additional Registration Fee (ARF).

By including four more pollutants, Mr. Heng said the new scheme hopes to account more holistically for the health and environmental impact of vehicular emissions. According to earlier reports, any regulation on nitrogen oxides emissions, for example, could affect diesel vehicles more than those that run on petrol.

The pollutant gained worldwide recognition after the Volkswagen scandal erupted in 2015, when the German car company admitted to cheating on emissions tests in the United States, and was in fact releasing nitrogen oxide pollutants that exceeded legal limits significantly.

Mr. Heng said the new scheme will run for two years starting from January 2018. Meanwhile, the current CEVS will be extended until the end of 2017.

Mr. Heng said another scheme for commercial diesel vehicles, the Early Turnover Scheme, will also be enhanced and extended. The scheme was introduced in 2013 to encourage owners of the older and more polluting Euro II and III commercial vehicles to replace them for the cleaner Euro VI ones. Mr. Heng said about 27,000 such vehicle owners have made use of this scheme since it was introduced.

He said the scheme, which was meant to expire in July this year, will be extended to Jul 31, 2019. More details on this will be shared by the Transport Ministry as well as the Environment and Water Resources Ministry during their Committee of Supply debates in March.

SOUTH AMERICA

56. CETESB Presents Proposals for New Phases of PROCONVE and PROMOT

Environment Secretary Ricardo Salles and CETESB President Carlos Roberto dos Santos presented to representatives of the automotive sector and environmentalists, proposals for the new phases of the programs of Control of Air Pollution by Automotive Vehicles (PROCONVE) and Control of Air Pollution by Motorcycles and Similar Vehicles (PROMOT). The proposals encompass several control points and aim to reduce nitrogen oxides (NOx) emissions by up to 80% compared to current regulations.



Representatives of Anfavea (Association of Vehicle Manufacturers) and Abraciclo, an association that assembled motorcycle manufacturers, took part in the meeting. One of the new rules is to control CO₂ emissions. The expectation is to reduce by 30% the emission of gas that worsens the greenhouse effect in light vehicles and, consequently, to optimize fuel consumption.

If CONAMA (National Environment Council) approves, light vehicle manufacturers will have to adjust the new fleet by 2026. For heavy vehicles, the new rules will apply from 2019 and for the bikes in 2020. The proposals presented were seen positively by the business associations and by environmentalists.

The Air Pollution Control Program for Motor Vehicles was instituted in 1986 and the Air Pollution Control Program for Motorcycles and Similar Vehicles in 2003. These programs are federally encompassed, coordinated by IBAMA and have the participation of CETESB.

"Since its inception, the various phases implemented by PROCONVE and PROMOT have greatly reduced emissions of pollutants from vehicles marketed in the country. Still, the maintenance of the benefits obtained depends on the entry of new phases," said Ricardo Salles, secretary of Environment of São Paulo.

AFRICA

57. West African Push to Clean Up Toxic Fuel Hits Snags

A West African drive to clean up toxic fuels that campaigners say pose a health hazard to millions has run into difficulties less than two months after it was announced, according to importers, traders and other oil industry insiders.

Late last year, Nigeria, Ghana, Benin, Togo and Ivory Coast unveiled a plan to reduce the amount of poisonous sulfur they would allow in fuel. But the announcement, under the auspices of the United Nations Environment Program, did not give full details of the changes or when they would come into force. That has caused uncertainty, particularly in Nigeria and Ghana, which consume more than half of the fuel used in the region.

Ghana has issued guidance and invited public comment on the fuel quality it wants. But sources told the press that a recent change in government could delay new rules.

Nigeria is still drafting its own rules. Fuel suppliers who bid for 2017 contracts do not know the quality of fuel they will have to import.

Tightening the law is crucial to improving air quality in West Africa, where 335 million people use fuel that has a sulfur content many times above what is legal in Europe and the United States. Sulfur is the target because of its recognized impact on respiratory health, and the acute danger in traffic-clogged cities like Lagos or Accra. There is a plentiful supply of low-sulfur fuel on international markets, and widely available refinery technology that can strip transport fuel of sulfur.

UNEP, the African Refiners Association (ARA), and health campaigners have been pressing governments for years to improve fuel quality. The issue was highlighted in September, when Public Eye, a Swiss campaign group, said international trading companies were using West Africa as a dumping ground for high-sulfur fuels. (See story above). UNEP program officer Jane Akumu said Public Eye's report had helped fast-track improvements in fuel quality that had been under consideration for a decade.

Legal changes and regulatory enforcement will be needed if the trade in high-sulfur fuels to the region is to be curbed, industry experts said.

Ghana recently published proposals, still not finalized, for a limit of 50 parts per million (ppm) of sulfur content in both gasoline and diesel sold at the nation's pumps.

Nigeria's proposals, also not finalized, would cut the sulfur level on imports from 1,000 to 150 ppm for gasoline, and from 5,000 to 500 ppm for diesel. The Nigerian National Petroleum Company (NNPC), said its three domestic refineries would be exempt until at least 2020.

The aim is to publish draft changes in March, although this year's tenders to swap imported fuel for crude oil were set to close on February 2. Because Nigeria is short of dollars, such swap deals account for the bulk of its fuel imports. In Nigeria, dozens of traders and local importers compete to supply fuel and the lowest bidder usually wins, making it hard to market high-quality fuel of the kind used elsewhere.

In the meantime, officials at government ministries and the NNPC would not confirm the new sulfur levels. And to add to the confusion, some of those bidding for the fuel swap deals said they understood the limits to be 50 ppm for gasoline and a much-higher 500 ppm for distillates. Spokesman Ndu Ughamadu said the NNPC was "working toward meeting improved fuel quality standards alongside the trade and environment ministries."

Nigeria's environment minister, Amina Mohammed, the force behind the regional campaign, will leave the ministry soon to take up a senior post at the United Nations, a potential setback for efforts to reduce sulfur. But Akumu of UNEP said the governments had already agreed, and the only question was implementing the changes. "It was costing them in terms of health," Akumu said. "It's a priority."

None of NNPC's facilities produce enough of the high-quality fuels needed, nor do Ghana's state-run Tema Oil Refinery or Ivory Coast's Société Ivoirienne de Raffinage. For Nigeria, Ughamadu said upgrades were underway at the Port Harcourt refinery, and planned at Kaduna and Warri, where installing equipment to cut sulfur levels could cost millions.

GENERAL

58. CO2 Mitigation Measures for Transport Will Not Achieve Climate Ambitions

Current and foreseeable policies to mitigate carbon-dioxide (CO2) emissions from global transport activity will not suffice to achieve the international community's climate ambitions, a new study published by the International Transport Forum (ITF) finds. Continued strong growth in demand for mobility means that even in the most optimistic scenario, transport CO2 emissions in 2050 will still be at 2015 levels of around 7.5 gigatons, according to projections published in the ITF Transport Outlook 2017.

This scenario already assumes that new technologies and changed behavior lead to significantly less CO2 being emitted in relation to the total distance travelled. In the ITF Transport Outlook's less optimistic baseline scenario, a doubling of global transport demand will lead to an increase of transport CO2 emissions of 60% between 2015 and 2050.

A key factor for the difficulty in reducing transport CO2 emissions over the long run is shifting global trade patterns. As trade moves to regions with a lack of rail or waterway infrastructure, greenhouse gas emissions from road freight will almost double. Driven by more trade among the region's emerging economies, freight transport on intra-Asian routes will grow particularly strongly, by 250% to 2050. Operational measures such as truck-sharing, route optimization or relaxation of delivery windows to optimize use of transport capacity would help to mitigate the emission increases here.

Urban mobility is another area of concern. Car use in cities is set to double by 2050, as fast-growing emerging economies meet mobility demand. According to the ITF analysis, cities can keep the number of cars constant at the 2015 level if they act now to put in place integrated land-use and transport policies, use pricing to manage mobility patterns and invest in accessibility through public transport.

59. World Hits Carbon Brake, but Emissions Don't Slow Fast Enough

The growth of carbon dioxide concentrating in the Earth's atmosphere is slowing but not fast enough to avert potentially-catastrophic climate change, according to new research. A slowdown

in coal use since 2011, particularly in China and the U.S., and increased energy efficiency have slowed the rise of carbon dioxide levels in the atmosphere, according to a report from the University of East Anglia and the Global Carbon Project. Exponential growth of wind and solar power also contributed. Emissions from fossil fuels and industry are projected to be at similar levels as in 2015, or about 36 gigatons.

The Paris deal on global warming agreed between almost 200 nations in 2015 aims to keep temperature rises “well below” 2 degrees Celsius (3.6 degrees Fahrenheit). It is also seeking to spur a transition to a net-zero emissions global economy by the middle of this century.

Some key indicators, such as a drop in carbon intensity in the global energy sector, are on pace to meet the goals outlined in Paris. By other measures, such as lack of progress toward large-scale carbon capture and energy storage, will make meeting 2030 emissions targets and net-zero emissions difficult, the researchers said.

Emissions from China, the world’s largest polluter, increased by 10 percent annually from 2000 before stabilizing after 2013, according to the report. In the U.S., they declined about 2 percent per year between 2007 and 2012 and flattened in the five years since. The decline in the U.S. figures was likely because of the shift to gas from coal, a sluggish economy following the financial crisis and growth in renewable energy.

Emissions could rebound if the changes were due to lingering economic weakness or other short-term factors, the researchers said. U.S. President Donald Trump’s promise to revive the U.S.’s coal industry may also reverse progress.

60. Air Quality on Cruise Ships ‘20 Times Worse’ Than In A Busy City Centre

Passengers on a cruise ship could be inhaling “60 times higher concentrations of harmful air pollutants” than they would in natural air settings, Naturschutzbund Deutschland (NABU), a German environmental association, has warned.

The air quality on board a cruise ship just after it left Marseille, measured by a journalist for the French documentary television series Thalassa and analyzed by NABU, revealed that at peak



levels, the concentration of harmful ultra-fine particles was up to 200 times higher than it would be in natural fresh air surroundings and 20 times worse than in the busy city centers of some port cities, including Venice, Marseille, Hamburg and Barcelona, with heavy traffic.

Four out of five ships were found to not be equipped with any exhaust gas cleaning systems
CREDIT: NABU

“The longest recording was conducted for a time period of almost 50 minutes where an average of 60,000 particles per cubic centimeter of air were documented. As a comparison: a fresh sea breeze at that altitude should usually be at around 1,000 - 2,000 particles at maximum. So passengers inhaled 60 times higher concentrations of harmful air pollutants,” Daniel Rieger, a transport policy officer and researcher for NABU who analyzed the data told Telegraph Travel.

Measurements were taken at various spots on the ship and for this particular sample, the sun deck and jogging lane on the top deck were found to be most affected by pollution. “But of course this can vary along with the wind and weather conditions. So potentially every part of the ship can be affected significantly,” Mr. Rieger said.

For this reason, the German Lung Association and the Pneumologists Association have warned passengers against staying on deck or inhaling ships’ exhaust gases as this could cause acute exacerbations of chronic obstructive pulmonary disease (COPD) if you suffer from lung diseases, Mr. Rieger said.

“Moreover they warn that ultra-fine particles are very dangerous, lead to lung diseases, heart attacks, strokes and are also linked to diabetes and cause deterioration for asthma and COPD patients,” he added.

In addition to fine dust and soot from funnels on cruise ships, passengers are exposed to harmful substances such as nitrogen oxides and heavy metals emitted by the combustion of marine diesel fuel and heavy oil. Diesel exhaust has been classified to be just as carcinogenic as asbestos by the World Health Organization in 2012, and exposure to it increases your risk of getting lung cancer.

"The passengers can only smell or see the particles before they get mixed up with the ambient air," Mr. Rieger told the German broadcaster Deutsche Welle (DW) following the recent air quality tests.

He warned that the latest results are most likely indicative of the poor air quality on nearly all cruise ships. “They could have done the air tests on almost any cruise ship in the world while the results would have been the same. This is due to low quality fuels (mainly heavy fuel oil - HFO) and the fact that none of the ships has a particulate filter. And as a consequence air pollutant emissions are massive,” he told reporters.

But Helge Grammerstorf, the German national director of the Cruise Lines International Association (CLIA) and a former ship captain and ship broker, denied the validity of the measurements, arguing that a more systematic test over a longer period of time is required rather than the recent selective sample of measurements taken.

The major contributors to poor air quality on board cruise ships are “bad fuel quality and a lack of exhaust gas abatement systems”, Mr. Rieger told the press. It wouldn’t be difficult for cruise ships to help air quality and improvements could be made with “a switch to better fuel, ideally road diesel or liquid natural gas, as well as the compulsory installation of particulate filters and nitrogen catalysts,” he said. But four out of five ships were found to not be equipped with any exhaust gas cleaning systems or only equipped with one that meets the lowest legal standard for northern Europe, which only reduces sulfur oxide emissions, DW reports.

Although systems that reduce particle and nitrogen oxide emissions have been available on the market for years, cruise companies have been unwilling to install these mechanisms, which require more expensive types of fuel to operate, the NABU says. Cruise lines "pay huge sums to improve entertainment and gastronomical services on board, but save as much as they can when it comes to environmental protection," Leif Miller, NABU manager told DW.

NABU will be conducting air quality checks on other cruise ships in the future, Mr. Rieger added, declining to go into any more detail.

The environmental group has previously measured the concentration of ultra-fine dust particles in the air around cruise ships in the harbors of Hamburg, Venice and the north-eastern German city of Rostock-Warnemünde, but was not allowed to take any measurements on board the cruise ships in those areas, DW reports.

61. Air Pollution May Lead To Dementia in Older Women

Tiny particles that pollute the air — the kind that come mainly from power plants and automobiles — may greatly increase the chance of dementia, including dementia caused by Alzheimer's disease, according to USC-led research. Scientists and engineers found that older women who live in places with fine particulate matter exceeding the U.S. Environmental Protection Agency's standard are 81 percent more at risk for global cognitive decline and 92 percent more likely to develop dementia, including Alzheimer's.

If their findings hold up in the general population, air pollution could be responsible for about 21 percent of dementia cases, according to the study.

"Microscopic particles generated by fossil fuels get into our body directly through the nose into the brain," said University Professor Caleb Finch at the USC Leonard Davis School of Gerontology and co-senior author of the study. "Cells in the brain treat these particles as invaders and react with inflammatory responses, which over the course of time, appear to exacerbate and promote Alzheimer's disease."

"Although the link between air pollution and Alzheimer's disease is a new scientific frontier, we now have evidence that air pollution, like tobacco, is dangerous to the aging brain."

The adverse effects were stronger in women who had the APOE4 gene, a genetic variation that increases the risk for Alzheimer's.

"Our study — the first of its kind conducted in the U.S. — provides the inaugural scientific evidence of a critical Alzheimer's risk gene possibly interacting with air particles to accelerate brain aging," said Jiu-Chuan Chen, co-senior author of the study and an associate professor of preventive medicine at the Keck School of Medicine of USC. "The experimental data showed that exposure of mice to air particles collected on the edge of USC damaged neurons in the hippocampus, the memory center that is vulnerable to both brain aging and Alzheimer's disease."

Their study, published January 31 in the Nature journal Translational Psychiatry, adds to an emerging body of research from around the world that links air pollution to dementia. The offending pollutants are fine, inhalable particles with diameters 2.5 micrometers or smaller. A human hair is about 70 micrometers in diameter, making it 30 times larger than the largest PM2.5.

The research was a collaboration between USC Davis, the Keck School of Medicine and the USC Viterbi School of Engineering. The researchers analyzed data of 3,647 65- to 79-year-old women from the Women's Health Initiative Memory Study (WHIMS). These women lived across 48 states and did not have dementia when they enrolled.

62. Research Predicts 'Crippling' Market Loss for Oil and Gas

Oil and gas could lose a "crippling" 10% of market share to solar photovoltaic (PV) and electric vehicles within a decade, a new study has predicted. Experts at the Grantham Institute at Imperial College London and the Carbon Tracker Initiative forecast that global demand for fossil fuels could peak as soon as 2020 if the costs of solar technology and electric vehicles (EVs) fall fast enough.

EVs could have a fifth of the road transport market by 2030, they said, whilst solar PV could supply 23% of global power generation in 2040 and 29% by 2050, "entirely phasing out coal and leaving natural gas with just a 1% market share".

If the international response to climate change is stronger than the national commitments under the Paris Agreement, then market trends in solar PV and electric vehicles could also help limit global warming to 2.2°C-2.4°C (with 50% and 66% probabilities) by 2100, the new analysis noted. Business-as-usual (BAU) scenarios tend to be around the 4°C mark.

The projections run contrary to those made by the energy sector. BP's Energy Outlook 2017 suggested oil, gas and coal will remain the main sources of energy come 2035.

The authors of the new report argue that such forecasts are unrealistic given that they are based on BAU scenarios, which they warned is a "highly risky" approach. "BAU scenarios involve no additional climate policy mitigation action beyond the present level, or acceleration in the extent to which low-carbon technologies impact energy markets," they noted.

The power and road transport sectors account for approximately half of fossil fuel consumption.

The experts modelled a range of scenarios for future cost reductions in PV and EVs, applying assumptions of varying levels of energy demand and global climate policy effort. "Applying up-to-date solar PV and EV cost projections, along with climate policy effort in line with the Nationally Determined Contributions (NDCs), should now be the starting point for any scenario analysis," the experts concluded.

A similar 10 percent loss of market share caused the collapse of the U.S. coal mining industry and wiped more than a 100 billion euros (\$108 billion) off the value of European utilities from 2008 to 2013, the report said.

Major oil companies are waking up to the potential disruption plug-in vehicles could have on their industry. BP Plc says electric vehicles, or EVs, could erase as much as 5 million barrels a day in the next 20 years, while analysts at Wood Mackenzie say they could erode as much as 10 percent of global gasoline demand over that time. Global oil demand could peak in as little as five years, according to Royal Dutch Shell Plc Chief Financial Officer Simon Henry.

By 2040 16 million barrels a day of oil demand could be displaced, rising to 25 million by 2050, a "stark contrast to the continuous growth in oil demand expected by industry," according to the report. The impact on the oil industry could exceed price slump of 2014 to 2016 that "wiped

hundreds of billions off capex," Stefano Ambrogi, a spokesman for the Carbon Tracker Institute, said.

The cost of EVs is already falling faster than previous forecasts and they could reach parity with conventional internal combustion vehicles by 2020, eventually saturating the passenger vehicle market by 2050, the report said.

EVs may take 19 to 21 percent of the road transport market by 2035, according to the researchers. That's three times BP's projection of 6 percent market share in 2035. By 2050, EVs would comprise 69 percent of the road-transport market, with oil-powered cars accounting for about 13 percent.

63. Air Pollution Linked To Premature Births

Curbing outdoor air pollution could help prevent 2.7 million premature births a year, a condition that threatens children's lives and increases their risk of long-term physical and neurological problems, scientists said.

Fine particles in the air from diesel fumes, fires and other sources, may increase the risk of premature births - alongside other risks including a mother's age and health - according to a study published in the Environment International journal. "Air pollution may not just harm people who are breathing the air directly - it may also seriously affect a baby in its mother's womb," said Chris Malley, lead author of the study which is based on data for 2010.

The majority of premature births linked to air pollution occur in South and East Asia, the researchers said. India alone accounts for about 1 million premature births, and China for another 500,000.

Diesel vehicles, forest fires, crop burning, and cooking with wood, dung or charcoal, are major contributors to the problem, the researchers said.

A pregnant woman in a city in China or India may inhale more than 10 times as much pollution as she would in rural England or France, the report said.

In Western sub-Saharan Africa, North Africa and the Middle East premature births were mainly linked to exposure to desert dust, the research showed.

Every year, an estimated 15 million babies are born prematurely and nearly 1 million of them die of complications, the World Health Organization says.