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EUROPE

1. New Car CO2 Up for First Time in A Decade

Average CO2 emissions from cars sold in Europe last year increased for the first time in a decade, according to provisional data published by the European Environment Agency (EEA).

New cars sold in 2017 emitted on average 118.5g CO2/km, an increase of 0.4g/km compared to 2016. This keeps climate pollution at 23g above the EU's 2021 target of 95g CO2/km. Since 2010, when monitoring started, emissions have decreased by 22g CO2/km (16%). The increase in 2017 was recorded in 17 of the 28 EU member states, including major markets such as the UK, France, Spain and Germany, according to the figures.

EEA data shows that sales of new cars increased by 3% in 2017 compared to 2016, reaching the highest number since 2007 (15.1 million vehicles), with increases in all EU nations apart from Finland, Ireland and the UK.

For the first time, petrol cars became the most sold vehicles, with 53% of total sales against 45% of diesel. Diesel sales declined in all EU countries, except for Italy (+0.6%) and Denmark (+6.9%), according to the data. The agency also noted that, while the average fuel efficiency of petrol cars has remained constant (121.6g CO2/km), that of diesel cars has worsened (117.9g CO2/km in 2017 compared to 116.8g CO2/km in 2016).

Sales of plug-in hybrids and battery-electric vehicles increased by 42%, but their market share remains low, at 1.5%.

Manufacturers had warned that a shift from diesel to petrol vehicles could challenge the EU's CO2 targets. The European Automobile Manufacturers' Association (ACEA) said in a statement that the 5% drop in diesel's market share has been offset by the increase in petrol car sales, which emit more CO2.

But Transport & Environment (T&E) argues that CO2 emissions are rising because manufacturers are selling bigger and heavier cars, especially SUVs, and are delaying upgrades of new models and the launch of new electric vehicles.

ACEA disagreed and called on EU countries to improve the recharging infrastructure to allow a large-scale switch from diesel to electric vehicles.

2. EU Parliament Adopts New Rules to Prevent Future 'Dieselgate'

The European Parliament has backed the new EU regulation to prevent the 'Dieselgate' scandal from happening again and to ensure that car manufacturers do not cheat emission tests and face fines if they do. MEPs voted on the new rules by 547 votes in favor, 83 against and 16 abstentions, during Parliament's plenary session in Strasbourg on the revised motor vehicles directive. It aims to make the testing and approval of new cars more transparent.

Under the new rules, every EU country will need to conduct a minimum number of checks on cars each year. Some nations will be required to carry out at least one check for every 40,000 new motor vehicles registered in that member state in the preceding year.

At least 20% of these tests will have to be emissions-related, the Parliament said in a statement. For countries with a low number of car registrations, there will be a minimum of five tests to be conducted.

The European Commission will also be able to carry out tests and inspections of vehicles to verify compliance, to trigger EU-wide recalls and to impose administrative fines on carmakers of up to €30,000 per non-compliant vehicle.

The legislation introduces a new testing regime to ensure cars remain within emission limits throughout their lifetime. The testing centers will be regularly and independently audited.

Under the new rules, car owners will be reimbursed if they make repairs on vehicles to fix issues later subject to a manufacturer's recall, and independent garages will have access to relevant information on vehicles to be able to compete with dealers and help drive down prices.

UK-based European Conservatives and Reformists Group MEP Daniel Dalton, who steered this legislation through Parliament, said the new rules were a strong Europe-wide response to the Dieselgate scandal. "This legislation will make cars safer and cleaner and, combined with the Real Driving Emissions testing, will ensure that a future 'Dieselgate' can't happen again... It delivers for car owners, for the environment and for manufacturers, with standards fairly applied and appropriately applied across the board."

The new rules will be applicable from 1 September 2020.

3. Nissan to End Diesel Car Sales in Europe on Strict Emission Rule

Nissan Motor Co. will stop selling diesel cars in Europe as the region moves to tougher emission standards after Volkswagen AG's pollution-test scandal. Japan's second-largest carmaker will stop offering diesel versions of passenger cars at the time of each vehicle's renewal in the coming years, Nicholas Maxfield, a spokesman in Tokyo, said May 7.

The automaker will concentrate on pushing sales of electrified vehicles, he said.

Diesel car sales in Europe slumped after Volkswagen admitted to cheating on emission tests in 2015, and demand for such models is set to fall further as regulators put tougher standards into place starting 2020. Nissan's plan follows that of Toyota Motor Corp., which said in March it will phase out diesel engines from all its passenger cars beginning this year.

Nissan sold 128,456 diesel cars in Europe last year, or about 16 percent of its total deliveries in the region, according to Bloomberg Intelligence. It manufactures diesel passenger cars such as the Juke and Qashqai in England, and the Micra compact in France.

Nissan produces diesel commercial vehicles including the Navara and NV200 in Barcelona. While diesel remains an important fuel technology for light commercial vehicles such as pickup trucks, the company will be reducing its share in this area as well, with the introduction of electrified powertrains, Maxfield said.

4. Brussels to Act Alone if IMO Stalls on Shipping CO2

The EU is prepared to go ahead with unilateral measures to control greenhouse gas emissions from shipping if the International Maritime Organization (IMO) does not move convincingly by

2023 to implement a deal to halve output by mid-century, a European Commission official warned recently. Christine Berg, who heads the maritime safety unit at the EU executive's transport directorate, was speaking at a forum hosted by the European Policy Centre thinktank a fortnight after the IMO agreed to cut maritime CO2 emissions by at least 50% by 2050. "We expect from our side that before 2023 there will be measures on the design for new ships or speed management," Berg said.

The scale of the changes the international shipping sector will have to make is exacerbated by an expected 60% increase in shipping by mid-century, said Harald Solberg, CEO of the Norwegian Shipowners' Association. "The next step for the IMO and us as an industry is to decide what measures to use to meet the CO2 target," Solberg said.

The IMO's head of air pollution and energy efficiency, Edmund Hughes, said the potential for cutting emissions through "speed optimization and management" would soon be on the agenda at the UN organization. "That ... is probably going to happen very soon in the IMO as one of the earliest discussions they have," Hughes said.

The EU representative of Norway's Statoil said liquid hydrogen was likely to be the preferred fuel by 2050, and his firm was already working on producing liquid hydrogen from natural gas. "If we are going to reach a reduction of 50% or more, most ships built after 2030 will need to be zero emissions," Jannik Londbaek said.

Femke de Jong, policy director of the campaign group Carbon Market Watch, warned, however, that transport fuels would have to be produced from renewable energy for ships to be truly net zero emissions.

The 2023 deadline stems from a demand from the European Parliament during negotiations over reforms to the EU emissions trading system, Berg said. Lawmakers were "wise enough not to insist that shipping be part of the ETS" in final negotiations with national government, but they made it clear they want action on emissions in the sector by 2023, the Commission official added.

5. EU Advisors Call for EC To Push For 'Affordable' Green Mobility

The European Commission should do more to ensure consumers are not financially burdened by the switch to cleaner forms of transport, an EU advisory body has warned. The European Economic and Social Committee (EESC) urged the Commission to carry out more analysis of the costs of transition and to be more rigorous in facilitating consumers' access to new, cleaner and affordable forms of transport.

The committee passed an opinion on 'delivering on low-emission mobility', which analyses the Commission's plans to reduce emissions produced by road transport with 201 votes in favor, 0 against and 3 abstentions.

Ulrich Samm, the German lead rapporteur on the low-emission mobility file, said potential additional costs for consumers in the quest for the EU to move towards cleaner forms of mobility "are a matter of concern". Samm explained: "Politicians should not push for changes which are ultimately very expensive for consumers. The Commission should therefore put more effort into looking into the cost because additional costs, which consumers would have to pay, have to be covered somehow."

When asked if consumers should get compensation for the additional costs they could incur, Samm told reporters that the EESC had “no special type of compensation in mind”.

The Commission has made plans to increase financial support to leverage public and private investment for the roll out of alternative fuels infrastructure and up to €800m is being made available for this. However, in its opinion, the EESC said that the Commission’s proposed funding instruments may not be sufficient to help fund the clean mobility transition.

Samm said that it was important that the Commission made sure that the benefits of new mobility services were equally available to all member states. “It would be unacceptable if, for example, older diesel cars were banned in some member states and then sold in others that have weaker economies,” Samm said.

The EESC also said that a lack of financing is the main obstacle to the modernization of public transport. “It is essential to convince more citizens to use this transport by making it more attractive,” Samm said.

He added that the Commission should take more of a technology-neutral approach in its plans to back cleaner forms of mobility and not just look at promoting electric vehicles, but biofuel-powered vehicles as well.

6. EC Confirms Air Pollution Infringement Action Delay

The European Commission has confirmed it has delayed legal action against member states over their persistent breaching of air quality rules. Infringement action against the governments, due to proceed in April, has been postponed until May.

A Commission spokesperson said president Jean Claude Juncker had postponed the next infringement cycle until after the executive has published proposals for the post-2020 Multiannual Financial Framework (MFF) “in view of the extensive and comprehensive preparatory work on the MFF and the busy college agenda”.

Environment commissioner Karmenu Vella told MEPs the EU was set to proceed with court action at the end of April against several governments for persistently flouting rules on urban air quality after they failed to provide assurances of quick and effective action to tackle illegal levels of atmospheric pollutants such as NO_x and particulate matter.

Nine member states were given an ultimatum in January to produce credible plans to reduce air pollution or face referral to the European Court of Justice. Vella did not say which of the member states - Germany, France, Italy, Spain, the UK, Romania, Hungary, the Czech Republic and Slovakia - would face action and potential fines.

Environmentalists said the decision to delay action was disappointing. ClientEarth lawyer Ugo Taddei said action was “overdue by more than eight years” and the EC was “letting down millions of people across Europe who are breathing illegal and harmful levels of air pollution”. “There is nothing to stop the Commission going ahead with legal action,” Taddei said. “If the Commission really does care about the health of Europeans, it’s high time to follow up statements with real action.”

7. French Court of Audit Slams Green Schemes

France's renewable energy support schemes are not effective in driving the country towards its climate objectives, despite their significant costs, according to a new report from France's Court of Auditors. The report by auditors was presented at a finance committee meeting at the French senate. It notes that the spending on mechanisms to support renewables was estimated at €5.3 billion in 2016 and is set to grow in the future.

The vast majority of this spending (€4.4 billion) backed renewable electricity, while a total of €567 million went to renewable heat, although this sector is key to achieve France's climate targets, according to the auditors. The report says that without a "clear strategy and stable and coherent support mechanisms, the French industrial fabric has had little benefit from renewables development".

It explains that there is a disparity between cost, production volumes and share of different renewable sources in the energy mix.

Recent Eurostat data shows that France, Ireland and the Netherlands are furthest away from their 2020 renewable energy targets.

While the portion of renewables in final energy consumption has increased from 9.2% in 2005 to 15.7% in 2016, France still needs to achieve a 23% national target by 2020 and 32% target by 2030.

Ahead of the updating of France's multiannual energy program in 2018, the auditors said there should be a more "concerted and coherent energy strategy", with the calculation of costs associated to the development of an energy mix that meets the country climate targets and support mechanisms designed accordingly. The parliament should be more involved in the process as well, auditors said.

8. Spain Urged to Tackle Maritime Emissions

The environmental impact of international shipping emissions in Spanish coastal areas should spur the government to join EU partners in creating a Mediterranean emissions control area (ECA), according to environmental campaigners. Measurements carried out in the straits of Gibraltar and the port of Barcelona revealed pollutant levels 70 times higher than background urban levels, Spain's Ecologistas en Acción and Germany's Nabu reported recently. Barcelona, which is the Mediterranean's number one destination for cruise liners, is particularly affected by pollutants from shipping.

While Spanish environment ministry data shows international shipping emitted 44% and 40% respectively of Spain's total SO_x and NO_x emissions in 2016, minimal action is being taken to tackle pollution from this sector compared to road transport or industry, the campaigners said.

The Spanish government has spoken against the creation of an ECA claiming the introduction of new International Maritime Organization (IMO) pollutant limits in 2020 will be sufficient to tackle the problem, Ecologistas spokeswoman María García told reporters.

The French ecology ministry, which backs a Mediterranean ECA, is hosting a conference in Paris designed to "identify the technical and legislative means to effectively reduce air pollution from shipping." A European Commission representative is due to attend the Paris conference and a commission feasibility assessment for an ECA in the Mediterranean and in other EU waters for both SO_x and NO_x is nearing completion.

The Commission supports the Mediterranean ECA initiative “due to the significant environmental and health benefits for EU citizens living in coastal areas or ports also in the west and southern parts of the EU,” according to an EU source. Because of maritime transport’s international nature, it is up to “the relevant riparian states to take the initiative under the existing framework of the IMO,” the sources told reporters.

9. Denmark Reconsiders Electric Car Subsidies

Denmark may be open to increasing financial incentives to buy electric cars after seeing a dramatic drop in sales of non-polluting vehicles, according to Prime Minister Lars Lokke Rasmussen. “We have tax incentives for electric cars, and you could discuss if they should be bigger. I will not exclude that,” Rasmussen said in an interview in Copenhagen. Any new incentives would be announced along with a government plan to boost clean-energy consumption after the summer, he said.

Danish sales of electric vehicles have fallen dramatically—from nearly 5,000 in 2015 to around 700 in 2017—since Rasmussen’s center-right government phased out subsidies such as those offered in Norway and Germany.

With diesel having fallen out of favor across Europe in the wake of the Volkswagen scandal, Denmark is now debating which vehicle types to promote and which to discourage.

The government has come under fire for its indiscriminate cuts to registration taxes, which have eroded incentives to buy green vehicles rather than those powered by fossil-fuels. Denmark has no car industry of its own and has one of the highest import duties in the world.

Adding to pressure on the government, the opposition Social Democrats grabbed the limelight recently by announcing plans to ban the sale of diesel vehicles by 2030, if they win elections due to be held by June 2019.

Rasmussen’s government unveiled plans to consolidate its reputation as a poster child for clean energy by announcing 12 billion kroner (\$2 billion) in funds earmarked to help it go fossil-free by 2050. The proposals include an 800-megawatt offshore wind park, which would be one of the world’s biggest, investments in bio-gas and a government tender that pitches different green technologies to compete on producing the cheapest electricity.

At the same time, Denmark is reducing subsidies on renewable energy, arguing that the technology is almost ready to stand on its own feet.

We’ve now reached a stage where “we can continue to build capacity without necessarily investing taxpayers’ money,” Rasmussen said. “This is the first time in Danish history that we can go green and cheaper at the same time.”

Denmark is home to the world’s biggest wind turbine maker, Vestas Wind Systems A/S, and Orsted A/S, the largest operator of offshore wind parks.

The government is also hoping that lowering taxes on electricity will encourage more people to ditch home heating based on fossil fuels. Last year, 43% of Denmark’s electricity consumption came from wind energy, a world record, with the ratio set to increase over the coming years.

Rasmussen said the goal is to make the economy greener and less vulnerable to swings in commodities markets. "That's why we're proposing to cut taxes on electricity, to raise demand and ensure that green energy is more competitive versus fossil fuels."

10. European Refiners Upbeat Despite Growing Electric Vehicles Buzz, Diesel Decline

European refiners are reportedly confident their fuels will remain in demand for decades to come despite electric vehicles beginning to eat into their key transport market and policies to improve air quality eroding regional sales of diesel cars. As expectations over a sooner-rather-than-later peak in global oil demand gains pace, refining industry players at a recent meeting in Brussels said they expect the thirst for liquid fuels will be supported by growing demand from aviation, heavy truck and shipping sectors and a rising need for petrochemical feedstocks such as naphtha.

"Liquid fuels, thanks to their superior energy density, will be required for the long term, in particular, for the aviation, marine and heavy-duty sectors where almost no sustainable alternative technology can be found," John Cooper, head of European refining industry group FuelsEurope told the eighth EU Refining Forum of industry and policy officials in Brussels.

The outlook is broadly borne out by most long-term forecasters. While total European oil demand will shrink to 6.5 million b/d by 2040 from 11.1 million b/d in 2017, according to the International Energy Agency, projections for global transport fuels demand remain firm.

Despite the long-term declines in oil use for passenger vehicles, the impact on fuel demand will be far offset by growing aviation, shipping, road freight and petrochemical demand, the IEA believes.

"Some may say that in the long-term diesel is dead, but this is the relatively far future," Stephen George, chief economist at energy consulting group KBC, said. "Today there is demand for middle distillates because of road haulage, aviation and bunkering as well as the passenger car fleet. That won't all disappear overnight; in fact, in some market segments it is likely to grow," he added.

The biggest change for Europe's refiners is the near-term outlook for global distillates demand after the tighter bunker fuel specification kicks-in from 2020. The International Maritime Organization (IMO) will tighten the global sulfur cap for marine bunker fuels to 0.5% from 2020, from the current 3.5%. The new regulation will require a major shift in the blendstocks used for bunker fuels, S&P Global Platts Analytics expects, initially creating a huge disposition issue for 3 million b/d of high sulfur fuel oil. That volume will be replaced by marine gas oil and various low sulfur blends of gasoil/residuals.

Diesel and jet cracks will grow sharply and even gasoline cracks will benefit as plants focus on middle distillate yields at the expense of light ends.

The IMO decision and other low-sulfur regulations are also set to support the margins of complex refineries, which can produce low-sulfur products, and undermine those of simpler or older plants.

"If the diesel market slows down, there will still be the bunker market after 2020. Currently Europe imports around 1 million b/d of diesel and in the short-term imports of gasoil could increase because of the IMO 2020 changes," George said. "Distillates will do very well after 2020. Not making fuel oil will be a huge margin boost, and distillates will strengthen on strong demand," he said.

Pushed by policymakers in Brussels, European refiners have spent billions of dollars upgrading their plants to produce cleaner fuels over the last two decades.

With European fuel demand in decline since 2005, the sector has grappled with painful downsizing and plant closures. European fuel makers have been spared further pain, supported by strong middle distillates margins due to a structural deficit in diesel.

But that palliative is also now evaporating as air quality concerns gather momentum with more European cities banning more polluting diesel cars. More vehicles are expected to use gasoline and electricity. Regional diesel sales have slumped since the 2015 VW emission scandal. Demand for new diesel cars in Britain plunged by more than a third year-on-year in March and diesel sales in Germany and France have also fallen -- albeit by a smaller margin.

But FuelsEurope's Cooper is adamant European refiners will still be called on to supply liquid fuels beyond 2050 as no viable alternative to the high energy density of hydrocarbon fuels is yet on the horizon.

According to data presented by Cooper, a Boeing 787 weighs 230 tons at takeoff, of which 100 MT is jet fuel. "If that is to be replaced by batteries, it will take 2000 MT of batteries," he added, noting that "it would take many new technologies to get electricity and batteries to replace jet fuel."

Equally, batteries would take significant loading space from vans and trucks, according to a presentation by ACEA, the European Automobile Manufacturers' Association. Electric trucks are also three times more expensive than the traditional ones relying on diesel and costs to the consumer need to be considered.

According to ACEA, improving the internal combustion engine and diesel technology will play a major role in the future CO2 reductions. The association expects that RDE-compliant Euro 6 diesel vehicles will be part of the options needed for reducing CO2 emissions.

Furthermore, some are questioning whether subsidies given for buying EVs should be instead aimed at owners of 20-year old diesel vans who could replace them with newer cleaner ones.

For now, 90% of the heavy-duty vehicles in Europe need to use diesel, which offers low fuel costs and high mileage crucial for transportation of heavy goods, according to a presentation by ACEA, at the Brussels conference.

Meanwhile, policymakers in the European Commission are keen to push ahead with higher penetration of EVs, help by its low-carbon plans and a package of incentives such as the installation of charging points at public car parks. The EU aims to be carbon neutral by 2050 as part of its long term decarbonization strategy and "the question is not if, but the question is how" we can achieve this, said Commissioner Miguel Arias Canete at the EU refining forum.

Refiners will need to invest in upgrades, retrofits or hydro-treating facilities to meet these ever-tightening standards. As more new, export-oriented refiners come on stream in the Middle East, the greater threat to European downstream earnings may be one of scale rather than margins.

Russian refiners have been upgrading and building hydrocrackers on a massive scale and with expanded pipeline capacity are poised for rising diesel exports to Europe.

Even if the battle between EVs and diesel cars remains a long- rather than short-term challenge for European refiners, growing diesel supply from upgraded or newly built refineries in Russia, the Middle East and Asia may cut into their margins and their utilization. Last year runs reached the highest since 2005, according to the IEA.

But as regional oil demand ebbs, European refining runs could slip from 13.3 million b/d in 2016 to 10 million b/d by end of the next decade. In this scenario, refining hubs East of Suez will be the winners, the IEA believes, with more than 11 million b/d of new capacity growth to 2040.

11. Former VW CEO Martin Winterkorn Indicted in U.S.

Former Volkswagen CEO Martin Winterkorn was charged in federal court in Detroit with conspiring to mislead regulators about the automaker's diesel emissions cheating. Winterkorn, 70, was listed for the first time with five other German Volkswagen executives originally charged in 2016, who the government believes are responsible for the company's diesel emissions scandal.

Winterkorn and the other five, Richard Dorenkamp, Heinz-Jakob Neusser, Jens Hadler, Bernd Gottweis and Juergen Peter, are in Germany, where they are safe from extradition to the U.S. under the German Constitution.

The indictment, filed in March under seal, was unsealed May 3rd in U.S. District Court. In court filings, U.S. Attorney Matthew Schneider says the indictment was unsealed "because there is no longer a belief that unsealing these documents will compromise an ongoing investigation."

The indictment alleges that Winterkorn specifically approved the efforts to mislead regulators about the falsified emissions claims. He has been charged with conspiracy to defraud the U.S., wire fraud and violating the Clean Air Act from at least May 2006 through November 2015 by using illicit software that allowed Volkswagen diesel vehicles to emit excess pollution without detection.

VW initially suggested that only lower level executives knew of the cheating. But the indictment alleges Winterkorn was informed of VW's diesel emissions cheating in May 2014 and in July 2015 and he agreed with other senior VW executives "to continue to perpetrate the fraud and deceive U.S. regulators," prosecutors said.

A spokeswoman for the U.S. Attorney's office in Detroit said Winterkorn was not in custody. In total, nine people have been charged and two have pleaded guilty in the case. One Italian citizen, a former Audi manager, is in Germany awaiting extradition. Six of the former Volkswagen executives charged are in Germany and have avoided facing U.S. prosecutors because Germany typically does not extradite its citizens.

12. VW CEO Is Said to Receive Rare Safe-Passage Deal from U.S.

Not long after U.S. authorities filed sealed charges against Volkswagen AG's old chief executive officer, they granted the new CEO a rare safe-passage deal. The Justice Department agreement allows Herbert Diess, promoted last month to lead the German automaker, to travel the world freely without fear of being arrested in connection with the U.S.'s diesel-rigging investigation, according to two people familiar with the matter.

Diess also received a spoken assurance that he would be given advance notice should prosecutors seek to charge him in its emissions cheating probe, said the people, who asked not to be identified because the deal is confidential. Diess, who joined the automaker a couple months before the scandal became public in September 2015, isn't accused of wrongdoing.

The agreement essentially makes it possible for Diess to effectively run the sprawling 12-brand behemoth, which has 120 factories spread across the world. As CEO, one of his primary tasks will be hopping around the globe to represent the automaker at major events such as car shows, plant openings and new model releases. The deal was approved after the former CEO, Martin Winterkorn, who won't enjoy the same freedom of movement, was indicted under seal in March. The charges against him were made public on May 3.

Former prosecutors and criminal defense lawyers described such a deal as uncommon—implying, possibly, that the U.S. believes it won't charge Diess, or that he may be providing useful information in the ongoing investigation.

The Justice Department agreement also suggests that Diess has some concern about potential scrutiny by U.S. authorities, or at least wanted extra insurance against being detained during his frequent travels leading a global company.

Volkswagen and the U.S. Department of Justice declined to comment when asked about the special arrangement for Diess.

Diess has spent more than two decades in the German auto business, including at Robert Bosch GmbH and BMW AG. As a fresh recruit at VW, Diess participated in a routine "damage table" meeting on July 27, 2015, in Wolfsburg, where emissions irregularities in the U.S. were explained to senior managers, according to a 2016 company statement.

That meeting was a key moment in the conspiracy—one where Winterkorn "approved the continued concealment of the cheating software from U.S. regulators," U.S. prosecutors said in the unsealed indictment against the former CEO. Winterkorn's defense team is reviewing the charges and will decide after that on the next steps, Felix Doerr, the former CEO's German defense attorney, said.

Because Diess attended that meeting, he would know what was said by Winterkorn and others when they were together in the room. Diess is already under investigation in Germany—along with Winterkorn—for possible market manipulation for not going public sooner about the scandal.

It's unclear what remarks, if any, Diess made at the gathering in question. Diess didn't help with the case against Winterkorn, according to the people familiar with the matter.

Prosecutors routinely use safe-passage letters with witnesses and subjects of investigations that allow travel for interviews or testimony. Lawyers for possible targets are sometimes allowed an opportunity to argue against prosecution ahead of any decision to bring charges. Prosecutors also sometimes give advance notice to those about to be charged if they're in the U.S. and not considered a flight risk, so they can turn themselves in rather than face public arrest.

But it's unusual for prosecutors to allow a blanket safe-passage agreement, former prosecutors said. It's also rare to offer to give a heads-up about impending legal action to someone who may be outside the country and couldn't be extradited easily, these people said.

One explanation for such an arrangement is that the Justice Department isn't finished investigating but has already determined that Diess is unlikely to be charged.

Among the eight individuals charged in the case, two have been brought to court. One executive, Oliver Schmidt, was arrested in Florida while vacationing there last year. Schmidt—one of two employees who made presentations to Winterkorn, Diess and others at the July 2015 meeting—didn't initially cooperate with investigators. He later pleaded guilty and was sentenced in December to seven years in prison.

As for Winterkorn, Germany's Justice Ministry said on May 4 that the former CEO wouldn't be sent to the U.S. because the country refuses to extradite its citizens to countries outside the European Union. That means Winterkorn can't be arrested unless he leaves his home country.

13. Senior Porsche Manager Reportedly Detained in Germany Over Dieselgate Scandal

Senior manager of German automaker Porsche AG Jorg Kerner was detained by German police in connection with the so-called Dieselgate scandal involving the manipulation of emission test results, local media reported recently. At the request of the Stuttgart prosecutor's office, Kerner was placed in a detention facility so that he would not be able to escape or "cover his tracks," the Bild newspaper said, adding that Kerner potentially could have played a key role in the manipulation of emission test results.

German law enforcement agencies searched Porsche's facilities in connection with the scandal. A total of 33 prosecution officers and 160 policemen were involved in the raids, which were conducted at 10 of the automaker's facilities in the states of Baden-Wuerttemberg and Bavaria.

Last July, the German Transport Ministry stated that illegal software which hides real levels of emissions had been found in Porsche cars. The company was forced to recall 22,000 Cayenne cars with three-liter diesel engines registered in Europe. The Stuttgart prosecutor's office launched a probe against unknown employees of Porsche AG and its US subsidiary in connection with the scandal.

14. Bosch Offers Hope for the Future of Diesel

A new development in diesel engine technology could drastically reduce NOX emissions, it has been claimed. Engineering firm Bosch says its new system can deliver NOX levels around ten times lower than those required even by new, more stringent limits set to come into force in two years' time.

Currently, European legislation requires new passenger cars emit no more than 168mg/km of NOX, and this limit is set to be cut to 120mg/km in 2020.

However, Bosch says cars equipped with its new technology can achieve as little as 13mg/km in standard Real Driving Emissions (RDE) tests. Even if the cars are driven in challenging urban conditions, in excess of legal requirements, the average emissions of test vehicles are as low as 40mg/km.

Bosch says its technology can provide a road to recovery for diesel cars, which have seen slumping market demand, due to uncertainty over lawmakers' response to emissions concerns.

Bosch says its system is based on components that are already on the market and, therefore, it is available to manufacturers immediately. It says the use of existing technology also means diesel cars should not become less affordable, while fuel economy and CO2 emissions are not negatively affected.

Explaining the technology, a spokesperson said an important factor that has hindered the reduction of diesel NOX emissions is driving style, which its system addresses.

A spokesperson said, "A dynamic driving style demands an equally dynamic recirculation of exhaust gases. This can be achieved with the use of an RDE-optimized turbocharger that reacts more quickly than conventional turbochargers. Thanks to a combination of high and low-pressure exhaust-gas recirculation, the air-flow management system becomes even more flexible. This means drivers can drive off at speed without a spike in emissions."

An equally important issue, according to Bosch, is temperature. The spokesperson explained, "To ensure optimum NOX conversion, the exhaust gases must be hotter than 200°C. In urban driving, vehicles frequently fail to reach this temperature. "Bosch has therefore opted for a sophisticated thermal management system for the diesel engine. This actively regulates the exhaust-gas temperature, thereby ensuring the exhaust system stays hot enough to function within a stable temperature range and that emissions remain at a low level."

NORTH AMERICA

15. OMB Said to Rebuff Final EPA Glider Plan Due to Lack Of RIA

The White House Office of Management & Budget (OMB) is rejecting an EPA draft final rule that would scrap production limits of "glider" trucks that do not meet modern emissions standards, on the grounds that EPA had yet to craft a regulatory impact analysis (RIA) detailing the pollution impacts of the plan, according to a news report.

The report in the conservative Daily Caller is the latest indication that federal officials have been working behind the scenes to shore up the legal and technical basis for the controversial plan. But it also indicates more specifically that the agency has continued to skip a routine regulatory step to quickly get a final plan out the door. EPA did not issue an RIA in tandem with its proposed repeal of the glider rules, an analysis that would have required a detailed look at the costs that would result from increased pollution from such trucks.

The report quotes three sources indicating OMB rejected the glider repeal before it was formally presented to the office, with OMB telling EPA to do a RIA. The report also suggests that agency staff had initially "slow walked" the move to finalize the controversial plan, with a source calling this surprising given the EPA effort to justify its plan based on legal arguments that the agency never had the authority to regulate the gliders as "new" vehicles in the first place.

But the proposal has also spawned massive blow back from much of the trucking sector and increasingly Hill Republicans, not only on legal but also on substantive grounds -- with critics arguing it could result in significant pollution increases and undercut industry investments in trucks that meet modern pollution standards.

The report states that the need to conduct an RIA could delay the EPA draft final rule by roughly a month.

16. Recent Developments Regarding Light Duty Vehicle GHG Emissions in the US

EPA Orders Revision of Standards, May Revoke California's Waiver

The Trump administration announced that fuel-efficiency regulations for cars and light trucks are too stringent and must be revised, formally beginning a process sought by the U.S. auto industry to roll back anti-pollution targets. The EPA also said it was considering whether to revoke the waiver that allows California to set its own emissions requirements that exceed the federal standards.

The greenhouse gas emission standards that were a signature element of President Barack Obama's climate-change policy are too aggressive, U.S. Environmental Protection Agency chief Scott Pruitt said in a statement on April 2 outlining the decision.

"The Obama EPA's determination was wrong," Pruitt said in a news release. "Obama's EPA cut the midterm evaluation process short with politically charged expediency, made assumptions about the standards that didn't comport with reality and set the standards too high."

Pruitt's so-called final determination is a step needed to dial back the Obama-era rules, which aimed to slash carbon emissions from cars and light trucks by boosting fuel economy to a fleet average of more than 50 miles per gallon by 2025. That standard is equivalent to roughly 36 mpg in real-world driving.

In the statement, Pruitt said the agency would begin drafting fresh auto standards for 2022-2025 alongside the National Highway Traffic Safety Administration.

The EPA's announcement echoed criticisms expressed by automakers, saying the Obama Administration short-circuited the process and rushed out their final determination just days before leaving office. "This was the right decision, and we support the administration for pursuing a data-driven effort and a single national program as it works to finalize future standards," the Alliance of Automobile Manufacturers said in a statement. "We appreciate that the administration is working to find a way to both increase fuel economy standards and keep new vehicles affordable to more Americans."

The decision also puts the Trump administration's tenuous relationship with California officials on an even rockier path. The state has its own car and truck efficiency standards aligned with the Obama-era targets, made through an agreement reached in 2011 with the support of nearly all major automakers. "The California waiver is still being reexamined by EPA under Administrator Pruitt's leadership," the agency said. California has been writing its own clean-air rules since 1970, as part of the state's bid to crack down on smog.

California officials have vowed to resist a Trump-led rollback of the federal targets.

Under the Clean Air Act (CAA), EPA sets national standards for vehicle tailpipe emissions of certain pollutants. Through a CAA waiver granted by EPA, California can impose stricter standards for vehicle emissions of certain pollutants than federal requirements. The California waiver is still being reexamined by EPA under Administrator Pruitt's leadership.

"Cooperative federalism doesn't mean that one state can dictate standards for the rest of the country. EPA will set a national standard for greenhouse gas emissions that allows auto manufacturers to make cars that people both want and can afford — while still expanding

environmental and safety benefits of newer cars. It is in America's best interest to have a national standard, and we look forward to partnering with all states, including California, as we work to finalize that standard," said Administrator Pruitt.

CARB's Nichols Urges Automakers to Pressure Trump on Vehicle GHG Deal

California's top air regulator is urging automakers to pressure the Trump administration not to move forward with a "wholesale rollback" of Obama-era vehicle greenhouse gas and fuel economy limits, arguing it is in their interest to help find a "negotiated" solution between the state and federal officials. "I am still of the view that there could be an agreement with the Trump administration, if the auto companies will use their considerable political and economic influence" to persuade the Trump administration to reach a deal, Mary Nichols, chairwoman of the California Air Resources Board (CARB), said during an April 19 event hosted by the American Law Institute Continuing Legal Education (ALI-CLE).

Such a deal would "try to make the standards more usable, something [automakers] feel they can comply with more readily, as opposed to doing the wholesale rollback that the administration is threatening," she added.

Nichols also reiterated and elaborated to some extent on the state's policy priorities of extending standards beyond model year 2025, while also being open to "modifications" that increase flexibility for automakers in the short term in part by boosting credits for zero-emission vehicles (ZEVs).

As such, she appeared to be trying to isolate Trump administration officials by aligning California's stance more closely with automakers. "California has indicated several times that we are open to seeing some modification in the program," which is jointly operated by EPA, the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) and CARB.

Meanwhile, automakers' "number one goal is to have a single national program they can work toward, rather than building cars for two separate standards," she said, suggesting that the industry would also like to see a negotiated agreement rather than California enforcing tougher rules in response to a Trump rollback.

Nichols also reiterated California's stance that its special Clean Air Act waiver which allows it to enforce state GHG limits that are tougher than the federal government's is "still intact and it can't be taken away retroactively."

Given that waiver, any "wholesale" federal rollback would likely be met with CARB splitting off from the program and developing GHG standards for it and nearly a dozen other states that follow its rules under the air law. Those states represent roughly a third of the domestic auto market.

In addition, such a federal rollback would be met with "years of litigation and other forms of warfare," Nichols predicted. "We think that there's good reason for everybody to sit down and try to work out some accommodation here."

Some auto industry officials, including top officials at Ford and Honda, have denied they are seeking a "rollback" of the standards but rather want "flexibility," which can include greater use of compliance credits that are generated via installation of "off-cycle" technologies and to streamline overlapping requirements.

A spokeswoman for Alliance of Automobile Manufacturers agreed on the need for a deal. “We see there are benefits for all the parties working together,” Gloria Bergquist told the press. “We can continue environmental progress while meeting consumer needs for affordable transportation and protecting auto jobs. It is good news that all the stakeholders are still exploring the best way forward,” she added.

She noted that the industry is subject to “three distinct regulators -- DOT, EPA and California -- and duplicative regulatory actions only raise costs to our customers, so we still support One National Program.”

Her comments come amid several public indications pointing to the possibility of a massive legal fight between Trump officials and California on the issue. (See story above regarding California suit.)

Amid the public rancor is the forthcoming departure of a key White House environmental aide, Mike Catanzaro, who some have seen as a moderating influence who sought a compromise between the warring factions.

Regarding post-MY25 rules, Nichols told the ALI-CLE event that “everyone who has looked at the trajectory of the auto industry” agrees on the need to shift to greater ZEV deployment, given the transportation sector's major role in GHG emissions.

As such, she said rule provisions should be crafted in a way that encourages production and sales of such vehicles.

“Why not look at this whole regulatory program from the perspective of where we're trying to go?” she said. Officials should not “just posture about who's going to have stricter or weaker standards” but should “actually have standards that work with what the industry is actually trying to accomplish. That means set of standards that would help ease them in the direction of getting more credit and more incentive to go to zero emissions.”

Nichols has previously floated the notion of extending a provision in the rules -- slated to expire in MY21 -- that would assign zero emissions to ZEVs for the electricity that is used to power such vehicles. However, her comments suggest she would be willing to entertain other ZEV-related changes to the rules.

Draft Plan Would Block California Vehicle GHG Rules, Freeze Limits at MY20

A draft of a long-expected proposed rule to scale back light-duty vehicle greenhouse gas and fuel economy standards would massively roll back the program and precipitate a landmark legal and political battle with California and its allies, in part because it would seek to block California's power to impose stronger requirements than the federal government.

The plan, described to the press by a source who has seen the document, outlines a “preferred” regulatory approach that would scrap prior talk of confining major changes to the program to model years 2022-2025 by calling for freezing the program at MY20 stringency levels through MY26.

It would also push back against efforts by California and other states to retain the current program, relying on a legal claim that the Energy Policy and Conservation Act (EPCA) -- which authorizes the National Highway Traffic Safety Administration's (NHTSA) fuel economy rules -- preempts

states from implementing fuel economy rules that are essentially equivalent to carbon dioxide limits.

EPA and California currently enforce GHG standards through separate authority under the Clean Air Act -- authority that has been affirmed, at least at the federal level, by the Supreme Court.

It is still possible that the proposal, which includes eight regulatory scenarios, will change as it undergoes inter-agency review.

Even the least aggressive rollback in the draft would significantly scale back the program, requiring about a 2 percent increase in fuel economy for cars and 3 percent for trucks annually, compared to an over 4 percent improvement for cars and trucks envisioned under the current MY 22-25 program. The document appears to be written as coming from both EPA and NHTSA, though it makes clear NHTSA “mostly has the pen.”

The draft plan does not explicitly seek to revoke California's Clean Air Act waiver authority to regulate GHGs, though it argues that the state is nevertheless preempted from regulating fuel economy, which it claims is tantamount to carbon dioxide controls.

The use of EPCA to push back against strong GHG requirements being implemented by California and other states appears to precisely echo calls from groups such as the Competitive Enterprise Institute for just such an approach. That group in July 2017 urged the administration to “explore the legal implications of the Energy Policy and Conservation Act (EPCA), which prohibits states, like California, from adopting or enforcing law or regulations 'related to fuel economy standards.'”

Legal experts are sharply pushing back against this argument, noting that numerous federal courts have already rejected such claims.

The preemption arguments and the new state litigation underscore that the Trump administration, industry, environmentalists and states seem headed for a years-long legal battle over vehicle GHG and fuel economy programs.

Senate Environment and Public Works Committee ranking member Tom Carper (D-DE), in a May 1 letter to EPA Administrator Scott Pruitt and Transportation Secretary Elaine Chao, announced that he had obtained a copy of the draft plan and summarized its contents, including its assertion that EPCA preempts California's rules and its “preferred” regulatory scenario would freeze the vehicle program at MY20 stringency levels through MY26.

“I urge you to immediately disavow this proposal and instead work to negotiate a 'win-win' solution on federal fuel economy and greenhouse gas tailpipe standards that can be supported by both the automobile industry and the state of California,” he writes.

Other reaction from legal experts to the plan, and particularly its EPCA argument, has been swift and sharply critical.

Pruitt “will apparently argue that EPCA allows NHTSA to override California's waiver” under the Clean Air Act, University of California-Los Angeles law school professor Ann Carlson writes in an April 27 blog post. “This argument is frankly ridiculous.” Carlson notes that California's standards do not regulate fuel economy but rather GHGs. “Moreover, nowhere in the EPCA is NHTSA given the authority to override California's waiver, and nowhere does the statute say that NHTSA's authority 'supersedes' California's special waiver authority under the Clean Air Act.”

A similarly critical reaction to the draft Trump legal arguments surfaced in an April 29 tweet from Harvard Law School's Jody Freeman, a former energy and climate change adviser in the Obama White House. "Bold [arguments] to this effect have already been rejected by two federal courts," she writes.

Carlson, Freeman and others cite in particular two 2007 federal district court cases -- as well as the landmark 2007 Supreme Court climate change case *Massachusetts v. EPA* -- as indications of the legal gauntlet the Trump administration faces should it move forward with the draft plan.

The high court in its April 2007 ruling ratified federal authority to regulate GHG emissions under the Clean Air Act, while also specifically rebuffing claims that EPA vehicle GHG rules would conflict with the Department of Transportation's (DOT) fuel economy authority. "The fact that DOT's mandate to promote energy efficiency by setting mileage standards may overlap with EPA's environmental responsibilities in no way licenses EPA to shirk its duty to protect the public 'health' and 'welfare,'" the high court wrote in its 5-4 decision.

Just months later in September, the U.S. District Court for the District of Vermont in *Green Mountain Chrysler v. Crombie* directly addressed the issue of whether state GHG vehicle programs are preempted by EPCA, finding they are not. Judge William Sessions noted in that case that Congress "remained well aware of a potential conflict between tighter air pollution control standards and improved fuel economy" when it amended the Clean Air Act in 1977 and allowed California to adopt stricter emission controls than the federal government.

Sessions also added that EPCA requires NHTSA itself to analyze four factors when setting efficiency standards, including the effect of "other Federal motor vehicle standards." He added that once California receives an air act waiver to develop its own standards, those state rules acquire a similar stature, further supporting the finding that they are not preempted by EPCA.

In December of that year a California federal district court squarely addressed the Golden State's standards. In that ruling, *Central Valley Chrysler-Jeep v. Goldstone*, Judge Anthony Ishii held that "there is no necessary conflict between the Clean Air Act's purpose to protect health and welfare and EPCA's purpose to establish maximum feasible fuel efficiency standards." Ishii cited the *Massachusetts* holding that EPA's GHG standards are not preempted under EPCA to argue that California's GHG standards are also not preempted for the same reasons.

It "would be the very definition of folly if EPA were precluded from action simply because the level of decrease in greenhouse gas output is incompatible with existing mileage standards under EPCA."

Freeman said that the "takeaways" from the two district court cases are that state vehicle standards approved by an EPA waiver become "federal" standards under the Clean Air Act -- and thus cannot be preempted under EPCA -- and that NHTSA must account for "other federal standards" when setting fuel economy limits.

Additionally, even if one were to assume that the state standards are not "federalized," she writes, there is still "no conflict here" that would justify EPCA preemption claims against the state standards. Pollution standards, set in grams per mile, and fuel efficiency standards, set in miles per gallon, "are aimed at different problems, and can live comfortably together," Freeman said. "That is precisely what the Supreme Court said in *Massachusetts v. EPA* and it is precisely what the two agencies have demonstrated since 2010."

Freeman acknowledged that the questions presented in the district court cases have not reached a federal appeals court yet but called both decisions “carefully reasoned” and the preemption analysis “solid.”

Harvard Law's Joe Goffman, who served as a senior EPA air office adviser during the Obama administration, similarly told the press that he does not see any route for the Trump administration to avoid confronting that California's rules address GHG emissions, which is legally independent of fuel economy. “They can make the state argument” and persuade themselves it is novel, but they still “end up in the same box,” Goffman said.

Carper in his recent letter to Pruitt and Chao criticizes the administration's draft legal reasoning on EPCA and more broadly argues that freezing the vehicle program at MY20 levels would be illegal because it would skirt NHTSA's statutory obligation to set fuel economy standards at “maximum feasible” levels.

“[T]he proposal apparently assumes that automotive technology and innovation will come to a complete halt for the better part of a decade,” he writes.

Regarding preemption, Carper says the plans statements are “starkly contradicted by the body of case law interpreting the interplay between EPCA, [the Clean Air Act], State waivers under the [air law], and the legislative history of both acts.”

California, 17 Other States Sue To Defend GHG Rules for Vehicles

On May 1, eighteen states sued the Trump administration over its push to “reconsider” greenhouse gas emissions rules for the nation's auto fleet, launching a legal battle over one of the Obama administration's most significant efforts to address climate change. Environmental Protection Agency Administrator Scott Pruitt in April said he would revisit the Obama-era rules, which he claims are “based on outdated information” and that new data suggest “the current standards may be too stringent.”

But in the lawsuit, the states contend the EPA acted “arbitrarily and capriciously” in changing course on the greenhouse gas regulations. “This phalanx of states will defend the nation's clean car standards to boost gas mileage and curb toxic air pollution,” California Gov. Jerry Brown (D) said in a statement announcing the suit, which was filed in the U.S. Court of Appeals for the D.C. Circuit.

As noted above, the Trump administration has drafted a proposal that would freeze the federal standards at 2021 levels. The plan would also challenge California's ability to set its own fuel-efficiency rules.

The state has a separate set of standards that, due to its massive car market, have pushed automakers to produce more fuel-efficient vehicles. According to figures from the California New Car Dealers Association, California's 2.048 million new car sales in 2017 represented about 12 percent of the 17 million-plus cars sold in the United States last year. Other states participating in the lawsuit — including New York — have set their own emission standards in line with California. The total market involved is 36 percent of sales in the United States, according to Margo Oge, a former EPA official who helped the agency set auto regulations during the Obama years.

“If you are a car company, that is a pretty big deal. You have uncertainty how this thing is going to work out, and today you have to be investing, in cars you’re going to build 5 years from now,” she said.

Since the current standards were created under a 2011 agreement reached among the Obama administration, California officials and automakers the transportation sector has outstripped electric power to become the top source of greenhouse-gas emissions in the United States.

What Will Canada Do When EPA Relaxes Requirements?

Canada’s greenhouse gas (GHG) emissions regulations for passenger vehicles currently adopt by default the standards of the US Environmental Protection Agency (EPA). Since this marriage in 2012, Canada and the United States have been linked closely together. But Canada-US cooperation on vehicle standards hit a speed bump on April 2, after Scott Pruitt, administrator of the EPA, announced a reopening of the midterm evaluation for GHG emissions standards for cars and light trucks for model years 2022 to 2025, stating that current standards are not appropriate and should be revised. The Trump administration’s intentions with this review are clear: to weaken GHG emissions and fuel economy standards for automobiles.

California and 15 other states plus Washington, DC, have the right to set their own emissions standards under section 177 of the US Clean Air Act. The response from California Governor Jerry Brown was unequivocal: he called the EPA’s decision a “cynical and meretricious abuse of power” that will “jeopardize the health of all Americans.” Similarly, responses from other states were swift and made it clear they were ready to stand and fight.

To keep Canada’s regulations strong and achieve it’s 2030 emissions targets, Canada needs to split from the US federal regulations or consider cozying up to California, to maintain the current stringency of the standards to 2025.

The Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations were published in October 2010. They establish progressively more stringent GHG emissions standards for new light-duty vehicles sold in Canada in model years 2011 to 2025, in alignment with the US national standards.

The regulations are flexible, providing automobile manufacturers with several options to comply with average emissions reduction targets for their fleets: for instance, they can generate and earn credits for overcompliance or for selling more zero-emissions vehicles. Thus, the regulations also help Canada achieve the goal of putting more zero-emissions vehicles on the road.

The transportation sector contributes a quarter of Canada’s total GHG emissions. It is expected that Canada will add more than 2 million passenger vehicles in 2018. Canadian consumers are also choosing to buy heavy, high-emitting vehicles. Light trucks represent over 70 percent of new vehicles sold annually in Canada.

This is why vehicle emissions regulations are so important. Under current regulations, Canadian consumers can be assured that their next vehicle will be more fuel efficient than the previous one. It is projected that cars for model year 2025 will consume up to 50 percent less fuel than 2008 models. According to Environment and Climate Change Canada, “On average, a Canadian driving a model year 2025 vehicle will realize fuel savings of around \$900 per year compared to driving today’s new vehicles.”

For the first five years of the regulations (2011 to 2015), Environment and Climate Change Canada reported overcompliance with the regulations by the industry, with the average GHG emissions for the fleet consistently lower than the prescribed standards in the regulations. Evidently, automobile manufacturers have developed and deployed a variety of advanced technologies and innovations to reduce emissions. The ability to earn and bank credits for overcompliance is an important aspect of the regulations and helps manufacturers to transition to the stricter standards for the 2017-25 model years. It allows manufacturers to plan and implement an orderly phase-in of emissions control technology.

Concerns about high costs of compliance have been consistently overstated. Developments reported by suppliers suggest that costs for some of the new technologies will decline by hundreds of dollars, and electric vehicle costs will drop by thousands of dollars per vehicle by 2025. Research in 2017 by the International Council on Clean Transportation (ICCT) demonstrates that “compliance costs for the adopted 2025 standards will be 34% to 40% lower than projected in the latest U.S. midterm evaluation regulatory analysis.”

The ICCT’s research also demonstrates that the current standards “can be achieved cost-effectively. Such standards would result in modest, gradual vehicle price increases through 2030, and with two to three times greater consumer fuel savings than costs” (emphasis added). The current standards “could be achieved mostly with advanced combustion technology, while also spurring growth in the plug-in electric vehicle segment of the market.”

Canada-specific regulations to maintain the current schedule of emissions targets would ensure that Canadian car manufacturers can compete in the global low-carbon economy and save consumers money.

17. Power Sector GHGs Continue Drop but Transportation Rising

Continued reductions in power sector greenhouse gas due to shuttering of coal-fired power plants drove a decline, albeit at a slower pace than in previous years, in total U.S. greenhouse gas emissions in 2017, though the reductions were offset by large increases in the transportation and other sectors, according to a new analysis based on recent government data.

The March 29 analysis by the Rhodium Group builds on earlier estimates the group issued in January that were preliminary data from the Energy Information Administration (EIA) on domestic carbon dioxide from 2017. The highlight of the earlier finding is that while domestic GHG emissions continued to fall, the pace of the decline slowed from an annual average 1.3 percent between 2005 and 2016, to less than 1 percent in 2017.

Rhodium researchers Trevor Houser and Peter Marsters say the final EIA numbers released recently align with their preliminary estimate from January and conclude that energy-related carbon dioxide emissions dropped by 0.66 percent last year -- which is half of the annual rate of decline from 2005 to 2016.

While power sector emissions continued to drop, “emissions from the transport, buildings and industrial sectors all grew, offsetting half the decline in the power sector. Growth in aviation emissions alone offset more than one third of the emissions decline from falling coal use in the electric power sector,” the report says.

The findings come as the Trump EPA is poised to significantly call for weakening Obama-era GHG emission cuts from passenger vehicles for model years 2022 through 2025 and may be opening the door to other countries following suit.

In addition, the International Civil Aviation Organization (ICAO) faces a June deadline to establish implementation rules for a first-time agreement to cut aviation GHGs. EPA is said to be moving to “quickly” issue GHG rules for new U.S. aircraft consistent with the ICAO agreement.

The Rhodium analysis notes that if the United States is to meet its United Nations Paris Agreement target to reduce GHGs by 26-28 percent from 2005 levels in 2025 -- a step the Trump administration is declining to take -- “the U.S. will need to do considerably better -- a 1.7 to 2 percent annual reduction will be required.”

EIA predicted in February that U.S. energy sector CO2 emissions would rise 1.8 percent this year, and then remain virtually unchanged in 2019, which would be about 13 percent lower than 2005 levels. The reasons for the increase include a strong economy, greater energy demand and low gas prices, Bloomberg reported Feb. 9.

The predicted uptick comes even as cleaner-burning natural gas and renewable energy replaces coal-fired power plants.

The new Rhodium analysis says even though energy CO2 is dropping, it remains the largest source of GHGs in the United States and around the world. It cites EPA's most recent GHG inventory, from 2015, to note that energy-related CO2 emissions accounted for 77 percent of gross U.S. GHG emissions, with the remainder coming from direct emissions in industrial processes as well as emissions of methane, nitrous oxide and other GHGs.

The power sector decline was due to slower demand growth and fuel switching from coal, and that between 2005 and 2016 almost 80 percent of the energy GHG cuts were from the electric power sector. Improved building efficiency and appliances helped flatten electricity demand, while coal lost market share to natural gas and renewables.

That trend continued last year, but the one big difference in 2017 compared to previous years is that both natural gas and coal generation declined, displaced by growth in hydro, wind and solar.

Meanwhile, transportation sector emissions are rising, with total vehicle miles traveled in the United States increasing 1.2 percent last year -- a lower rate than 2015 and 2016 but when combined with flattening fuel economy progress, “it was enough to result in a modest emissions increase.” That also made 2017 the second consecutive year where transportation emissions were higher than power generation emissions.

Within the transport sector, gasoline demand was relatively flat, and gasoline-related emissions dropped slightly, the pace of decline was half of the 2005-2016 average annual rate. Simultaneously, diesel emissions grew by 6 million metric tons. These increases could continue because of Trump EPA efforts to roll back Obama GHG standards for both passenger cars and large trucks.

Rhodium notes that the biggest transportation emissions increase was in jet fuel, due to robust air travel growth. The 9.2 million metric ton increase in aviation emissions last year offset 40 percent of the coal-related emissions decline over the same period.

Additionally, Rhodium says industrial emissions are also on the rise, and grew 10 million metric tons in 2017, prompting the authors to predict that the industrial sector will soon overtake the power sector as the second leading source of GHGs in the U.S.

The study also finds that to achieve the Paris targets of keeping global average temperature increases to below 2-degrees Celsius, “an even faster rate of decarbonization is required” than what has been achieved.

Rhodium concludes that GHG reduction policies at the state and city level “could potentially accelerate last year’s pace of emission reductions, while recent federal regulatory changes could slow that progress.”

18. America's Great Strides in Cutting Smog at Risk of Being Eroded, Experts Warn

America’s leading cities have some of the cleanest urban air in the world, but huge advances made in reducing smog are in danger of falling backwards, experts are warning. New Yorkers breathe air that is 800 times less polluted than Delhi’s and twice as clean as in London and Berlin, the World Health Organization reported.

Nine out of 10 people around the world are breathing in high levels of pollutants. This amounts to a sprawling health crisis that causes about 7 million deaths a year, according to the latest global data from the WHO, which warned that air pollution inequality between the world’s rich and poor is widening.

Many of the luckier one in 10 people are found in US cities such as New York, Miami and Boston. Here, air quality has improved dramatically since landmark environmental regulations in the 1970s started to disperse the choking smogs that commonly lingered there and over cities such as Los Angeles, confining people indoors on warm days, the WHO said.

But US scientists and public health officials have warned that the stunning improvements in American cities have already starting to slow and are even in danger of reversing. They point to diminishing returns from existing regulations and the Trump administration’s zeal in demolishing recent rules designed to improve air quality and combat climate change.

“The actions of this administration are extremely counterintuitive and worrying,” said Christine Todd Whitman, who was administrator of the Environmental Protection Agency (EPA) under president George W Bush. “Time will be lost, pollution will be increased, and lives will be endangered. It’s not that we will turn into Beijing or Delhi tomorrow, but people take clean air for granted now and we can’t slide back to the smogs we once had.”

In New York, levels of haze-causing airborne particles called PM2.5, expelled from vehicle exhausts and power plants, are about 800 times less than they are in Delhi, where the air is considered a significant risk to human health, the WHO found. New York also compares well to Berlin and London. Those cities have struggled with a major air pollution problem and have PM2.5 levels around double that of the US metropolis – referring to microscopic atmospheric particulate matter.

Enforcement of the Clean Air Act to reduce harmful emissions from heavy industry and transportation has seen levels of the six most common air toxins, including lead and particulate matter, drop by 50% in the US since 1970 despite growth in population and economic activity,

according to the EPA. These six pollutants can cause or worsen a host of health issues, ranging from runny eyes to asthma and heart disease.

However, this progress has slowed in recent years. A new analysis of satellite data by the National Center for Atmospheric Research found that reductions in pollutants that cause ground-level ozone, or smog, “slowed down dramatically” between 2011 and 2015.

This slowdown, of around 76% compared to 2005 to 2009, is sharper than is shown in EPA data, which typically uses ground-level monitoring. The study’s authors suggest the lagging progress could be down to decreasing relative contributions from vehicle emissions reduction technology and a worse than expected impact from heavy duty diesel trucks.

“More reductions are still necessary – ozone is still too high in many places in the US,” said Noelle Eckley Selin, an air pollution expert at the Massachusetts Institute of Technology, who wasn’t involved in the study. “Continued improvement is not a given even with existing regulations; repealing relevant standards could even make air quality worse. Policies that repeal emission standards and encourage more fossil fuel use move us in the wrong direction for air quality and human health.”

Concern over a regression in air quality stems from a whirlwind of deregulation instigated by the EPA under administrator Scott Pruitt, a self-described opponent of the “activist agenda” of the regulator.

The clean power plan, the centerpiece of the Obama administration climate change effort, is in the process of being dismantled, with Pruitt claiming that it improperly uses clean air laws to curb emissions from coal fired power plants. The EPA previously estimated that the plan would prevent 3,600 premature deaths, 1,700 heart attacks and 90,000 asthma attacks per year.

Pruitt has also overseen attempts to delay or scrap vehicle emissions rules, new regulations to prevent the release of methane from oil and gas drilling operations and the implementation of smog standards. The agency is also erasing requirements that companies continue to use pollution reduction methods once emissions dip below a certain level.

“This agenda is very detrimental. It will slow progress and, in some instances, make things worse,” said George Thurston, who specializes in environmental hazards at the New York University School of Medicine. “The problems won’t be evident to the average person, because people have heart attacks and asthma attacks for various reasons. But that harm will be there, it will happen.”

Thurston said the reversals could even hamper air quality improvements overseas. “The US is showing a failure of leadership,” he said. “If the developing world sees we are not serious about climate change and air pollution, they will be less willing to do something. It’s really irresponsible on the part of the administration.”

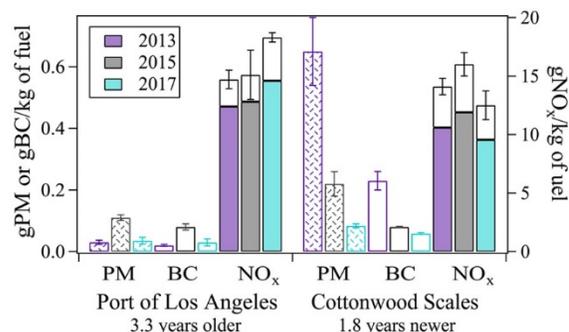
It remains unclear how successful Pruitt’s EPA will be in repealing its targeted regulations, given stiff resistance from environmental groups and some states via the courts. The agency didn’t respond to a request for comment on its agenda.

On Tuesday, the EPA revealed that 51 areas in 22 states do not meet ozone standards, after being ordered by a federal court not to delay the publication of its assessment. The administration is facing a further fight after 17 states, led by California and New York, sued to protect California’s waiver to enforce stricter vehicle emissions rules than the federal standard.

“The administration will lose in court over a lot of these regulations because you can’t just get rid of them on a whim,” said Whitman. “What will be lost, though, is the institutional knowledge at the EPA. A lot of people are leaving in frustration and young people looking for a career are hardly looking to the EPA because it’s deemed unimportant. The damage has been done.”

19. NO_x, PM Emission Trends Measured for In-Use Heavy-Duty Vehicles in CA

Two California heavy-duty fleets have been measured in 2013, 2015, and 2017 using the On-Road Heavy-Duty Measurement System.¹ The Port of Los Angeles drayage fleet has increased in age by 3.3 model years (4.2–7.5 years old) since 2013, with little fleet turnover. Large increases in fuel-specific particle emissions (PM) observed in 2015 were reversed in 2017, returning to near 2013 levels, suggesting repairs and or removal of high emitting vehicles. Fuel-specific oxides of nitrogen (NO_x) emissions of this fleet have increased, and NO_x after-treatment systems do not appear to perform ideally in this setting. At the Cottonwood weigh station in northern California, the fleet age has declined (7.8 to 6 years old) since 2013 due to fleet turnover, significantly lowering the average fuel-specific emissions for PM (–87%), black carbon (–76%), and particle number (–64%).



Installations of retrofit-diesel particulate filters in model year 2007 and older vehicles have further decreased particle emissions. Cottonwood fleet fuel-specific NO_x emissions have decreased slightly (–8%) during this period; however, newer technology vehicles with selective catalytic reduction systems (SCR) promise an additional factor of 4–5 further reductions in the long-haul fleet emissions as California transitions to an all SCR-equipped fleet.

20. EPA Air Chief Plans to Speed NAAQS Reviews Using 'Close Enough' Data

EPA air chief William Wehrum plans to accelerate the long-delayed national ambient air quality standards (NAAQS) review process by reducing some scientific advisory input and accepting data that is “close enough” to justify a review rather than “perfect,” suggesting Supreme Court precedent would allow the changes. In a keynote address to the American Bar Association’s Section of Energy, Environment and Resources spring conference on April 19, Wehrum said he sees a need to revisit EPA’s approach to NAAQS reviews given its chronic failure to meet the Clean Air Act’s requirement of reviewing each existing standard every five years.

He added that the “close enough is good enough” concept could provide a new framework for the process.

Speaking to reporters after his address, Wehrum said he is trying to avoid a situation where EPA’s quest for “perfect” understanding of the science on any particular pollutant leads to unreasonable delays on new NAAQS decisions.

“The agency historically has tried to do, as they should, the very best job they can . . . in understanding the science and applying the science to the decision-making,” he said. “The only

¹ Molly J. Haugen and Gary Bishop, Department of Chemistry and Biochemistry MSC 9020, University of Denver, Denver, Colorado 80208, United States, published in Environ. Sci. Technol.

point I was making is that you can take that to a fault. So, you obviously need to look at all the science, you need to do a good job reviewing and assessing the science, but I think there are ways that we can streamline the process, get the benefit of the science but maybe not be as focused on perfection as we have," he said.

The plan is likely to spark further controversy over the science EPA uses to justify its decisions as EPA Administrator Scott Pruitt is planning a policy that would require the agency to use only publicly available data as the basis for its decisions, though a top White House official said recently that the administration would not support agencies changing their procedures in ways that prevent them from using the "best available evidence."

Environmentalists and other critics charge that could undermine several NAAQS, as EPA has historically relied on data that is protected by medical privacy as the basis for some of its standards.

During his address, Wehrum said he sees reworking the NAAQS reviews as a higher priority than revising the strict ozone standard the Obama administration adopted in 2015.

Industry and many states have charged that tightening the ozone standard from the 2008 limit of 75 parts per billion (ppb) down to 70 ppb was unreasonable and creates a limit that will be all but impossible to meet in some areas. After President Donald Trump took office, EPA said it would reconsider the decision to strengthen the standard, and that process is still ongoing according to agency status reports to a federal appeals court.

Wehrum told ABA "While we are going to take a hard look" at the 2015 ozone standard, "the really more important thing we're going to do is look at the NAAQS standard-setting process."

"What we already are doing is taking a fundamental look at how we do the NAAQS review, with an eye toward revising that so that we can do a very good job on the science and the law and the policy, but also do that comfortably within the five-year review cycle, so that we're not constantly under court-ordered deadlines to satisfy the five-year obligation," he said.

Wehrum also used his ABA address to preview a likely legal defense of the new streamlined review process, suggesting the agency will rely on an argument that the congressional mandate to review standards every five years creates "absurd results."

The air chief said a defense would be rooted in the Supreme Court's 2014 decision that rejected parts of EPA's "tailoring rule" that sought to raise statutory thresholds for triggering Clean Air Act prevention of significant deterioration (PSD) permits when regulating greenhouse gases. The justices' 5-4 ruling in *Utility Air Regulatory Group (UARG), et al., v. EPA* rejected the agency's argument that it was required to issue PSD permits for GHG releases but could "tailor" the statutory trigger for a permit.

The Clean Air Act extends PSD mandates to any facility with at 250 tons per year (tpy) of pollutant emissions, but EPA adjusted that figure to 100,000 tpy for GHGs to avoid the "absurd result" of sweeping a huge number of new facilities into the PSD program, since GHG emissions are released at much higher volumes than other pollutants.

In *UARG*, the high court said EPA lacked authority for the tailoring rule and held that GHG emissions alone cannot trigger PSD.

During his April 19 talk, Wehrum said the UARG decision stands for the principle that, “If you're getting wacky results in applying what appears to be the facial dictate of the statute, then maybe you're not interpreting the statute correctly and you need to go back and find another way to interpret the statute that avoids those wacky results.” He added that applying UARG to the NAAQS program -- even though the ruling did not address the program -- weighs in favor of a less-demanding review of the science that can be reasonably completed within the five-year timeline, rather than a “perfect” review guaranteed to miss the air law's deadline.

“Perfect is great, but close enough is good enough. How does UARG apply to that? The statute could be interpreted to demand perfection, but I think here it could be interpreted to require 'close enough is good enough.’”

Wehrum's remarks follow suggestions that he favors a fresh review of the 2015 ozone NAAQS over a formal reconsideration of that standard, despite arguments by GOP groups and industry that the Obama-era rule is unlawfully strict and should be revoked. Reconsidering the current NAAQS would require the Trump EPA to mount a new examination of the science that its predecessor used to justify tightening the limit and would have to clear a high legal bar to prove that research at the time did not justify a 70 ppb limit.

But a fresh NAAQS review could rely on a new body of scientific evidence, which the agency could use to justify a finding that data since 2015 shows that a less stringent standard is safe after all. And Wehrum could apply his idea of a streamlined NAAQS review to such a standard, which under the air law five-year review mandate the agency is due to finalize no later than October 2020.

21. Facing Legal Hurdles, EPA's 'Secret Science' Plan Punts on Key Issues

EPA Administrator Scott Pruitt has signed a long-promised plan barring the agency's use of any information in decision-making that is not publicly available, but the proposed rule punts on a host of tricky legal and implementation issues, including statutory mandates to use the best available science and how to address confidential trade secrets and medically protected data.

Instead, the proposed rule -- which appears to have cleared White House regulatory review within days of its submission -- seeks public comments on a host of topics, including whether there are additional statutory authorities the agency could use and what criteria it should use to justify any exceptions.

But the proposed rule, which Pruitt signed April 24, leaves the agency with significant flexibility to continue to rely on research that would otherwise be barred from consideration.

“The proposed rule directs EPA to make all reasonable efforts to explore methodologies, technologies, and institutional arrangements for making dose response models and data underlying pivotal regulatory science used in significant regulatory decisions available to the public in a manner sufficient for independent validation, consistent with law and protection of privacy, confidentiality, and national and homeland security,” a pre-publication copy of EPA's Federal Register notice states.

It also states that the proposal “does not compel the Agency to make that information available where it concludes after all such reasonable efforts that doing so in [a] way that complies with the law and appropriate protections is not possible.”

The proposed rule also restricts the requirements to “pivotal regulatory science for final significant regulatory actions pursuant to [Executive Order] 12866[;] the proposed rule ensures that this standard for transparency affects a smaller subset of regulations which are economically significant, create inconsistency for other federal agencies, alter budgetary impacts, or raise novel legal or policy issues.”

The proposed rule delivers on Pruitt's long-standing pledge to end the agency's use of “secret science” to craft regulations.

The policy is based on stalled legislation, long championed by Rep. Lamar Smith (R-TX), the retiring chairman of the House science committee, which directs the agency to use the “best available science” in all its actions, but bars the agency from using any studies that cannot be released publicly online “in a manner that is sufficient for independent analysis and substantial reproduction of research results.”

But the policy approach has drawn significant criticisms. Agency staff, for example, have warned of significant costs if the agency is forced to replicate studies on which it might rely.

In addition, chemical industry groups and some top officials, have raised concerns that adoption of the policy would prevent use of their studies that rely on confidential business information (CBI) to approve uses of pesticides and industrial chemicals.

Similarly, environmentalists and others have warned that many statutes, including the Clean Air Act, Safe Drinking Water Act, Toxic Substances Control Act and others, require the agency to use best available science. They have charged that failure to consider studies that rely on data that is protected by medical privacy laws -- an approach EPA has used, for example, when setting air quality standards -- is unlawful.

“This new policy would massively damage several EPA programs, including Superfund cleanups and the control of pesticides and toxic chemicals. It would probably most affect EPA's program to protect public health by setting [national ambient air quality standards (NAAQS)], since it would bar the Agency from considering a wide range of data on which it has historically relied,” the Environmental Protection Network, a group of former EPA staff who have critiqued Pruitt's policies, said in an April 24 legal analysis. “Such a policy would be illegal,” the group said.

It noted in the case of the NAAQS, Congress required EPA to set standards at a level that protects public health with an adequate margin of safety and to “base NAAQS on ‘the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects [of air pollution] on public health.’ Scientific knowledge comes in many forms, and it would be impossible for EPA to perform this task without at least considering all of them.”

And John Walke, director of clean air programs at the Natural Resources Defense Council, says it is likely arbitrary if EPA were to seek to use CBI when approving chemical and pesticide uses but not use confidential medical data when setting NAAQS. “It is arbitrary and illegal for EPA to condition use of science and relevant information on the public availability of confidential health information, confidential business information, computer codes, and the like, rather than the validity and integrity of that science and information,” Walke told the press.

“Moreover, EPA is very likely to tie itself up knots trying, unsuccessfully, to allow confidential information desired by industry, while disallowing health studies based on confidential patient data that would support stronger health safeguards,” he added.

22. Eight States Urge EPA to Halt Draft Rule Limiting Science Use

A group of eight attorneys general are urging EPA Administrator Scott Pruitt to consult with the National Academy of Sciences before proceeding with a draft science “transparency” rule.

The states say the plan would have “profound potential impacts” by limiting the scientific evidence used when adopting rules to protect health and the environment.

The states are urging the Environmental Protection Agency to either withdraw the proposal, or extend the comment review period to allow enough time for more consultations and public input.

Attorneys general who signed the letter hail from California, Delaware, Maine, Minnesota, New York, Pennsylvania, Iowa, and the District of Columbia.

23. According to OMB Analysis, Trump’s Regulatory Agenda is Bad for Economy

Recently, the Trump administration confirmed that environmental regulations are good for the economy. According to Trump’s Office of Management and Budget, every dollar spent on environmental compliance generates six dollars in economic benefits.

Every year the White House Office of Management and Budget (OMB) releases a report on the “Benefits and Costs of Federal Regulations.” And every year these reports show that the economic benefits of regulations outweigh the costs, by large margins. Last year there was the 2015 OMB report, which covered the 2004-2014-time period. According to that report, the benefits of EPA regulations were roughly ten times higher than the costs.

The latest OMB report is officially the draft 2017 report, and it covers regulations issued in 2006-2016. The benefits continue to outweigh the costs, in this case by a ratio of roughly 6:1, over that ten-year period. And this is true every single year: The OMB report only provides year-by-year costs and benefits for all regulations (including environmental and other regulations), but overall, and for any given year, every dollar in compliance costs generates between \$3 and \$20 in economic benefits.

To look at this another way, the OMB report shows that over the 2006-2016-time period, environmental regulations have created a net economic benefit of over \$300 billion per year.

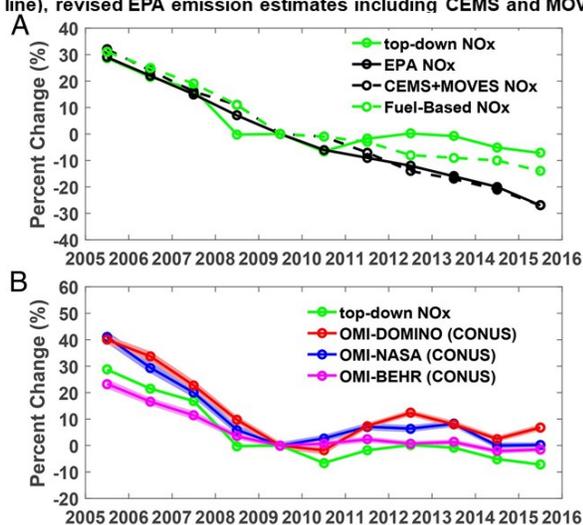
The upshot should be clear – environmental regulations are good for the economy. And it’s not just the cost-benefit math that shows this. There is no truth to the claim that environmental regulations “kill” jobs. In fact, they are more likely to lead to job growth.

Trump and EPA Administrator Scott Pruitt like to complain about job-killing regulations, but they are just blowing smoke, according to the Trump administration itself. They also boast about regulatory rollbacks, which is tantamount to boasting about how effective they are at hurting our economy and putting our children’s health at risk. Trump’s regulatory rollbacks are profoundly misguided, and bad for the country. He should listen to his bean-counters. Protecting the environment is a win-win.

24. Unexpected Slowdown of US Pollutant Emission Reduction in The Past Decade

Ground and satellite observations show that air pollution regulations in the United States (US) have resulted in substantial reductions in emissions and corresponding improvements in air quality over the last several decades. However, large uncertainties remain in evaluating how recent regulations affect different emission sectors and pollutant trends. A new study² shows a significant slowdown in decreasing US emissions of nitrogen oxides (NO_x) and carbon monoxide (CO) for 2011–2015 using satellite and surface measurements. This observed slowdown in emission reductions is significantly different from the trend expected using US Environmental Protection Agency (EPA) bottom-up inventories and impedes compliance with local and federal agency air-quality goals. The study finds that the difference between observations and EPA's NO_x emission estimates shown in Figure 1 could be explained by: (i) growing relative contributions of industrial, area, and off-road sources, (ii) decreasing relative contributions of on-road gasoline, and (iii) slower than expected decreases in on-road diesel emissions.

(A) Percent changes (normalized at 2009) of top-down US anthropogenic NO_x emission estimates from inverse analysis (green line), EPA's emissions trends report data of NO_x (black solid line), revised EPA emission estimates including CEMS and MOVES ...



Zhe Jiang et al. PNAS doi:10.1073/pnas.1801191115

PNAS

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25. Billions from California Gas Tax and Vehicle Fees Will Go to Transit Project

California state officials announced April 26th that \$2.4 billion from increases in the gas tax and vehicle fees will be spent on dozens of transit projects, including work to prepare Southern California for the 2028 Summer Olympics. The announcement came just before Republican activists plan to file signatures for a ballot initiative to repeal the increases.

An additional \$1.9 billion for the projects will come from funds collected by the state's landmark climate change program, which requires polluters to buy carbon emission credits, the officials said.

1. ² "Unexpected Slowdown of US Pollutant Emission Reduction in The Past Decade" Zhe Jiang, Brian C. McDonald, Helen Worden, John R. Worden, Kazuyuki Miyazaki, Zhen Qu, Daven K. Henze, Dylan B. A. Jones, Avelino F. Arellano, Emily V. Fischer, Liye Zhu and K. Folkert Boersma, PNAS April 30, 2018. 201801191; published ahead of print April 30, 2018. <https://doi.org/10.1073/pnas.1801191115>, Edited by John H. Seinfeld, California Institute of Technology, Pasadena, CA, and approved March 30, 2018 (received for review January 22, 2018)

The money will go to six Metropolitan Transit Authority expansion projects, including light-rail extensions to Torrance and Montclair, and additional rapid transit service along congested corridors, according to the California State Transportation Agency, which allocated the money.

Officials said money will also go toward making the Amtrak Pacific Surfliner and Metrolink commuter lines faster and more reliable by improving tracks and signals at locations such as Los Angeles' Union Station.

In the San Francisco Bay Area, it will help complete the funding for a Bay Area Rapid Transit line to San Jose and the creation of new SamTrans express bus routes along the U.S. 101 corridor.

"These zero-emission bus and rail projects mean millions of tons less pollution in the air we breathe," Gov. Jerry Brown said in a statement.

The money is part of the \$5.4 billion expected to be raised annually for road and bridge repairs and mass transit improvements through increases in the gas tax and vehicle fees approved last year by the Legislature and Brown.

The rail and transit money announcements were made as Republican activists prepare to file more than 830,000 signatures to qualify a measure for the November ballot that would repeal the 12-cents-per-gallon gas tax increase, 20-cent diesel fuel excise tax increase and new annual vehicle fees.

Brown lobbied lawmakers hard for their votes on the tax measure, SB 1, citing a large backlog of repairs and improvements. But Republican critics and lawmakers who are pushing the ballot initiative said the state could pay for the work by tapping budget surpluses and abandoning the high-speed rail project being pushed by the governor.

Republican activists predict the initiative will drive turnout by more conservative voters upset with Democrats for raising the gas tax. The ballot measure drive has received significant funding from the California Republican Party and Republican gubernatorial candidate John Cox, as well as GOP lawmakers such as House Majority Leader Kevin McCarthy of Bakersfield.

State officials hope to show voters evidence of progress from the higher taxes and predict the initiative will be rejected. "The real-life ways SB 1 benefits drivers and commuters will make their own compelling case, especially where long-needed projects are already underway," said Assembly Speaker Anthony Rendon (D-Paramount). "Local Republican leaders around the state were an important part of the SB 1 coalition, so I'm not sure how the more radical members of the party will be reconciling that in their attacks."

The transit projects funded April 26 also help the state meet climate and air quality goals, reducing greenhouse gas emissions by more than 32 million tons, said Brian Annis, secretary of the California State Transportation Agency.

The funding includes \$36 million of the \$102 million cost to the city of Los Angeles for 112 zero-emission buses to replace existing propane-powered vehicles and expand the DASH bus fleet so it will run more often and in more areas.

26. U.S. Moves Up to Second Most Attractive Renewables Market After China

The United States moved up to second place in a ranking of the most attractive countries for renewables investment, after China, a report by UK accountancy firm Ernst & Young showed recently.

In an annual ranking of the top 40 renewable energy markets worldwide, China was the top country for the third year running, followed by the United States which had occupied third place last year due to a shift in U.S. energy policy under President Donald Trump.

Even though the United States imposed tariffs on imports of solar photovoltaic and modules this year, the effects have been mostly absorbed by the market and wind projects are not subject to subsidy cuts under a recently-passed U.S. tax reform bill.

“Solar import tariffs imposed by the U.S. government in January are likely to have only a limited impact on solar energy development in the country but are likely to tip the scales toward wind projects at the utility scale,” the report said.

“The solar tariffs — which are to be challenged under World Trade Organization rules — are neither expected to seriously derail U.S. solar investment, nor encourage much, if any, shifting of solar manufacturing back to the U.S.,” it added.

Germany was the third most attractive country in the ranking, while India slipped from second to fourth position due to investor concerns about the threat of solar import tariffs, the report said.

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27. India Finalizes Stage IV and V Emission Standards for Nonroad Engines

Indian Ministry of Road Transport and Highways (MoRTH) has published the final Bharat Stage IV/V emission standards for nonroad diesel engines used in construction and agricultural equipment. The BS IV emission standards are aligned with EU Stage IV standards, while the BS V standards are aligned with EU Stage V.

The BS IV emission standards become effective from October 2020, while BS V standards start in April 2024. The stage BS V standards include a diesel particulate filter (DPF) forcing particle number standard for engines with rated power between 19 and 560 kW.

The BS IV regulations don't apply for diesel engines with rated power below 37 kW—a category that includes some 90% of agricultural tractors in India—or for engines above 560 kW, but the BS V standards cover all power ratings.

Engines equipped with SCR must meet an ammonia emission limit of 25 ppm for engines \leq 56 kW and 10 ppm for engines above 56 kW. The limits are defined as a mean value over the NRTC and NRSC cycles.

The regulation includes a six-month grace period when registrations of equipment complying with the previous set of emission standards is allowed. From April 2026, an in-service conformity check is required for all BS V approved engines manufactured.

28. Bringing Eco-Friendly Vehicles in India An Issue Due to Lack of Policy: Honda

Bringing eco-friendly automotive technologies to India in the absence of a clear policy framework is a challenge, according to Japanese auto major Honda. The company which has announced that by 2030 two-thirds of its production will be non-conventional - either hybrid, plug-in, electric or fuel cell vehicles - said it will sell hybrid in India mostly as a technology demonstrator as the current high taxation has affected volumes severely.

Honda Cars India, the wholly-owned arm of Honda Motor Co, sells Honda Accord hybrid in India through import of completely built unit from Thailand. Sales of the model had suffered after price hike due to increased taxes after GST implementation last year.

"We (Honda) have declared that two-thirds of our production by 2030 will be non-conventional, either hybrid or plug-in or electric or fuel cell. So, in line with that we have all the technologies available," Honda Cars India Ltd (HCIL) Senior VP and Director Marketing and Sales Rajesh Goel told here.

He however added: "The issue is that everything entails investments. Unless the policy framework in India is clear for us to be able to decide what and when to get in terms of concrete plans, there is an issue." Availability of technology is not a problem for the company, he said.

"Other than that (policy framework), for us to get a technology here, be it hybrid or electric, is absolutely no problem because we are running similar programs for other countries. So just to adapt one, in terms of technology we have everything available," Goel added.

Stating that Honda has been a front runner in the world in environmental-friendly technologies, he said, "we were the first company to bring a hybrid to India ten years ago with Civic."

Reiterating the significance of a clear road map, he said, "we have the global commitment of 2030. So, including the Indian volume we eventually must move towards that. Policy framework is very important step for us."

Goel said as long as there is a level playing field despite the lack of a clear policy framework, the company would figure out its game plan.

He said there has been an ongoing dialogue between the government and the industry to decide on the road ahead for eco-friendly vehicles. "I am sure that industry views will be taken, and we are participating in those forums," Goel said.

Last year, the government had announced intention to have 100 per cent electric vehicles (EVs) for public transport and 40 per cent of personal mobility by 2030 but this year it has ruled out framing an EV policy stating technology should not be trapped by rules and regulations.

When asked about the impact of higher tax under GST on hybrid vehicles on sales of Honda Accord hybrid, Goel said, "we have suffered a dent in volumes as it has a huge impact on price." Under GST, hybrid vehicles have an overall tax incidence of 43 per cent (28 per cent peak GST rate plus 15 per cent cess).

He said price of Honda Accord hybrid had gone up by around Rs 5 lakh³. The model is currently priced at Rs 43.21 lakh (ex-showroom Delhi).

³ 1 lakh=100,000

"However, as our commitment to these technologies and to the environment and our demonstration to the customer, we would continue to sell Honda Accord hybrid although we may not have volumes," Goel added. Even though small in number, such cars running on the road is the real proof to policymakers to decide what the way forward should be rather than merely debate, he said.

HCIL is selling the model in India by importing in batches of 30 cars only after getting confirmed orders. When asked about absolute sales numbers of the model, he said: "We are not even close to three digits (annually). The number has fallen purely because of increased prices... Even for moneyed people that level of jump is difficult to digest."

29. Kolkata Becoming India's Worst Air Pollution City

Will Kolkata soon wrest the country's pollution capital crown from Delhi? Delhi may be vying with Beijing for global topper status in air pollution and garnering all the attention for polluted air, but Kolkata has silently pushed Delhi behind on the air quality index and turned the toxic topper among metro cities in India during the first two months of 2018.

Experts warn that the actual air quality in Kolkata may be even poorer, and hence the difference of Kolkata and Delhi's pollution levels are even wider, as air pollution in the eastern Indian city is measured manually, which tends to underestimate the pollution figures. Further, while a slew of actions on prodded by Supreme Court and the National Green Tribunal have been taken to combat toxic air pollution in Delhi, Kolkata is yet to even devise a concrete road map for tackling foul air.

An analysis of the official air quality index (AQI) data of different metro cities — West Bengal Pollution Control Board (WBPCB) for Kolkata and Central Pollution Control Board (CPCB) data for rest of the cities — for the months of January and February found that Kolkata's average AQI at 295 parts per million during the period was higher than Delhi at 287 ppm.

The figure was just short of the 'very poor' AQI category — which starts at 300 ppm — that may trigger respiratory illnesses among people on prolonged exposure over and above exacerbating problems of those already affected. Out of 59 days in January and February, Kolkata's pollution level was worse than Delhi on 32 days and was more than double of Delhi's pollution level on some days.

Kolkata's air stood almost twice as polluted compared with other metros like Mumbai (AQI of 155), Chennai (127), Bangalore (88) and Hyderabad (130) during the period. The AQI has been calculated on basis of dominant pollutant, PM 2.5 in most cases, measured in automatic stations. In the case of Kolkata, the readings of four manual stations — Behala Chowrasta, Minto Park, Moulali and Shyambazar — were considered, as the city's automatic stations have been non-functional for the past few months.

However, even before becoming non-functional, they were not used to measure PM 2.5, which is the most potent air pollutant, and can penetrate the innermost crevices of lungs and trigger a bevy of diseases. "The actual scenario may be even poorer as manual stations tend to under-calculate the pollution figures," Dipankar Saha, a CPCB scientist, told indiaclimatedialogue.net.

Considering the two months separately, Kolkata was found to be at par with Delhi on the pollution count during January. The average AQI values were 328 and 327 in Delhi and Kolkata, respectively. Kolkata's air worsened in February with an average AQI score of 260 versus 243 in

Delhi. Kolkata's air quality was found to be comparable to Faridabad and Ghaziabad, two of the most highly polluted cities in country as per the CPCB list, which recorded AQI values of 298 and 349 between January 1 and February 28.

The data refutes the claim of the West Bengal government that state capital's air quality is much better than that of Delhi. Sometime back, state environment minister Sovan Chatterjee rubbished the notion that Kolkata's air quality is poorer than Delhi, alleging that the media had been jumping to "false conclusions" by only comparing the single point data generated atop US Consulate in Kolkata and the US Embassy in Delhi, which is unscientific. "Kolkata's air is much better than Delhi and one of the best in world," the minister had told indiaclimatedialogue.net in an earlier interview.

"What will the minister say now that all the data being referred to are official data? I will try to raise the issue in appropriate legal forums," said environmental activist and lawyer Subhas Datta, who has filed a number of petitions on the city's air pollution in the Calcutta High Court and the National Green Tribunal.

WBPCB officials declined to comment on the data. "We have to analyze the data first," a WBPCB official said, speaking on the condition of anonymity.

Experts are unanimous that Kolkata's bane is vehicular emission, particularly from diesel vehicles. The city has a two million strong fleet of vehicles, out of which about 50% run on diesel. More important, the diesel fleet includes over 95% of the city's commercial vehicles.

The diesel capital status of Kolkata is the biggest hurdle for the city to combat burgeoning air pollution, experts say. "Nearly two lakh (200,000) commercial vehicles, many of which are old and poorly maintained, are the worst offenders for ultrafine particulates, PM 2.5, pollution," emissions expert Somendra Mohon Ghosh told indiaclimatedialogue.net.

Anumita Roy Choudhury of Centre for Science and Environment, an environmental think tank, said the ordeal for the people of Kolkata would continue unless the city moves over to compressed natural gas (CNG) as an alternative to diesel. Although the Gas Authority of India Ltd (GAIL) has launched a project in 2008 to take CNG to Kolkata, it has remained a non-starter in the past one decade due to combined apathy of the state and central governments.

"With National Green Tribunal pushing in context to a petition filed by me, it is now expected that CNG may ultimately reach the city through tankers from the Asansol area, where CNG is manufactured from coal bed methane," Datta said. "Pipeline supply will take a few more years."

The AQI data showed that air quality in Kolkata was generally better on weekends, which also proves the role of vehicles in Kolkata's air pollution, as the trips made by commercial vehicles are down by around 30% on weekends.

Green activists complained that successive state governments have done little to arrest the rise in pollution from transport, especially from commercial vehicles, despite several judicial verdicts. Biswajit Mukherjee, a former chief law officer of the state pollution control board, pointed out that though in 2008 the Calcutta High Court had imposed a ban on commercial vehicles 15 years or older in the Kolkata Metropolitan Area, a part of which is Kolkata Municipal Corporation area, many of the old polluting vehicles continue to ply on the fringes of the city due to the absence of proper monitoring.

“The state government is sitting on recommendations of an expert committee, which was set up by the National Green Tribunal through an order about one and a half years ago,” alleged Datta. The tribunal had on August 11, 2016, directed the state government to implement the recommendations of an expert committee appointed by the tribunal, but so far there has been little action on the ground.

“It’s very unfortunate. Kolkata should have prepared and start executing the graded response action plan like Delhi with emphasis on vehicular pollution, as such a plan is mainly instrumental for Delhi’s improvement on the air front,” Roy Choudhury told indiaclimatedialogue.net.

“The government is unlikely to take strong measures against the polluting commercial vehicles because a lot of political stake is associated with it. It’s like the model of political rent-seeking — win-win for polluters and political parties, as polluters pay rent to politicians, who in turn give them administrative protection,” said Prabal De, an economist from City College of New York. “The people suffer as a result.”

A panel of doctors, from pulmonologists to cardiologists to oncologists, has declared a health emergency in the city on the face of rising air pollution. “It’s an emergency situation. I am really scared about the future of our children,” Arup Halder, a pulmonologist, said during a meeting organized as part of the Kolkata Clean Air campaign.

Raja Dhar, another pulmonologist associated with the National Allergy Asthma Bronchitis Institute, stated that research shows 47% of the city’s population is affected by air pollution while 70% of people who are outdoors regularly for six hours or more in a day show unusual lung function test results. “The direct effect due to air pollution is confirmed when somebody retains a dry cough for three weeks or more and needs at least one dose of antibiotics to recover,” said Dhar.

Oncologists say the relationship between the city’s air pollution dominated by ultra-fine particulate matter and lung cancer has been found to be quite categorical. “Out of two major types of lung cancers, the dominant one in Kolkata is squamous cell cancer, which is not only directly linked to air pollution but also much more difficult to treat than any other,” said Chandrakanth M.V., an oncologist, while Suman Mullick, an onco-surgeon, said that on an average “50% cases” he treats are non-smokers, emphasizing the role of killer air pollution in Kolkata.

30. SC-Mandated BS-VI-Compliant Cars Impossible Say Automobile Manufacturers

Automobile manufacturers told the SC-mandated Environment Pollution Control Authority that early introduction of BS-VI-compliant cars in the capital was nearly impossible. They said no retrofitting was possible on older vehicles, particularly BS-II and BS-III, either to have a cleaner fleet.

One of the leading auto manufacturers said: “A huge number of models have to be certified. It’s a huge engineering effort. We are already working day and night to meet the official deadline of April 1, 2020.”

EPCA members said similar strategies had been implemented in Beijing where advanced cars were launched before other parts of the country to address air pollution. One of the auto manufacturers, however, contended that fuel quality outside Beijing was very poor.

The same couldn't be done in Delhi-NCR because consumers would not get BS-VI fuel outside NCR, which might affect the BS-VI engine, it said.

A senior official from the ministry of petroleum and natural gas (MoPNG) reiterated that "we are ready with the fuel. All major auto companies had been importing BS-VI fuel for testing from earlier. They had time".

Last year, when public outcry over the severe air quality in the capital had peaked, MoPNG had announced that it would advance the introduction of BS-VI by two years in the capital — from April 1, 2020, to April 1, 2018.

The MoPNG official said BS-VI fuel would be available in almost all of NCR by 2019, except six districts — Bhiwani, Rohtak, Sonapat, Kaithal, Panipat, Jind and Karnal. He also showed an IOC report to EPCA members on how much emissions would reduce if BS-VI fuel was used in BS-IV vehicles.

Some vehicles have shown significant reduction in emissions but not all. The report was not made public because it will be first submitted in the Supreme Court. BS-IV diesel has 50 ppm (parts per million) sulfur, while BS-VI has 10 ppm.

However, a representative of Society of Indian Automobile Manufacturers explained that industry was anyway running against time to meet the 2020 deadline.

On retrofitting of older vehicles with diesel particulate filters, an official from the Automotive Research Association of India said it was technologically complex because older heavy-duty vehicles had mechanical systems while the DPFs were adapted for electronic systems.

31. China to Allow Full Foreign Ownership in Auto Industry

China has announced plans to allow full foreign ownership of automakers in five years, ending restrictions that helped to fuel its escalating dispute with U.S. President Donald Trump and strained relations with other trading partners. The change would scrap rules that require global automakers to work through local state-owned partners, an arrangement that forces them to share technology with potential competitors. It was unclear whether that might help to mollify Trump, who has threatened to hike tariffs on as much as \$150 billion of Chinese goods in response to complaints Beijing pressures foreign companies to hand over technology.

The development reflects growing official confidence that China's young but fast-growing automakers can compete with global brands and a desire to make the industry more flexible as Beijing promotes development of electric cars.

The industry had been waiting for details since President Xi Jinping announced in a speech last week that ownership restrictions would be eased, and auto import duties reduced.

Limits on foreign ownership of electric vehicle producers will be eliminated this year, the Cabinet's planning agency said. That will be followed by a similar repeal for makers of commercial vehicles in 2020 and passenger vehicles in 2022.

"Following a five-year transition period, all ownership restrictions will be lifted," said the announcement by the National Development and Reform Commission.

Until now, global automakers such as General Motors Co. and Volkswagen AG have been allowed to own no more than 50 percent of a joint venture with a Chinese partner and were limited to two ventures. Automakers complied because they gained access to China's populous market, which passed the United States in 2009 as the world's biggest by number of vehicles sold. Sales of sedans, SUVs and minivans last year totaled 24.8 million units, about 55 percent of which was American, European, Japanese and Korean brands.

Independent domestic brands such as Geely, which owns Sweden's Volvo Cars, SUV maker Great Wall and electric car brand BYD Auto are developing technology and increasing exports.

Geely has bought a nearly 10 percent stake in Daimler AG, becoming the German automaker's biggest shareholder and gaining leverage to push for technology sharing. State-owned Dongfeng Motor Group, which has joint ventures with Nissan Motor Co. and other brands, bought a 14 percent stake in France's PSA Peugeot Citroen in 2014.

"Chinese companies such as Geely and Great Wall have financial power and technology resources," said industry analyst John Zeng of LMC Automotive. "It's not like 10 years ago, when foreign brands had a big technology advantage."

He said the latest shift is part of Beijing's effort to accelerate development of electric vehicles, which have a central role in the ruling Communist Party's industry plans.

China is the world's biggest electric vehicle market, with last year's sales rising 53 percent over 2016 to 770,000 vehicles. Beijing is using sales quotas and fuel efficiency standards to press global automakers to help local suppliers develop battery technology.

A deputy industry minister said in September that Beijing was developing a timetable to join France and Britain in ending sales of gasoline cars.

BYD, which has a joint venture with Daimler's Mercedes unit, is the biggest global electric car producer by number of units sold and has a factory in California that produces electric buses.

"Foreign brands will not have as much of an advantage as they had with combustion engines," said Zeng. "More or less, Chinese brands already compete with them on a similar level in electric cars."

Beijing's restrictions led to clashes with Washington and other governments. The United States, Canada and Mexico won a World Trade Organization ruling in 2008 that China was improperly promoting local components suppliers by imposing import taxes on autos assembled in Chinese factories from foreign parts. But by then, automakers already had shifted to local suppliers and were transferring technology. Trump complained Beijing was hampering trade by charging a 25 percent import duty on most cars while the United States charges less than 3 percent.

The impact on companies such as GM, VW, Nissan Motors Co. and Ford Motor Co. that have joint ventures with Chinese partners is likely to be limited at first. Their contracts with Chinese partners extend for up to 30 years. They have developed supply and factory networks, research centers and other joint activities that would be costly and difficult to unwind.

GM also has a venture with state-owned Shanghai Automotive Industries Corp. to produce and market vehicles in India.

The change could be a boon to U.S. electric brand Tesla, which has avoided a joint venture that would require it to share battery technology. The company imports its cars from California, which adds import taxes to the sticker price.

32. Freight Transport in Northern China Blamed for Air Pollution

The freight transport sector in northern China is under pressure to switch from heavy-duty lorries to rail transport, reports China Environment News. After coal burning reduced in Beijing and its surrounding areas, exhaust from vehicles, particularly from heavy-duty lorries that burn cheap, dirty fuel, has emerged as the top source of air pollution in the region. According to experts interviewed in the story, in 2016 road lorries transported as much as ten times more goods than rail freight. For the transport of the same amount of goods, a train consumes only 3.5% of the energy used by a truck. Measures have already been taken to address this issue, as ports along the coast of northern China's Bohai Sea were ordered to reject any coal delivered on trucks. However, experts suggest that deeper reforms are required to solve the problem, such as relocating major logistics centers near to railway lines and using data to improve transport efficiency.

33. BYD Q1 Profit Plunges Behind Lower EV Subsidies

BYD Co., China's largest electrified vehicle maker, reported an 83 percent drop in first-quarter net profit after Beijing slashed electrified vehicle subsidies in January. The company posted a net profit of 102.4 million yuan (\$16.1 million) in the first three months of this year, compared with profits of 605.8 million yuan in the same period last year.

BYD didn't explain the reason for the sharp decline in profit in the quarterly financial report. But in early April, when releasing its financial report for 2017, the company warned a cut in government subsidies for electrified vehicles hurt profit margins on its electrified vehicles.

Since 2017, the Chinese government has repeatedly cut subsidies for EVs and plug-in hybrids with the aim to phase out the incentives by 2020.

BYD said it delivered nearly 111,800 vehicles, which include roughly 82,100 gasoline models and 29,600 electrified vehicles, in the first quarter.

BYD continues to diversify operations and revenue jumped 18 percent to 24.7 billion yuan in the first quarter.

34. Hyundai Joins South Korean Effort to Build More Hydrogen Chargers

South Korea plans to build 310 hydrogen charging stations by 2022 as the country looks to add fuel-cell vehicles as well as electric vehicles to fight climate change and clean up air pollution. Hyundai Motor Co., South Korean government ministries, an infrastructure manager, and hydrogen suppliers signed a memorandum of understanding on April 25 to invest jointly in a company that will build and operate the stations.

Each will cost 3 billion won (\$2.79 million) to install and 200 million won per year to maintain, which is why the U.S., Japan, and Germany have used public-private partnerships for hydrogen chargers, the Ministry of Environment said in a statement April 26. "We look to create a global successful case in solving the charging infrastructure problem, which has been the biggest

stumbling block in supplying hydrogen vehicles,” Ministry of Trade, Industry, and Energy (MOTIE) Vice Minister Lee In-ho said in the statement.

A MOTIE official, who was not authorized to speak on the record, said foreign companies and investors would “of course” be able to participate in the hydrogen station development projects. “We will recruit additional companies this year, and if a foreign company wants to join and invest, they are welcome.”

On March 27th, Hyundai began sales of its Nexo fuel-cell vehicle in South Korea, Byung Kwon Rhim, executive vice president of Hyundai Motor Company in charge of the global operations division, said in a statement, “We are witnessing a historic day as fuel cell technology is being commercialized in large quantities.”

“The burden of maintaining and managing a hydrogen charging station is heavy, so ultimately, it became difficult for the government to provide the entire process,” an environment ministry official, who was not authorized to be cited, told the press on April 27. “As we recognized our weaknesses, we look to form an SPC [special purpose company] to provide support for the financial burden.”

There are currently 12 charging stations, with eight of them open to the public and nine more under construction. The government will build another 10 charging stations this year—for a total of 31—in eight cities and provinces such as Seoul, Busan, and Daejeon.

The Ministry of Environment official said that although hydrogen vehicles and charging stations are expensive, the vehicles have their own benefits such as shorter charging periods and longer driving distance than electric vehicles. On the other hand, EVs have a cheaper retail price and the charging infrastructure is less expensive to build, he said.

For example, a hydrogen-powered Hyundai Nexo, unveiled this year, can drive 608 kilometers (378 miles) on a five-minute charge, while an electric Hyundai Kona has a driving range of 406 kilometers (252 miles) on a one-hour charge.

The government is aiming to put 15,000 hydrogen vehicles on Korean roads by 2022. It also aims for 1 million EVs by 2020. There were 26,000 EVs in the country as of January.

“By no means do we intend to promote just one technology,” the Ministry of Environment official said. “Both are beneficial to improving our environment, and we plan to support the development of both technologies.”

Kim Soo-whan, press officer for state-run Korea Gas Corp. (KOGAS), said the company plans to invest in the project as “hydrogen is a potential fuel source in the future, and as a business, we need to explore different possibilities to keep up with consumer trends.”

To accelerate adoption of hydrogen cars, the government is supplying a 22.5 million won (\$20,900) purchasing subsidy and discounts of 4 million won. There are also tax incentives and discounts on highway tolls and parking lots. It also will boost awareness of hydrogen-powered vehicles by introducing hydrogen taxis and car shares and piloting hydrogen buses in Ulsan on the southeast coast, where Hyundai Motor has a factory.

But Choi Woong-chul, professor at Kookmin University’s Department of Automotive Engineering, said that hydrogen cars’ longer driving distance is not that much greater than the newest EV models, while hydrogen stations’ installation costs remain immense. Despite government

subsidies, few people will purchase hydrogen vehicles because of the limited number of charging stations, he said.

35. New 'Feebate' Incoming in New Zealand To Benefit Electrified Vehicles

Importers of high-emissions vehicles could be hit with extra fees to subsidize electric vehicles, a new proposal suggests. The Productivity Commission has proposed a 'feebate' on vehicles that use large amounts of fossil fuel in its Low Emissions Economy draft report. High-emissions vehicles would incur a fee while low-emissions (electrified) vehicles would receive a rebate.

According to the report, "the feebate could be a one-off transaction at the point of importing a vehicle, a component of a vehicle's annual registration fee, or a combination of the two.

"NZ is one of a handful of developed countries without vehicle emissions standards, and risks becoming a dumping ground of high-emitting vehicles from other countries that are decarbonizing their fleets."

The EV adoption rate in New Zealand is increasing, although price as well as range anxiety both remain barriers. The 'feebate' could at least help alleviate one of these.

Greenhouse gas emissions from the transport sector are around 18.4 per cent of New Zealand's total emissions, the third largest sector behind energy (22.5) and agriculture at 47.9 per cent, according to 2015 figures.

David Crawford, Chief Executive Officer of the MIA said, "the new vehicle sector welcomes the opportunity to participate in a discussion on measures that would be effective in achieving an acceleration of reduction in greenhouse gases." "Discussion on transport incentives and disincentives within the draft report are welcomed as it stimulates a healthy debate on what policy measures are best for New Zealand", he added.

36. Pakistan Moves to Curb Urban Air Pollution After High Court Ruling

Pakistan's environmental protection agency is installing air quality monitors and warning factories to add pollution filters after a panel of the country's top judges ordered the government to detail its efforts to control worsening air pollution. The court ruling earlier this month followed a lawsuit by a Karachi man challenging the government's failure to control air pollution in that port city.

Chief Justice Mian Saqib Nisar, head of a three-member high court panel, ruled that the government must provide details of what it is doing to curb air pollution across the country. He said he was shocked at how dirty the air had become, particularly in Pakistan's cities.

The ruling has spurred government authorities to action to try to reduce pollution levels, fearing they could face court orders or sanctions.

Venu G. Advani, the Karachi lawyer who filed the court petition, told the Thomson Reuters Foundation he was seeking to have air quality regulations in the country enforced. He said he hoped the court would ensure "provision of the constitutional right to a clean environment, for which clean air is key".

"There is no hope without the Supreme Court's intervention to awaken government officials from their deep slumber" on air quality, he told the press.

According to a 2015 report published by the medical journal Lancet, nearly 22 percent of annual deaths in Pakistan – or more than 310,000 each year - are caused by pollution, most them due to air pollution.

A 2014 World Bank study on Pakistan’s air quality recommended the country set aside funding to “install and operate a reliable air quality monitoring network” and set other standards and frameworks to cut pollution.

Since the court ruling, officials at the Pakistan Environmental Protection agency have said they are moving rapidly to comply. “We are now installing air quality monitoring instruments with the help of federal government funding and punishing the polluters,” said Ziauddin Khattak, director of the agency.

“We have now told dozens of industrial units and brick kilns through warning notices to install air cleaning filters on smoke-emitting chimneys and have started monitoring vehicles on various thoroughfares and issuing fines to the polluting vehicle owners,” he said. Nearly 50 brick kilns have been issued notices, Khattak said, and more than 130 buses and other vehicles fined over the last two months.

He said seven fixed and three mobile ambient air quality monitoring stations have been set up in Karachi, Lahore, Islamabad, Peshawar and Quetta, all cities that have suffered problems with air pollution.

Saif Anjum, Punjab provincial environment secretary, said his agency also had installed six air quality monitoring units in Lahore, with 30 more being put in place. The units, along with an air quality action plan, “will help cut 50 percent of air pollution in the next couple of years,” he told the press.

Other keys to improving air quality include planting more urban trees, replacing aging city buses and increasing parking fees to encourage the use of public transport, Anjum said.

A 2016 study by the World Health Organization ranked Rawalpindi, located near the capital Islamabad, as the second most polluted city of the country after the northwest city of Peshawar. So far, no air quality monitors are being installed in Rawalpindi, however, because of a lack of funds, officials said.

With few trees and an abundance of traffic, as well as brick kilns spewing black smoke and open incineration of waste, Rawalpindi has air pollution levels more than 10 times above levels considered safe by the World Health Organization, said Asif Shuja Khan, a former director general of the Pakistan Environmental Protection agency. Karachi, Lahore and Islamabad stand as 3rd, 4th and 5th most polluted cities in the country in terms of air quality, Khan said.

Over 90 percent of Rawalpindi’s population of over 2 million inhales contaminated air regularly, exposing them to a higher risk of health problems such as cardiovascular disease and lung cancer, he said, with children particularly vulnerable.

Pakistan’s Constitution says a clean environment is a fundamental right of all citizens, under provisions that guarantee a “right to life” and “right to dignity”, said Ahmad Rafay Alam, vice president of the Pakistan Environmental Law Association.

AFRICA

37. New Study Says Charcoal, Car Emissions Leading Air Pollutants in Rwanda

A new study commissioned by the Ministry of Environment has revealed that motor vehicle emissions and biomass energy mostly from domestic cooking, are the biggest contributors to poor air quality in Rwanda.

The soon to be released report suggests that even though the levels of air pollution in a specific area are dependent on its location in relation to pollution sources, high car emissions and biomass could be the leading environmental hazards in the country, mainly in urban areas.

The survey calls for responsible organs to find alternative energy solutions to cooking with biomass and to enforce vehicle emissions inspection to reduce pollution from vehicles.

The report, dubbed “Inventory of Sources of Air Pollution in Rwanda”, was commissioned in January this year and seeks to inform the engagement of responsible institutions to determine the future trends in air pollution and act as guideline in development of a national air quality control strategy.

Air pollution is considered the world’s largest single environmental health risk.

In 2012, over three million premature deaths globally were attributed to poor ambient air quality. Approximately 87 per cent of these deaths occurred in low and middle-income countries, the report says.

“In locations adjacent busy roads, motor vehicle emissions are the biggest contributor to poor air quality whereas in residential areas away from busy roads the biggest contributor is domestic cooking with biomass.

Power plants may have higher emission rates of pollutants compared to household cooking but their effects on air quality in areas where there is high population density is low because the plants have stacks to aid dispersion and they are not located in residential areas.” the report reads in part.

Oxides of Nitrogen (nitric oxide (NO) and nitrogen dioxide (NO₂)), Sulphur dioxide (SO₂), Particulate matter (particulate matter with an aerodynamic diameter of less than 10 microns (PM₁₀) and 2.5 microns (PM_{2.5})), Ozone (O₃) and Carbon monoxide (CO) are some of the pollutants which were considered in the study.

“The study found that the main pollutants of concern in Rwanda are nitrogen dioxide and particulate matter with an aerodynamic diameter of less than 10 microns,” it says. The two gasses are said to be of “greater concern” among those considered harmful to human health and the environment.

The survey also established that existing East Africa Standards adopted in Rwanda for ambient air quality standards are unsuitable for achieving effective regulation.

It also adds that the current emission standards are not tailored to Rwanda’s needs where there is more small-scale power generation rather than large combustion plants.

The survey recommends that the Ministry of Environment should work with Rwanda Revenue Authority and the Ministries of Finance and Infrastructure “to find ways to limit importation of older vehicles in Rwanda and find alternative energy solutions to cooking with biomass”.

The study suggests that there is need to enforce vehicle emissions inspection to reduce pollution from vehicles and to commission a readiness study for Rwanda to adopt electric cars in its transport fleet policy mix.

Meanwhile, the Ministry of Infrastructure, in collaboration with United Nations Economic Commission for Africa (UNECA), has launched a two-month long countrywide campaign on “Clean Cooking”—encouraging citizens to shun using environmental-threatening biomass cooking energy to more sustainable cooking fuels.

About 93 per cent of Rwandans use either charcoal or firewood (biomass) for cooking.

In an interview with the press, Environment Minister Vincent Biruta said he believes switching to clean cooking fuels such as Liquefied Petroleum Gas and other the improved cooking technologies will go a long way in mitigating climate change, let alone cutting on indoor and outdoor air pollution. “Air pollution from biomass is a huge health issue; it leads to deforestation, hence climate challenges and health risks. It is everyone’s responsibility to play it safe for our environment,” Biruta said.

GENERAL

38. 9 Out Of 10 People Worldwide Breathe Polluted Air, But More Countries Are Acting

Air pollution levels remain dangerously high in many parts of the world. New data from WHO shows that 9 out of 10 people breathe air containing high levels of pollutants. Updated estimations reveal an alarming death toll of 7 million people every year caused by ambient (outdoor) and household air pollution.

“Air pollution threatens us all, but the poorest and most marginalized people bear the brunt of the burden,” says Dr. Tedros Adhanom Ghebreyesus, Director-General of WHO. “It is unacceptable that over 3 billion people – most of them women and children – are still breathing deadly smoke every day from using polluting stoves and fuels in their homes. If we don’t take urgent action on air pollution, we will never come close to achieving sustainable development.”

WHO estimates that around 7 million people die every year from exposure to fine particles in polluted air that penetrate deep into the lungs and cardiovascular system, causing diseases including stroke, heart disease, lung cancer, chronic obstructive pulmonary diseases and respiratory infections, including pneumonia.

Ambient air pollution alone caused some 4.2 million deaths in 2016, while household air pollution from cooking with polluting fuels and technologies caused an estimated 3.8 million deaths in the same period.

More than 90% of air pollution-related deaths occur in low- and middle-income countries, mainly in Asia and Africa, followed by low- and middle-income countries of the Eastern Mediterranean region, Europe and the Americas.

Around 3 billion people – more than 40% of the world's population – still do not have access to clean cooking fuels and technologies in their homes, the main source of household air pollution. WHO has been monitoring household air pollution for more than a decade and, while the rate of access to clean fuels and technologies is increasing everywhere, improvements are not even keeping pace with population growth in many parts of the world, particularly in sub-Saharan Africa.

WHO recognizes that air pollution is a critical risk factor for noncommunicable diseases (NCDs), causing an estimated one-quarter (24%) of all adult deaths from heart disease, 25% from stroke, 43% from chronic obstructive pulmonary disease and 29% from lung cancer.

More than 4300 cities in 108 countries are now included in WHO's ambient air quality database, making this the world's most comprehensive database on ambient air pollution. Since 2016, more than 1000 additional cities have been added to WHO's database which shows that more countries are measuring and acting to reduce air pollution than ever before. The database collects annual mean concentrations of fine particulate matter (PM10 and PM2.5). PM2.5 includes pollutants, such as sulfate, nitrates and black carbon, which pose the greatest risks to human health. WHO air quality recommendations call for countries to reduce their air pollution to annual mean values of 20 µg/m³ (for PM10) and 10 µg/m³ (for PM2.5).

“Many of the world's megacities exceed WHO's guideline levels for air quality by more than 5 times, representing a major risk to people's health,” says Dr. Maria Neira, Director of the Department of Public Health, Social and Environmental Determinants of Health, at WHO. “We are seeing an acceleration of political interest in this global public health challenge. The increase in cities recording air pollution data reflects a commitment to air quality assessment and monitoring. Most of this increase has occurred in high-income countries, but we hope to see a similar scale-up of monitoring efforts worldwide.”

While the latest data show ambient air pollution levels are still dangerously high in most parts of the world, they also show some positive progress. Countries are taking measures to tackle and reduce air pollution from particulate matter. For example, in just two years, India's Pradhan Mantri Ujjwala Yojana Scheme has provided some 37 million women living below the poverty line with free LPG connections to support them to switch to clean household energy use. Mexico City has committed to cleaner vehicle standards, including a move to soot-free buses and a ban on private diesel cars by 2025.

Major sources of air pollution from particulate matter include the inefficient use of energy by households, industry, the agriculture and transport sectors, and coal-fired power plants. In some regions, sand and desert dust, waste burning, and deforestation are additional sources of air pollution. Air quality can also be influenced by natural elements such as geographic, meteorological and seasonal factors.

Air pollution does not recognize borders. Improving air quality demands sustained and coordinated government action at all levels. Countries need to work together on solutions for sustainable transport, more efficient and renewable energy production and use and waste management. WHO works with many sectors including transport and energy, urban planning and rural development to support countries to tackle this problem.

Key findings:

- WHO estimates that around 90% of people worldwide breathe polluted air. Over the past 6 years, ambient air pollution levels have remained high and approximately stable, with declining concentrations in some part of Europe and in the Americas.
- The highest ambient air pollution levels are in the Eastern Mediterranean Region and in South-East Asia, with annual mean levels often exceeding more than 5 times WHO limits, followed by low and middle-income cities in Africa and the Western Pacific.
- Africa and some of the Western Pacific have a serious lack of air pollution data. For Africa, the database now contains PM measurements for more than twice as many cities as previous versions, however data was identified for only 8 of 47 countries in the region.
- Europe has the highest number of places reporting data.
- In general, ambient air pollution levels are lowest in high-income countries, particularly in Europe, the Americas and the Western Pacific. In cities of high-income countries in Europe, air pollution has been shown to lower average life expectancy by anywhere between 2 and 24 months, depending on pollution levels.

39. Over 7 Billion People Face Unsafe Air: State of Global Air 2018

Seven billion people, more than 95% of the world's population, live in areas of unhealthy air, according to a new global study. Air pollution is the leading environmental cause of death worldwide according to the *State of Global Air 2018*, the annual report and interactive website published by the Health Effects Institute (HEI). All told, long-term exposure to outdoor and indoor air pollution -- contributed to 6.1 million premature deaths from stroke, heart attack, lung cancer, and chronic lung disease. That makes air pollution the 4th highest cause of death among all health risks, exceeded only by high blood pressure, diet, and smoking.

This year's report includes worldwide estimates of exposure to and health burdens of burning of solid fuels in their homes; in 2016 a total of 2.5 billion people — one in three global citizens — were exposed to household air pollution from the use of solid fuels (for example, wood, charcoal, coal, dung, or other biomass) for cooking and heating. Most live in low- and middle-income countries in Asia and Africa and face a *double burden*: exposure to both indoor and outdoor air pollution.

The analysis found that China and India together were responsible for over half of the total global attributable deaths. The study also finds that increasing exposure and a growing and aging population have meant that India now rivals China for among the highest air pollution health burdens in the world, with both countries facing some 1.1 million early deaths from outdoor air pollution in 2016. China has made initial progress, beginning to achieve air pollution declines; in contrast, Pakistan, Bangladesh, and India have experienced the steepest increases in air pollution levels since 2010.

The *State of Global Air 2018* annual report and accompanying interactive website are designed and implemented by the Health Effects Institute in cooperation with the Institute of Health Metrics and Evaluation (IHME) at the University of Washington and the University of British Columbia. IHME is an independent population health research center that coordinates the annual Global Burden of Disease (GBD) study⁴, a systematic scientific effort to quantify the magnitude of health

⁴ The Global Burden of Disease is an international effort to estimate the number of deaths and lost years of healthy life due to about 300 diseases in 195 countries, and how much of this burden is caused by 84 different risk factors, including diet, high blood pressure, tobacco smoking and air

loss from all major diseases, injuries, and risk factors in populations across the world. Its results are published each year in the international medical journal, *The Lancet*. HEI provides leadership for the air pollution portion of the GBD; HEI's www.stateofglobalair.org is the only website where all the estimates of exposure to air pollution and their burden of disease included in the GBD air pollution analyses are made available for full public access.

40. Schulte Group Sees Distillates as Likely Chief Marine Fuel After 2020

Distillates will likely be the predominant marine fuel of choice for Schulte Group as the International Maritime Organization's global sulfur cap rule nears, Angus Campbell, corporate director of energy projects at Bernhard Schulte Shipmanagement, told S&P Global Platts.

"For the existing fleet of the Schulte Group we are looking at all the options on a case-by-case basis," Campbell said in an interview on the sidelines of the Singapore Maritime Week 2018. "Most of the time the decision will be to go for 0.5%-sulfur compliant fuel. A lot of the ships are relatively small; fitting scrubber technology is not really viable in our view."

For the newbuilds, the company also considers LNG as a viable option to comply with the IMO global sulfur cap rule, Campbell said.

However, for the wider BSM managed fleet, if owners express an interest in looking at scrubber technology or 0.5% sulfur compliant fuel, BSM would provide guidance in whatever way they would want to go, Campbell said.

Schulte Group owns more than 100 vessels and manages about 620 vessels.

There is an expectation that the new regulation will be enforced effectively, and everybody will have to comply, Campbell said. This is significant because since the IMO's announcement in 2016 to implement this rule from 2020, compliance has been an area of critical concern due to the magnitude of the change that the regulation entails, and the costs involved.

"There is also a huge degree of clarity now that it will be illegal to carry HSFO on a ship that isn't properly equipped with appropriate abatement systems," Campbell said. "So, I think things are now becoming much clearer and people are willing to work out what the choices are."

Amendments to MARPOL Annex VI to prohibit not just the use but also carriage of bunkers above 0.50% sulfur were agreed at the IMO's marine environment protection committee meeting recently, ensuring the proposal is on track. When they are formally adopted at MEPC 73 in October, this would mean a carriage ban would come into effect from March 1, 2020. "So, the scene is now set, and everybody knows what to expect and each of them will look at their individual ships and come up with solutions that are appropriate for them," Campbell said.

As far as new ships go, LNG is touted as a potential solution for compliance to the IMO 2020 rule, Campbell said. LNG is a very good option for several reasons; it will be competitively priced, it is sustainable as well as widely available, he said.

LNG will also reduce the through life maintenance cost of a ship, Campbell said. "You are burning a cleaner fuel, your machinery will last longer, also reducing the vessel's operating costs,"

pollution. The Institute for Health Metrics and Evaluation (IHME) leads an international team of over 2000 scientists from 130 countries in conducting the analysis.

Campbell said. The recent greenhouse gas emissions cut by IMO will also advance the uptake of LNG as a marine fuel, Campbell said. In April, a key committee of IMO agreed to an initial strategy to cut the shipping industry's total GHG emissions by at least 50% from 2008 levels by 2050.

As more LNG fueled ships are ordered, infrastructure availability will also increase, spurring its widespread adoption.

BSM, for its part, plans to expand the number of gas supply vessels in future as LNG bunkering is expected to accelerate, Campbell added.

In January 2017, a joint venture between BSM and Babcock International --Babcock Schulte Energy-- was formed. BSE has already ordered its first LNG bunker-supply ship, which will be stationed in the Baltic and will be delivered next year, Campbell said. Overall, the company will continue to develop presence in this segment in not only Europe but also in main bunkering hubs in Asia, he said.

41. Consultants Estimate Shipping Fuel Costs to Spike 25 Percent In 2020 On Sulfur Cap

Global shipping fuel costs are likely to rise by a quarter, or \$24 billion, in 2020 when new rules limiting sulfur kick in, consultants Wood Mackenzie said recently. The ballooning costs will come as the change in regulations forces a portion of the world's fleet to switch to lower sulfur, but higher cost, fuels such as marine gasoil (MGO) and ultra-low sulfur fuel oil.

The International Maritime Organization's (IMO) rules targeting air pollution will cut the maximum amount of sulfur emissions that ships worldwide can burn to 0.5 percent of fuel content by 2020, from 3.5 percent currently.

Ships that install "scrubbers" can continue to burn cheaper high sulfur fuel oil, but the bulk will not install these in time for the shift in 2020.

"Switching to MGO is a costlier solution, and in full compliance, would probably see freight rates increase, perhaps by around \$1 a barrel," said Wood Mackenzie senior research analyst Iain Mowat.

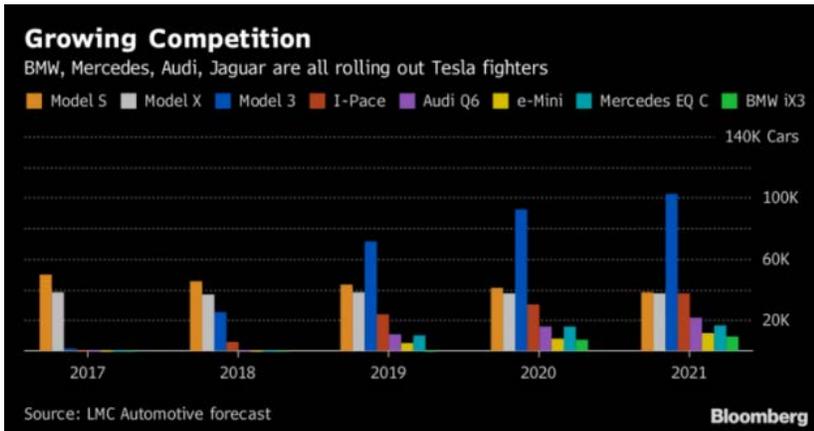
Wood Mackenzie said its "base case" for cost increases is \$24 billion in 2020, compared with a total global shipping fuel bill of roughly \$100 billion today. However, if no vessels added scrubbers and all ships complied with the rules, the spike could be as high as \$60 billion.

Mowat said that while shippers could expect a 20-50 percent return on investment cost for installing scrubbers, the penetration rate for them would be limited by factors including limited access to finance, scrubber manufacturing capacity and dry-dock space. Wood Mackenzie estimates just 2 percent of the global fleet will have scrubbers by 2020.

As a result, Wood Mackenzie said the world's refiners need to gear up to churn out the lower sulfur fuels that vessels will need, and even the primary spots for refueling ships could shift based on where lower sulfur fuels are available.

"Singapore, for example, could potentially lose some of its market share for bunker fuels to China as shippers look for alternative locations with a surplus of compliant fuels," Mowat said. "China, with ample MGO supply, is well positioned to attract shippers."

42. Germany's Electric Cars Bringing New Competition for Tesla



Starting with Jaguar's I-Pace crossover and later this year Audi's e-tron, virtually every major carmaker is rolling out stylish, sporty electric vehicles in the mold of Tesla's Models S, X and 3. Unlike Tesla, they have roughly a century of experience launching models every few months and can spread development costs across a broad portfolio.

"The vehicles I've seen are far superior to anything Tesla has," Mike Jackson, chief executive officer of U.S. vehicle retailer AutoNation Inc., said on a recent call with the press, referring to German carmakers' electric lineups. "They are in a massive pivot and shift away from diesel investment into electrification in both pure electric and plug-in hybrid."

Production issues for the less expensive Tesla Model 3—the key to bringing electric vehicles to the masses—and the company's cash burn will be the main issues for Tesla's fervent believers and detractors to chew on. The company burns through more than \$6,500 every minute, according to data compiled by Bloomberg.

While Jaguar's I-Pace SUV has been available for order since last month, Tesla's stiffest challenge will come from Germany. A phalanx of fossil-free competition is heading for dealer showrooms—from Volkswagen's I.D. family, aimed at the mass market, to the Mercedes EQ C crossover and Porsche's Mission E, both coming next year.

Porsche last week upped its forecast, saying sales of plug-in and electric cars would make up half of total deliveries by 2025.

Even so, Tesla is set to remain a force in the electric vehicle market, according to IHS Markit. It's persevering, and doesn't show any sign of letting up, according to an analyst with the researcher.

43. Nations Strike Deal to Curb Shipping Greenhouse Gas Emissions

Most of the world's nations agreed to a mandatory deal that for the first time will limit greenhouse gas emissions from the global shipping industry. After a week of negotiations at a London meeting of the International Maritime Organization, a United Nations body, envoys from 173 countries agreed to cut emissions by at least 50 percent by 2050 from 2008 levels. Saudi Arabia, the U.S., Iran, and Russia all objected.

The accord is a significant step in the fight against global warming. Shipping, one of the only industries not included in the 2015 Paris climate agreement, would rank as the sixth-largest greenhouse gas emitter if it were a country, according to the World Bank. If left unchecked, that share could account for 15 percent of global carbon emissions by 2050, a five-fold increase from today.

Vessels typically burn heavy fuel oil, one of the cheapest but also among the dirtiest fossil fuels. The industry wasn't included in the Paris agreement because each country presented an individual plan to reduce their own emissions, while the seas were left out.

"This is a ground breaking agreement—a Paris Agreement for shipping—that sets a very high level of ambition for the future reduction of CO2 emissions," said Peter Hinchliffe, secretary general of the London-based International Chamber of Shipping, which represents more than 80 percent of the world's merchant fleet.

The April 13 agreement commits to pursuing emission cuts that will be consistent with the Paris deal goals and will act as a framework for a revised emissions strategy in 2023.

Reducing the industry's emissions has been a hotly contested issue. One of the most vociferous proponents of emission controls have been the Pacific island nations, where rising sea levels are already swallowing up land, and the rate is expected to increase in the coming decades.

Other countries have resisted targets. Oil producing nations including Saudi Arabia have expressed concern about the impact of the measures on their fuel supply business, while Brazil and Argentina have said controls could penalize countries that are far from the world's main consumer hubs.

Canada, Argentina, Russia, India, Brazil, Iran, and the Philippines also raised concerns over the proposals for reasons ranging from worries that targets could have a negative effect on global trade to a lack of sufficient data.

"The IMO should and could have gone a lot further but for the dogmatic opposition of some countries," said Bill Hemmings, shipping director at Transport & Environment, which advocates for cleaner transportation. "Scant attention was paid to U.S. opposition. So this decision puts shipping on a promising track."

International shipping emitted 796 million metric tons of carbon dioxide about 2.2 percent of the world's total, according to the IMO's latest greenhouse gas study published in 2014.

In a statement summing up the weeklong meeting of the IMO's Marine Environment Protection Committee, the U.N. agency said a Working Group on Reduction of GHG emissions will present follow-up plans at the committee's next session in London Oct. 22-26.

Ideas abound for curbing ships' emissions, from switching to low-carbon fuels to developing battery technologies and next-generation hull designs. But many of those haven't been deployed extensively and face challenges in replacing fossil fuels that have proved reliable for powering big vessels on the high seas.

The shipping industry accounts for a relatively small portion of global emissions but those emissions are rising: From 2013 to 2015, emissions climbed from 910 million to 932 million metric tons, a 2.4 percent annual increase, according to the International Council on Clean Transportation.

Without major action, emissions will continue to go up. One "mid-range" projection by the International Maritime Organization, the United Nations body that oversaw the global deal, estimates emissions could increase anywhere from 50 percent to 250 percent by 2050.

Some in the shipping industry say the maritime group's cut to 50 percent by 2050, measured from 2008 levels, is ambitious. That's because the maritime sector would have to make actual cuts in emissions rather than buying credits for actions that offset emissions. The credits option was included in a 2016 sister deal to cut air-sector emissions that calls for capping carbon emissions at 2020 levels.

The shipping industry and air sectors face similar hurdles in cutting emissions. Vessels last for decades, so it takes a long time to replace older models with newer, more efficient ones. Low-carbon fuels are more expensive, very low-carbon fuels aren't yet available, and batteries that can power ships with fewer emissions aren't widely deployed.

Shipping emissions, along with air-sector emissions, were addressed outside of the 2015 Paris Agreement, in part because the sectors are to a large degree international, unlike power plants and automobile emissions. But shipping and air-sector emissions are considered pivotal to the pact's goal.

Nearly 200 nations vowed to keep average global temperatures below a 2 degrees Celsius (3.6 degrees Fahrenheit) increase from pre-industrial levels and work to further limit temperature increase to 1.5 degrees Celsius (2.7 degrees Fahrenheit).

The International Maritime Organization shipping deal was cut without the backing of several dissenting nations, including Saudi Arabia and the U.S. President Donald Trump has begun withdrawing the U.S. from the Paris climate pact, though the U.S. can't formally withdraw until 2020.

One promising development is in ports, where ships that often idle their engines could be powered from clean energy, perhaps stored in batteries, according to Annie Peterson, international counsel for the Environmental Defense Fund. "A lot of ports are interested in that, as ships running in ports create terrible pollution" for surrounding communities and emit carbon dioxide, she said.

Under the April International Maritime Organization shipping deal, nearly 180 nations also agreed to work toward eliminating emissions entirely. Nations are to weigh more ambitious action in 2023, taking into account the latest science and emerging technological solutions.