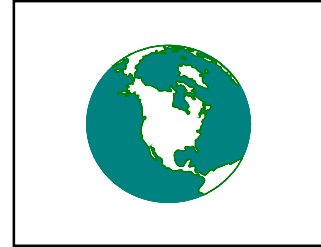


Michael P. Walsh
3105 N. Dinwiddie Street
Arlington, Virginia 22207
USA
Phone: (703) 241-1297
E-Mail mpwalsh@igc.org
Michael@theicct.org
<http://walshcarlines.com>



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EUROPE

1. EEA Says Air Pollution Europe's Main Health Risk; Transport Main Source

Air pollution levels across Europe have decreased slightly but it is still proving a major cause of premature death and disease, particularly in urban areas, the European Environment Agency (EEA) said in a new report. "Air pollution is perceived as the second biggest environmental concern for Europeans after climate change and is the single largest environmental health risk in Europe," according to the annual report, which uses data from 2016.

Europe's most serious pollutants in terms of harm to human health are particulate matter (PM), nitrogen dioxide (NO₂) and ground-level ozone (O₃) emissions, according to a complementary report on health risks. The effects of exposure to air pollutants range from "subclinical effects such as inflammation to premature deaths", the authors note.

Exposure in 2016 to PM₁₀ and PM_{2.5} above limit values was "the lowest since 2000 (2006 for PM_{2.5}) showing a decreasing trend", the EEA found. However, around 391,000 premature deaths occurred in 2015 in the EU due to exposure to PM_{2.5} – the deadliest pollutant – but have "decreased by about half a million since 1990 by the impact of European air quality policies and local and regional measures".

In 2016, 42% of the urban population was exposed to PM₁₀ and 95-98% to O₃ levels above the stricter WHO levels.

Road transport is still the main source of air pollution, the report finds, along with industry, households, the energy sector, agriculture and waste management. NO₂ and O₃ from diesel engines are alone responsible for 76,000 and 16,400 deaths per year respectively in the EU-28, the report concludes.

Road transport is also the main sector responsible for other harmful emissions such as nitrogen oxides (NO_x), lead, black carbon and carbon monoxide, the EEA notes.

2. Increase In EU Greenhouse Gas Emissions Hampers Progress Towards 2030 Targets

Greenhouse gas emissions across the European Union rose slightly in 2017, mostly because of the transport sector. Preliminary estimates published in the European Environment Agency's (EEA) annual 'trends and projections' assessments show 0.6% emissions increase in 2017 from 2016. This limited increase means that the EU is still expected to achieve its 2020 emissions reduction target, albeit by a narrower margin. However, national measures will need to be urgently stepped up to achieve the EU's new reduction targets for 2030.

While the EU remains on track to meet its 2020 emissions reduction target, updated data shows Member States cannot afford to take progress beyond that date for granted. The data clearly show a need to break further the link between emissions and economic growth. Member States must plan and deliver on ambitious policies and measures if they are to meet its 2030 targets and its Paris agreement commitments.

The slight increase prolongs a relatively stable trend in emissions observed since 2014, after a 10-year period of almost continuous reductions between 2004 and 2014. The rise is mostly due

to the increase of oil consumption from road transport. The energy sector was able to reduce its emissions due to the decreasing share of coal used to produce electricity and heat in the EU.

In the EU Emissions Trading System, emissions from stationary installations increased by 0.2% in 2017 from 2016. Power generation continues to drive emission reductions in the trading system. Emissions trends for industrial installations have been more variable, reflecting the economic developments observed in Europe over the last three trading periods. Aviation emissions from intra-EU flights, which are also included, grew by 4.5% in 2017 compared to the year before. The overall surplus of emission allowances continued to decline, for the third consecutive year, as a result of inter alia lower volumes of allowances being allocated for free.

In 2017, emissions covered by the Effort Sharing Decision (ESD) (including transport, buildings, agriculture and waste) increased for the third year in a row. The rise was mostly driven by the road transport sector. Twenty-two Member States have emitted less than their annual greenhouse gas emission targets under the ESD set for 2016. This number is estimated to have decreased to 18 Member States in 2017.

While total emissions from the entire EU remain below the 2020 target, the latest projections show that greenhouse gas emissions increased in more than half (17) of the EU Member States in 2017. The largest absolute growth in emissions occurred in Spain. Poland and France also saw large growth in emissions. The largest declines compared with 2016 occurred in Denmark, Finland and the United Kingdom.

According to preliminary data, emissions in 2017 corresponds to a 21.9% drop in emissions between 1990 and 2017. When the projections are extended to 2030 and compared with the EU's new binding target of at least a 40% reduction in domestic greenhouse gas emissions (compared with 1990 levels) by 2030, insufficient progress is shown by a vast majority of Member States. With current national policies, the pace of reductions is expected to slow after 2020 in EU ETS and Effort Sharing sectors, instead of accelerating.

According to reported projections, EU-wide reductions of emissions by 2030 will reach only 30% below 1990 levels, based on existing mitigation measures, and only 32% when additional planned mitigation measures are considered. Only six Member States project emission levels below their respective 2030 targets under the EU's Effort Sharing Regulation.

3. EU Panel Votes for Further Truck and Bus Carbon Emissions Cuts

Truck manufacturers could have to cut their vehicles' average carbon dioxide emissions in the European Union by more than a third under a draft law the European Parliament's environment committee voted on October 18. The committee voted 47-6 to increase to 35 percent a 30 percent average carbon cut by 2030, which was proposed by the European Commission, the EU's executive arm, in May. As an interim measure, truck makers would have to reduce carbon emissions by 20 percent by 2025, up from 15 percent proposed by the commission.

The targets were ambitious and would likely mean electrification in certain segments as truck makers seek ways to cut the average carbon emissions of the models they produce. Truck manufacturers would also seek fuel efficiency improvements to current combustion engines to meet the binding goal.

The full European Parliament will vote on the position during a November 12-15 sitting, and the result of that vote must then be finalized in negotiations with EU countries represented by the Council of the EU.

Truck manufacturers expressed concern that the cut would come before a baseline is established against which that cut will be measured. Under a separate EU law, heavy-vehicle manufacturers must calculate and report the carbon dioxide emissions of their new models starting January 1. That data will form the basis for measuring cuts from 2025 through 2030. Another problem manufacturers have raised is that electric recharging infrastructure for trucks in the EU is nonexistent.

The carbon reductions the European Parliament environment committee voted for would “pose major problems, as they simply do not take account of the realities and complexities of the truck market, nor the long development cycles for heavy-duty vehicles,” the European Automobile Manufacturers’ Association’s secretary-general, Erik Jonnaert, said in an October 18 statement.

The tighter targets the environment committee voted for were “very positive” because trucks make up 5 percent of the vehicles on EU roads but generate 22 percent of vehicle CO₂ emissions, environmental group Transport & Environment said in a statement October 18. According to European Commission data, a 20 percent carbon cut by 2025 would mean the owner of an average new truck in the EU would save 37,589 euros (\$43,305) in fuel costs over five years compared to a 23,438 euros (\$27,000) saving if the carbon cut by 2025 is 15 percent, Transport & Environment said.

Environment Committee MEPs also added urban buses to the scope of the proposal and proposed that 50% of new buses should be electric from 2025 and 75% should be electric by 2030. Zero-emission buses are already available on the market and their use is encouraged through measures to increase demand such as public procurement, they said.

Before 2020, the European Commission should come up with plans for a real-world CO₂ emissions test for on-road emissions, and third-party independent testing of vehicles in use and on road should also be introduced, said MEPs.

The MEPs acknowledged that a transition towards zero-emission mobility requires changes throughout the automotive value chain, with possible negative social impacts. The EU should therefore promote workers in the sector learning new skills and reallocating, particularly in regions and communities most affected by the transition. The MEPs also advocated support for European battery manufacturing.

Transport is the only major sector in the EU where greenhouse gas emissions are still rising, said the MEPs. In order to meet the commitments made at COP21 in 2015, the decarbonization of the entire transport sector needs to be accelerated, on the path towards zero-emission by mid-century.

The full House is to vote on the report during November’s plenary session in Strasbourg.

MEPs agreed to targets of 43% and 75% of new buses to be clean vehicles in 2030, and 25% to 50% of cars and vans.

The Parliament amended the proposal to align the definition of clean vehicles with the alternative fuels infrastructure directive, encompassing biofuels, natural gas, liquefied petroleum gas, and synthetic and paraffinic fuels.

In a separate vote, the Parliament called for binding targets for governments to deploy the infrastructure required for alternative transport fuels. A resolution drafted by socialist MEP Ismail Ertug calls on the Commission to introduce legislation setting targets and allocating funding for alternative fuels infrastructure. Ertug said the Commission should accelerate the revision of the directive on alternative fuels infrastructure, with strong targets and more funding.

In a third vote, the Parliament backed a 50% discount on road charges for zero emission trucks in the revised Eurovignette Directive and called for mandatory external costs for air and noise pollution from 2021.

Under the law, public authorities in EU countries would be required to ensure that a proportion of the new vehicles they buy—including buses, trucks and vans—produce either no or very low emissions of carbon dioxide, the main driver of climate change. The minimum requirements would apply in 2025 and would be tightened in 2030.

The law would set per-country minimum requirements for low-emission bus purchases. For example, from 2025, 50 percent of the buses purchased by public authorities in countries including Austria, Belgium, Germany, and Sweden would have to be low- or zero emission, rising to 75 percent by 2030. For less-wealthy eastern European EU countries, the 2025 proportion would range from 29 percent for Romania to 46 percent in the Czech Republic and 47 percent in Lithuania.

Low- or zero emission buses would include vehicles running on natural gas, hydrogen, and electricity.

In practice, EU bus manufacturers already sell hybrid and electric models. The EU law, if finalized, should reinforce that trend.

The electrification of public transport in the EU also would reduce the presence in urban areas of other pollutants, including health-endangering nitrogen oxides. Nitrogen oxides emissions are generated, in particular, by diesel buses and other vehicles.

4. Member States Reach Agreement on CO2 Targets For Cars and Vans

European Union member states have agreed to seek a 35 percent cut in emissions for new cars and vans by 2030. Several countries had sought a higher, 40 percent reduction in line with targets recently backed by EU lawmakers, with Ireland and the Netherlands among those voicing disappointment with the compromise deal.

Germany, with its big auto sector, warned that overly challenging targets risked harming industry and jobs. Berlin had backed an EU executive proposal for a 30 percent cut by 2030, compared with 2021 levels.

Germany, with the backing of eastern European nations, had held a blocking minority among the 28 nations against the more ambitious targets, EU sources said. But a last-minute amendment helped ease concerns among poorer member states over the new rules, which also create a crediting system encouraging automakers to raise sales of electric cars. It would allow for a

different accounting in countries where the current market penetration of zero- and low-emissions vehicles is less than 60 percent below the average in the bloc.

"Although the CO2 reduction levels agreed on by the member states yesterday are less aggressive than those voted by the European Parliament last week, they still risk having a negative impact on industry competitiveness, auto workers and consumers alike," Erik Jonnaert, head of the European automakers' lobby group ACEA, said in a statement.

ACEA said the benchmark system to incentivize zero- and low-emissions vehicles proposed by the European Commission and member states, gives the right signal to industry and consumers. "However, the association remains concerned that the penalty-based system supported by Members of the European Parliament last week – combined with high sales quotas – is not in line with reality and would interfere with the principle of technology neutrality," it said.

Europe's Climate Commissioner Miguel Arias Canete said the compromise gained the support of 20 nations, with 4 voting against and 4 abstaining.

The deal includes a 15 percent reduction target for cars and vans in 2025. A controversial derogation of niche manufacturers making up to 300,000 cars was extended, notably benefiting Jaguar Land Rover.

Torn between reducing pollution and preserving industry competitiveness, EU environment ministers met in Luxembourg and talked for more than 13 hours until nearly midnight to reach a compromise. The final rules will now be hashed out in talks with the EU's two other lawmaking bodies: the European Parliament, which is seeking a more ambitious climate target, and the European Commission, which proposed a lower one.

Curbs on the transport sector, the only industry in which emissions are still rising, aim to help the EU bloc meet its goal of reducing greenhouse gases by at least 40 percent below 1990 levels by 2030.

Manufacturers will also have to ensure that zero- and low-emission vehicles (which emit at least 50% less) represent a 20% market share of the sales of new cars and vans by 2030, and 5% in 2025.

5. EU Presidency Declares 'Green Deal' For Transport

The Austrian presidency of the EU declared a new era of clean mobility in Europe after environment and transport ministers agreed to work towards a "green deal" for mobility with proposals to speed up deployment of clean vehicles and promotion of 'active mobility'. At an informal Council meeting in Graz, Austria, ministers discussed a declaration tabled by the presidency committing the EU to decarbonization of the transport sector through a series of policy and funding proposals to meet the bloc's 2030 and 2050 climate objectives.

The 'Graz Declaration', which will be addressed at Council meetings in the coming months, calls for more ambitious and transformational policies to meet the Paris objectives and tackle air pollution.

The European Commission and member states should accelerate the introduction of low- and zero-emission vehicles and the development of charging infrastructure, the declaration says, including through post-2030 emission regulations. Member states and MEPs are currently

negotiating contentious proposals for CO2 emissions reductions for cars up to 2030, while Parliament and the Council are still debating their positions on targets for trucks.

Parliament recently called for binding targets for governments to deploy the infrastructure required for alternative transport fuels.

Ministers at Graz also considered proposals for a sustainable mobility management and planning strategy, the inclusion of health benefits of 'active mobility' in analyses for TEN-T connecting Europe fund projects, a commitment to acknowledging "human-powered mobility" as an equal mode of transport, and a call for EU funding for active mobility projects.

6. Volkswagen CEO Slams Stricter Regulations; Hopes For 'Diesel Renaissance'

In an effort to further reduce its carbon footprint, the European Union has proposed new regulations that would require carmakers to reduce their vehicles' emissions substantially by 2030. If approved, passenger cars manufactured in the region have to reduce their emissions output by 35%. The proposed regulations, while strict, are lower than the EU Parliament initially decided, a 40% reduction.

Despite the adjusted regulations, Volkswagen CEO Herbert Diess is not happy. In a statement to German news publication Süddeutsche Zeitung, the VW CEO warned that such changes would likely result in damages to the auto industry. If the EU decides to pursue its 35% CO₂ limit for passenger cars by 2030, Diess notes that Volkswagen would likely put around 100,000 jobs at risk. The CEO stated that a 30% reduction in emissions by 2030 would be a lot more preferable.

"Such an industry can crash faster than many believe. The transformation in speed and impact is difficult to manage," Diess said.

The Volkswagen CEO's warning comes amidst the auto giant's recent announcement about its initiatives to push and promote electrified transport, including a ~\$7 billion investment into the company's e-mobility program. Volkswagen AG has noted that it is aiming to produce around 3 million electrified vehicles per year by 2025 across its different brands. The German auto conglomerate has also expressed its intention to commit to battery technology, supporting the development of solid-state batteries.

If the VW CEO's statements are any indication, though, the shift of the auto industry towards electrification, as well as mandates for cleaner air from the EU, could be a bit too drastic for legacy automakers. That said, the auto industry is already being populated by more and more electrified vehicles, including all-electric cars like the Tesla Model 3, which is starting to chip away at the sales of established brands in the US auto market. Other vehicles, such as Tesla's Model Y, as well as offerings from emerging EV companies like NIO, are set to make the auto industry even more electrified in the near future.

Amidst its heavy investments in electrified transport, Volkswagen noted last month that it is actually hoping for a "diesel renaissance." Volkswagen CEO Matthias Müller, for one, is counting on the driving public to be welcoming to diesel-powered transport once more. Overall, VW remains optimistic about the potential of diesel-powered cars.

"Diesel will see a renaissance in the not-too-distant future because people who drove diesels will realize that it was a very comfortable drive concept. Once the knowledge that diesels are eco-friendly firms up in people's minds, then for me there's no reason not to buy one," Müller said.

Müller's hopes of a "diesel renaissance" carries a bit of irony, considering that one of its brands, Porsche, recently announced that it is completely abandoning diesel vehicles from its lineup. Porsche is also doing real-world tests on the Taycan, its first all-electric car that's designed to compete against the Tesla Model S. Porsche plans to release the Taycan next year, with the vehicle being company's flag-bearer until it creates an electrified fleet by 2025. Today, the Taycan is conducting road tests in several regions across the globe.

7. Court Orders Diesel Ban On Some Berlin Streets

Diesel drivers in Berlin faced the prospect of bans from major arterial roads as a court ordered the German capital to follow in the footsteps of Hamburg, Frankfurt and Stuttgart with exclusion zones.

"The current clean air plan does not include sufficient measures to meet annual limits for nitrogen dioxide (NO₂)," the Berlin judges said. To bring down levels of the harmful pollutant, city authorities "must order a driving ban for the streets where the threshold is not met," targeting vehicles up to the Euro 5 emissions standard.

Definite exclusion zones include 11 stretches of major arteries like the north-south axis Friedrichstraße and the east-west Leipzigerstraße.

Meanwhile, the city-state's government must also examine whether driving bans are needed to bring down NO₂ levels on a further 15 kilometers of road in 117 different sections - a tiny fraction of Berlin's total 5,343 kilometers of streets.

Authorities must produce a new version of their clean air plan implementing the court order by March 31st. After that, "driving bans must be implemented within two to three months," the judges said.

But they allowed officials the option to appeal the decision to a higher Berlin court.

Port city Hamburg has already closed stretches of two major roads to older diesels, while Porsche and Mercedes-Benz base Stuttgart will ban them from much of its territory from next year.

Judges also recently ordered a ban in the city center of Frankfurt, Germany's financial hub that sees an influx of tens of thousands of commuters each day.

8. Germany's Merkel Promises Legislation To Ward Off Diesel Driving Bans

German Chancellor Angela Merkel, campaigning for her Christian Democrats (CDU) to retain control of the crucial state of Hesse in the upcoming election, promised legislation to ward off the threat of air pollution leading to driving bans. Speaking at a news conference, Merkel said it would be disproportionate to ban dirty diesel cars from the road in places like Frankfurt, Hesse's largest city, where nitrogen emissions limits were only marginally exceeded.

Following her allies' disastrous showing in Bavaria's regional elections, Merkel faces murmurs of dissent within her party. Defeat in the state to the resurgent Greens could prove fatal to her premiership.

Emissions from diesel cars have pushed nitrogen levels above the permitted level of 50 milligrams per cubic meter in dozens of cities across Germany, and Merkel's government is keen to avoid wildly unpopular bans on taking the cars on the road. "Driving bans are disproportionate when it comes to small excess pollution levels," she said. "We want to change the law ... That is a very important piece of information for a city like Frankfurt."

The new legislation would enshrine in law that driving bans were not proportionate in cases of a small excess such as in Frankfurt, where nitrogen levels stand at 57 micrograms, since deployment of cleaner buses and other measures would be sufficient to rein in pollution levels before 2020.

Striking a populist note, she placed herself firmly on the side of consumers when it came to the cost of expensive retrofitting of vehicles that might be needed in cities where excess pollution is substantial. "We are on the side of owners of diesel cars and are clear that they should suffer no financial harm," she said. "We believe the car industry bears responsibility because it has massively undermined trust in it."

A series of scandals involving schemes to conceal the true levels of pollutant emissions from diesel cars has dealt repeated blows to the global reputation of Germany's car industry in recent years.

In a blow to Merkel's efforts to avoid driving restrictions, Germany's top administrative judges raised the prospect of banning diesel vehicles from city centers in a landmark ruling in February, affecting millions of car owners.

Consumers turning away from diesel undermines a key plank in the strategies of German carmakers to meet tightening European Union emissions standards from 2021. Diesel is profitable and more fuel efficient than corresponding gasoline engines, and the decline in the technology has prompted increased investment in electric vehicles.

Germany's Greens, who are set for another strong performance in Hesse after increasing their support in this month's Bavarian election, accused Merkel of shielding automakers. "It's a disgrace that the government always protects the car industry," Katrin Goering-Eckardt, co-head of the Greens' parliamentary caucus, said in an interview with n-tv on October 21.

9. How European Cities Are Battling Diesel-Polluted Air

As noted above, a Berlin court recently ruled that older diesel cars must be banned from some major roads in the German capital. Here are how other major cities around Europe are looking to bring down harmful nitrogen oxides (NOx) pollution.

Hamburg: full steam ahead -

In May, Germany's northern port city became the first in the country to issue a driving ban against older diesels, targeting stretches of two main roads. Proposed bans are looming in other cities including Frankfurt, Berlin and even car industry bastion Stuttgart.

Paris: a grand day out -

In the City of Light, authorities have decreed one car-free Sunday each month in central districts between 11 a.m. and 6 p.m., except for major axes.

More occasionally, more extensive no-car days allow pedestrians to meander along historic avenues like the Champs-Elysees untroubled by traffic.

Elsewhere, some of France's most-polluted cities like Marseille, Lyon, Nice and Strasbourg are implementing "low emissions zones" to shut out the dirtiest vehicles.

Rome: weight of history -

Roman officials vowed in February to ban private diesel vehicles from the Eternal City from 2024.

And since 2013, a detour has shielded the ancient arena of the Colosseum from blackening car exhausts.

Fashion and finance hub Milan, meanwhile, will exclude diesel vehicles from 2025 and plans to achieve "all-electric" status by 2030, shutting out internal combustion engines altogether.

Brussels: hefty fines -

Success for the Belgian and EU capital's pedestrian zone around the central Grand Place -- allowing only cyclists, taxis and some delivery vehicles -- has been limited, pushing up NOx levels in other city districts as traffic was diverted.

From January this year, a "low-emissions zone" or LEZ has been in effect, shutting out the most polluting diesels and ratcheting up the number affected each year. Infringers can expect to pay a 350 euro (\$400) fine.

London: toxic tax -

One of Europe's most polluted cities, London has imposed a "toxic charge" of 10 pounds (11.40 euros, \$13.04).

That levy comes on top of the 11.50 pounds daily "congestion charge" drivers have paid to enter central London from Monday to Friday since 2003, which has exceptions for electric and low-emissions vehicles.

Madrid: cut-off date -

From November 23, Spaniards driving diesels built before 2006 will be barred from the streets of Madrid, with a more forgiving date of 2000 for petrol cars.

The measures affecting up to 20 percent of vehicles registered in the city are expected to reduce nitrogen dioxide (NO2) emissions by 40 percent.

Amsterdam: cycling instead -

Cycling-mad Amsterdam has made driving a luxury option, charging an annual fee for a windscreen badge allowing drivers to park their private cars on the street.

Meanwhile, giant bike parks are strewn around the city at strategic spots like main train stations, making it as easy as possible to switch to from four to two wheels.

Oslo: circle the wagons -

While the Norwegian capital can issue outright diesel bans on the most polluted days, usually in winter, it is also deterring inner-city driving by slashing parking spaces, blocking direct car routes through the city center, pedestrianizing some streets and raising toll charges.

10. Germany Faces Billion-Euro-Bill For Not Meeting Climate Targets In EU Effort-Sharing

Germany faces fines to the tune of two billion euros by 2020 for failing to meet emissions reduction targets in sectors not covered by the European Emissions Trading System, Andreas Mihm writes in the Frankfurter Allgemeine Zeitung. The German government will have to buy up emissions allowances from other states with a better record of meeting the EU targets, especially from Eastern Europe, the article says. So far, Germany was able to compensate for missing certain targets through saving more emissions than formally necessary in other areas, "but since October, every additional ton of CO₂ will have to be paid for straight from the state's budget," a situation that did not exist before, says Hans-Jochen Luhmann of the Wuppertal Institute for Climate, Environment and Energy. The exact bill that Germany will have to foot depends on the price for carbon emissions that is derived from the European Trading System, but the German government so far has not included the expected additional costs in its budget planning, Mihm writes. In an answer to a parliamentary inquiry by the pro-business party FDP, the government says it cannot confirm calculations by the Institute for Applied Ecology that the EU's effort-sharing might cost up to 30 billion euros by 2030. "The EU member states are not obliged to reveal the costs for emissions allowances transfers," the government says, adding that the exact bill could therefore not be calculated and that it would "not take part in speculation."

11. Diesel Exhaust to Get Workplace Limits in Europe

Hundreds of thousands of workplaces across the European Union will be affected by exposure limits on eight carcinogenic substances, which were approved by representatives from the bloc's member countries October 24. In particular, thousands of vehicle repair centers, factories, transportation companies and other employers will need to comply with a first EU-wide exposure limit on diesel exhaust of 0.05 milligrams per cubic meter of air in the workplace.

Companies would have to take preventative measures if their workplaces exceed that level.

The limits are being introduced under the EU Carcinogens and Mutagens Directive (2004/37/EC) and also cover mineral oils recovered from internal combustion engines and the compounds trichloroethylene, epichlorohydrin, ethylene dibromide, ethylene dichloride, and polycyclic aromatic hydrocarbon mixtures.

The Council of the EU, which represents the governments of the bloc's member countries, said in an October 24 statement the exposure limits would improve protection for at least 4 million workers and would prevent about 2,000 premature cancer deaths per year.

Tony Musu, a senior researcher with the European Trade Union Institute, told reporters the exposure limit for diesel fumes is especially significant because of the "millions of workers exposed in the EU" to this type of pollution.

The limits don't prevent the bloc's countries from imposing tighter standards or regulating substances not covered by the directive.

The European Parliament must still vote on the exposure limits, and they must be formally approved by ministers from EU countries. Both institutions have informally agreed on the limits, and final approvals are seen as a formality.

Employers can minimize fumes through better ventilation or by switching to electric engines for vehicles or machinery, Musu said. One aim of the exposure limit for diesel fumes was to "push the employers to phase out diesel engines," he said.

EU countries would have two years to write the limits into their national laws after final adoption of the limits at EU level, meaning the exposure limits would likely take effect starting in 2021.

12. Oslo Takes Bold Steps To Reduce Air Pollution, Improve Livability

Norway's capital city Oslo, home to over 670,000 people, is boldly pushing forward with a range of measures to improve air quality for the city's inhabitants. Oslo is one of 42 cities who take part in Breathe Life, a campaign led by the World Health Organization, UN Environment and the Climate & Clean Air Coalition that inspires cities and individuals to protect our health and planet from the effects of air pollution.

Zero-emission vehicles play a key part in the city's strategy to reduce CO₂ equivalents by 95 per cent in 2030, and city officials are encouraging people to make the transition to electric vehicles. Benefits for drivers include reduced taxes, access to bus and taxi lanes, free travel on toll roads and public ferries, and free municipal parking. Over 1,000 charging stations have been added in recent years.

Meanwhile, all public transport in Oslo and neighboring Akershus county is to be powered exclusively by renewable energy by 2020.

Since 2012, electric vehicles have contributed to a 35 per cent decrease in CO₂ emissions in the city, improving air quality and public health. Oslo now has the highest number of electric vehicles in the world per capita.

Since 2017, the center of Oslo has been undergoing profound changes. Pedestrians and cyclists are allowed precedence over private cars, and an area of approximately 1.3 km² will become car-free by 2019. Oslo also plans to repurpose around 700 street parking spaces for other uses.

The city of Oslo says that the primary focus of the changes in the city is to improve city life and reducing traffic from private cars is used as a means to achieve this. The areas previously occupied by cars can now be used by the community including the municipality itself, organizations, businesses and inhabitants to everything from outdoor dining, culture activities, art, bicycle stands or playgrounds. Oslo aims to gradually transition to a totally car-free city.

Part of this process involves promoting alternative means of transport. Oslo is home to an extensive and convenient bike-sharing scheme. Bikes can be found at 200 stations in and around the city center.

Oslo is already considered a global front runner with its circular based waste management system. All waste produced in the city becomes raw material either in the production of new

products such as new plastic products, bio methane, bio fertilizer or as heat and electrical power. Moreover, biogas produced from bio-waste and city sewage is used to power Oslo's buses and waste trucks.

Thanks to these and other changes, Oslo has been commended for its good air quality. The city won the title of European Green Capital for 2019. The award honors green urban achievements. Some of the indicators for being a green city include air quality, local transport, biodiversity, waste management and reduced noise levels.

Meanwhile, a Greenpeace report noted that Oslo was the only city in their analysis that has emissions below both the European Union limit and the World Health Organization guidelines.

"I am very proud of my hometown, Oslo, which is demonstrating that by reducing the number of polluting vehicles and introducing policies that encourage a cleaner future, we can improve the everyday lives of citizens as they can breathe cleaner air," said Erik Solheim, Executive Director of UN Environment. "Oslo is aiming to dramatically reduce greenhouse gas emissions and at the same time it is turning climate action into an opportunity. I hope that other cities around the world will be inspired by what Oslo is doing."

In 2016, Oslo introduced a 'climate budget', an initiative consisting of 42 separate measures across three sectors: energy and the built environment, transport, and resources. Carbon dioxide emissions are now being counted in the same way a financial budget would account for funding.

The city has also established the 'Business for Climate Network' to stimulate cooperation between the business community, non-governmental organizations and citizens to address the impact that businesses have on the climate.

International cooperation is also key for Oslo to work towards a zero-emission, resilient and green future. The city supports various initiatives including C40 Cities Climate Leadership Group, the Carbon Neutral Cities Alliance ICLEI - Local Governments for Sustainability and Eurocities.

13. Inquiry Chair Criticizes Lack Of National Action On Dieselgate

National authorities have largely failed to act over cheating by car manufacturers to beat car emissions tests, the chair of a European Parliament inquiry has said after receiving a follow-up report from the EU executive.

Kathleen Van Brempt, vice-president of the Socialists & Democrats group, said governments had not only failed to report, but failed to act on recalling affected Volkswagen group vehicles. "Three years after the Dieselgate scandal, only three-quarters of the affected Volkswagen group vehicles have undergone software updates, which means that 1.8 million fraudulent VW-vehicles are still circulating on EU roads," Van Brempt said.

"In addition, corrective measures on vehicles of other car manufacturers equipped with defeat devices are lagging behind," the Belgian lawmaker added.

The S&D group said the Commission's report, while outlining action taken by the executive itself, was "silent" on measures taken by national governments, "especially regarding the enforcement of the legislation and remedial action against fraudulent car manufacturers".

The group's spokesman on the EMIS inquiry committee, MEP Seb Dance, noted that legislative changes made in the wake of the dieselpgate affair would give the Commission greater powers after 2020 to test vehicles on the market, order recalls, and impose fines on carmakers.

“Unfortunately, it looks like member states are less eager to bring transparency to the automotive sector. We regret their lack of engagement and lack of action to deliver clean air to their citizens,” Dance said.

A summary of the state-of-play regarding recalls of VW brand vehicles involved in cheating emissions tests, appended to the Commission's report, shows wide disparities between the achievements of different EU members. Only eight of 28 had ordered mandatory recalls by September this year.

Germany was in the lead with 98% recalled under a mandatory scheme. The UK, where the recall was voluntary and overseen by carmakers, recorded a 73% recall rate. Fewer than half of affected vehicles were recalled in Romania, Poland, Slovakia, Malta, Lithuania and Bulgaria.

Even more worrying, Van Brempt said, was the fact that the software patches applied in recalled cars appear to have been ineffective. “Testing done by the [European Commission's] Joint Research Centre on cars before and after recall show higher emissions after the software update,” she said.

14. U.K. Lawmakers Call for Ban on Combustion Engine Cars in 14 Years

Britain should ban gasoline and diesel fueled cars by 2032 to speed up a shift toward zero-emissions vehicles, a panel of lawmakers from the main parties in Parliament said. The Business Energy and Industrial Strategy Committee in the House of Commons said the government should implement the ban by 2032, eight years earlier than the current target, and that failing to do so would undermine promises to reduce air pollution by over two thirds by 2050.

The recommendations indicate pressure on Prime Minister Theresa May to step up efforts on protecting the environment. While the government has said it wants to be a world leader in rolling out electric cars, the panel said that ambition will require more support for companies to deploy the charging infrastructure necessary to spur a shift away from fossil fuels in transportation.

“For all the rhetoric of the U.K. becoming a world leader in EVs, the reality is that the government’s deeds do not match the ambitions of their words,” said Rachel Reeves, chair of the Business Energy and Industrial Strategy Committee. “The U.K. government’s targets on zero-emissions vehicles are unambitious and vague, giving little clarity or incentive to industry or the consumer to invest in electric cars.”

The report titled “Electric vehicles: driving the transition” called on government to increase investment and ease consumers’ concerns over switching to a zero emission vehicle.

In July 2017, the U.K. pledged to ban the sales of traditional combustion engine vehicles by 2040. It was part of a push to invest over 800 million pounds (\$1 billion) in driverless and zero-emission technology. That included 246 million pounds of investment in battery technology research.

At least 17 million zero-emission vehicles may be on British streets by 2040, a separate report showed. That would require 3 million charging points and billions of dollars of investment, said

Aurora Energy Research Ltd. Bloomberg NEF estimates that new EV car sales could grow to 60 million a year by 2040.

The U.K. has reduced its emissions by 40 percent since 1990, largely because of a commitment to stop burning coal by 2025.

The recommendations to bring forward the commitments to move away from selling combustion engine vehicles was broadly welcomed by industry groups and environmentalists. However, the report comes days after the U.K. government announced it was cutting grants for plug-in electric vehicles by 1,000 pounds.

15. New Emission Tests Lower EU Car Sales In September

Car sales slumped across Europe in September, industry data showed, with the hangover from a sales binge before new emissions tests came into force knocking Volkswagen out of its traditional top spot in monthly sales. At 1.09 million, passenger car sales were down 23.5 percent in the 28-member European Union last month compared with September 2017, the European Automobile Manufacturers' Association (ACEA) said in a statement.

"This should not come as a surprise, as the introduction of the new WLTP test at the beginning of last month caused an exceptional surge in registrations in August" as carmakers rushed to squeeze through older models ahead of the cutoff, ACEA commented.

Sales had jumped by nearly a third in August, traditionally a soft month for car sales as many Europeans are on vacation, as carmakers discounted vehicles that hadn't been certified using the new WLTP test.

The new EU-wide test procedure is one front of authorities' reaction to VW's 2015 admission to mass cheating on diesel vehicles, with suspicions since spreading to other manufacturers.

VW—Europe's largest car group by sales volume—was the hardest hit by the introduction of the new tests. It shifted 172,000 cars last month compared with 330,500 in September 2017, ceding the top spot in monthly sales to France's PSA. The 48-percent sales plunge was much steeper than that for Italy's Fiat, which saw a drop of 31.9 percent and France's Renault which fell 27 percent.

Sales of VW's own-brand cars were down 52 percent, while luxury subsidiary Porsche saw a near 70-percent collapse.

"We'll continue to see effects in October" from WLTP, VW sales chief Christian Dahlheim said, while predicting "stronger months" to follow.

German competitors have faced less dramatic sales cliff-edges, with BMW down 8.6 percent and Mercedes-Benz maker Daimler shedding 11.8 percent in September. In France, PSA—which owns Peugeot and Citroen as well as German manufacturer Opel—lost just 7.7 percent of sales.

Looking beyond the September slump, August's sales surge has helped manufacturers keep their full-year figures positive. In the first nine months, VW's sales were up 5.6 percent year-on-year at 2.89 million units. PSA added almost 55 percent, at 1.93 million, thanks in large part to its acquisition of Opel. Renault saw 6.5-percent growth to 1.28 million vehicles.

Meanwhile Fiat and BMW both reported small decreases, while Daimler's sales were down 4.5 percent.

16. Italy Sales Plunge 25% On WLTP Change

New emission testing standards that went into effect September 1 had a decisive — and punishing — impact on registrations in Italy, with sales plummeting 25 percent to 124,976 units, according to figures published by Italy's Ministry of Infrastructure and Transport.

After pushing deliveries up in July and August, when some carmakers had to register older vehicles that no longer would be compliant after September 1, the new emission standards — known as the Worldwide Harmonized Light Vehicle Test Procedure — triggered the September fall. Many automakers had not yet homologated some models according to the new WLTP rules. In addition, September 2018 had one less working day than the same month of 2017.

Diesel sales in September suffered more than the average, down 38 percent versus a 6 percent decline for gasoline cars and a 28 percent increase in hybrid-car registrations. Registrations of full-electric vehicles rose 169 percent but still accounted for less than 0.4 percent of the market. Cars powered by liquid petroleum gas and compressed natural gas also lost ground, with sales down 24 percent and 63 percent, respectively.

The diesel market share was down to 47.9 percent in September, the lowest since March 2010, according to the ANFIA industry association. Year to date, the diesel share declined to 53.3 percent from 56.8 percent at the same point in 2017.

Diesel bans in cities are starting to take their toll. According to the UNRAE importers association, diesel registrations by individual private customers declined 16 percent countrywide in the first eight months. Cities that are implementing curbs on diesel cars saw bigger drops with diesel sales down 22 percent in Rome, 29 percent in Milan and 37 percent in Turin, UNRAE said.

September sales by market leader Fiat Chrysler Automobiles dropped 40 percent, with a historically low market share of 22.7 percent. In the same month last year, that share was 28.3 percent. Sales of the flagship Fiat brand fell 43 percent, Alfa Romeo lost 63 percent, Jeep declined 15 percent and Lancia sales were down 28 percent. Bucking the trend was the premium brand Maserati, whose sales rose 19 percent.

Among foreign carmakers, the Volkswagen brand took first place despite a 30 percent drop in registrations. Europe's best-selling car — the VW Golf, which was the 11th-most-sold car in Italy in the first half — was out of the top 50 in September because the company had not completed homologation tests according to the WLTP emissions test. Within the VW Group, Seat sales were down 39 percent and Skoda 8.2 percent.

Peugeot sales were 6.4 percent lower in September, while sister brands Citroen and Opel both dropped 15 percent. Renault registrations fell by nearly half — off 49 percent — with sister brand Dacia suffering a 34 percent fall. Ford deliveries were down 9.6 percent.

Among Asian brands, Toyota bucked the negative trend in September sales with a 4.7 increase, while Nissan registrations declined 38 percent. Hyundai registrations fell 16 percent, while sister company Kia reported an 11 percent rise.

German premium brands also suffered, with Audi sales down 51 percent, BMW 16 percent and Mercedes-Benz 10 percent.

For the first nine months, overall registrations in Italy are down 2.8 percent to 1.49 million units.

17. Fiat Reportedly Ends Production Of Panda Diesel

Fiat Chrysler Automobiles reportedly halted production of the diesel version of the Fiat Panda minicar on September 1. The decision to stop production of the diesel Panda is part of FCA's new business plan announced June 1 at the automaker's capital markets day. Former CEO Sergio Marchionne, who died July 25, said then that the automaker will "phase out diesel engines on all passenger vehicles by 2021."

The Worldwide harmonized Light vehicles Test Procedure emissions tests, which went into effect in Europe September 1, most likely accelerated the decision to drop the diesel Panda.

The 1.3-liter diesel engines for the Panda were produced in the FCA plant in Bielsko-Biala, Poland.

According to market researchers JATO Dynamics, Fiat sold 111,002 Pandas in Europe through August, down 15 percent from the same period of 2017. The diesel share was 15 percent, with 17,159 units sold. Most Pandas are sold in Italy — 77,636 by the end of August or 70 percent of the total.

According to the FIM-CISL Italian union, 134,202 units of the Panda were produced by the Pomigliano plant through September, down 16 percent from the same period of 2017. FCA does not publish production figures by plant or model.

The 1.3-liter diesel engine is also offered in the Fiat 500, which is based on the same platform as the Panda. The 500 diesel, which is also being phased out, accounted for just 4 percent of 500s sales through August, according to JATO Dynamics. Diesel versions of the Fiat 500 are currently available in a few European countries as "end of stock" vehicles.

The two minicars accounted for 47 percent of Fiat brand car sales in Europe in the first eight months — more than half of sales if cars derived from light commercial vehicles are excluded. According to the 2018-22 business plan laid out by Marchionne on June 1, the 500, its derivatives and the Panda will be the core of the Fiat brand in Europe in the future.

While a new battery electric 500 is expected in 2020, the Panda engine range is expected to remain centered on gasoline, with the possible addition of mild-hybrid versions.

18. Audi Agrees To Pay \$926 Million Fine In Dieselgate Scandal

Three years after the emission cheating scandal rocked the auto industry, Volkswagen subsidiary Audi has now agreed to settle a regulatory probe by paying a \$926 million fine in Germany. With the latest settlement, the total cost of the dieselgate scandal has been lifted to \$32.7 billion globally.

Audi said it does not plan to appeal against the fine, which was slapped due to a discrepancy in regulatory requirements of certain V6 and V8 diesel motors and diesel vehicles. The fine is expected to hurt Volkswagen's earnings directly and lower the group earnings for fiscal 2018.

The total scandal cost, which equals 12% of the company's annual sales in the previous year, is expected to mount due to the large amounts of pending lawsuits with damage claims of over \$10.4 billion.

In September 2015, emission test violations were first unearthed by the US Environmental Protection Agency (EPA). This resulted in \$29 billion in losses due to nearly a 40% dip in the company's stock. Since then, about \$30 billion has been spent by Volkswagen in the form of settlement, product recalls and penalties.

The company has already experienced a loss of credibility and customer confidence around the globe due to the emission debacle. Volkswagen had earlier this year tried to put things back on track by appointing Herbert Diess as the CEO.

The litigation is predicted to take over a year for final judgment due to the magnitude of the issue. If the judgment is negative, it could dent Volkswagen's balance sheet, and in turn other strategic plans for the next few years.

19. Three Audi Employees Investigated in Probe of Vehicle Certifications

German prosecutors have launched an investigation into three employees of Volkswagen AG's luxury car unit Audi suspected of falsifying documents to obtain roadworthiness certifications needed for vehicles to be exported to South Korea, a Munich prosecutor said. "We have three suspects, but there could be more," Karin Jung, a Munich prosecutor, told The Wall Street Journal. The three are suspected of manipulating test results and mileage readings of the vehicles and falsifying the serial numbers, the prosecutor said.

This is one of several probes of Audi stemming from the 2015 admission by Volkswagen that it rigged millions of diesel-powered vehicles to cheat on emissions tests, although it isn't directly related to the emissions cheating. Former Audi CEO, Rupert Stadler, ousted by Volkswagen last month, has been in jail since June on allegations that he tried to tamper with witnesses in the diesel probe.

Audi, one of Volkswagen's main profit engines, also faces strong headwinds in its European business in the wake of a new emissions-testing regime. Audi's European sales fell 56% in September and are down 7% so far this year.

Audi and some other European auto makers have suffered delays in certifying vehicles under the emissions testing rules that took effect in September, causing a drop in sales. German auto makers have also been hit by falling demand for diesel vehicles. The company's sales world-wide are up 2% to 1.4 million so far this year, thanks to 15% growth in China and 4% growth in the U.S.

The new probe, first reported by German daily Süddeutsche Zeitung, is linked to a case that saw one Audi executive convicted of fraud in South Korea last year. The executive, a Korean national who wasn't identified by the courts, was sentenced to 18 months in prison for falsifying documents to achieve certification of the vehicles for export to South Korea.

When Munich authorities raided Audi's offices in connection with the diesel probe in March last year, they found an internal report related to South Korea. The report summarized findings of an internal investigation into the situation in South Korea.

After studying the report and in light of the investigation in South Korea, Munich prosecutors launched a new investigation into alleged fraud, initially targeting three Audi employees. “I can confirm that there is an internal report about this matter that was confiscated by a search of our offices in March 2017,” Audi spokesman Jürgen de Graeve said in an emailed response.

Audi didn’t share the results of its internal probe with authorities. The Munich prosecutor said, however, that Audi was under no legal requirement to alert authorities.

20. Vehicle Choice Can Significantly Reduce Driver's Air Pollution Exposure

Could switching to zero emission capable taxis potentially halve exposure to toxic exhaust pollutants? According to findings from new research, London taxi drivers experience twice as much exposure to air pollution at the wheel compared to outside of work, but their choice of vehicle can make a very significant difference.

The study into air quality by King’s College London’s Environmental Research Group (ERG) monitored drivers of both diesel and electric taxis, measuring particulate matter and nitrogen dioxide inside and outside of their working environments. It found that drivers of diesel taxis are exposed to pollution levels 1.8 times higher than those driving an electric model.

Part-funded by LEVC, manufacturer of the iconic black cab, this study forms a portion of the wider Diesel Exposure Mitigation Study (DEMiSt) research project funded by the Institution of Occupational Safety and Health (IOSH), which aims to understand the determinants of urban pollution exposure to professional drivers for a range of occupations, vehicle types and driving conditions.

This first-of-its-kind research program also seeks to understand whether there are certain behaviors professional drivers can adopt to minimize their exposure to air pollution.

Taxi drivers, like all people working on urban roads for a living, risk exposure to high levels of air pollution. LEVC and IOSH commissioned King’s College London to carry out a detailed study to determine taxi drivers’ exposure under real-world city driving conditions, gathering measurements in LEVC’s TX electric taxi and the previous generation TX4 diesel taxi.

Ten London taxi drivers were recruited and each cabbie was provided with a portable black carbon monitor (which is a proxy for diesel exhaust exposure) with an inbuilt GPS unit. This was supplemented by NO₂ monitoring equipment. Five of the vehicles were TX models with the other half being TX4 diesels. The small sample size reflects the labor intensity required to undertake such research and is typical in personal exposure studies. Despite this, over 390 hours of taxi drivers’ air pollution data was analyzed.

In-vehicle concentrations were measured over a period of four full working days during summer 2018. Initial analysis found that while cab drivers face the same level of exposure to poor air quality as other commercial vehicle drivers, and experience double the exposure at work compared to outside of work, their choice of vehicle made a very significant difference.

Average exposure to nitrogen dioxide and black carbon (a component of fine particulate matter – PM_{2.5} – which results from incomplete combustion of fossil fuel) during a standard shift was 1.8 times higher for drivers of the older diesel taxi compared to the all-new TX electric cab.

King's College London hypothesize that the reduction in exposure for drivers in the TX electric cab isn't down to the fuel type alone, but also due to the TX's improved air tightness and ventilation system over the older model, reducing infiltration into the cab. Like many premium modern vehicles, the TX has a multi-filter system that works to remove gases and particles from the incoming air.

However, simple driver behaviors can also play a significant role in cutting air pollution exposure.

Lead researcher Dr Benjamin Barratt of King's College London said: "Lowest pollutant exposures were observed – particularly in the case of the TX – when the vehicle's ventilation settings were set to recirculate and with the vehicle's windows closed. This combination was found to reduce exposure by up to 67%, suggesting that these changes could mitigate pollutant exposures for these drivers.

"For the older vehicle, we believe that the vehicle's cabin is not as air tight and therefore allows outside traffic emissions to infiltrate the cabin, even when the windows are closed."

Taxi drivers are keen to switch to the cleaner cab – and nearly 600 already have – but there's more Transport for London (TfL) and the Mayor can do to help. We need a realistic decommissioning scheme, and TfL must work with the boroughs to install more rapid charging points for taxis. Drivers need to feel confident when buying the taxi that they can charge it wherever they are in London and get back to work as quickly as possible."

This experiment forms part of a large-scale, two-year study by the Environmental Research Group at King's College London funded by IOSH. Its overarching aim is to understand the risk of harm to professional drivers from exposure to diesel exhaust emissions so practical risk reduction strategies can be developed and implemented.

The researchers are currently recruiting 200 professional drivers of taxis, vans and trucks from across a range of sectors to be monitored for this research.

More detailed advice on how professional drivers can minimize their exposure to air pollution will be produced upon completion of the full IOSH study in 2019.

21. New Figures Deal Fresh Blow To Spain's Fight Against Air Pollution

Spain's Ministry for Ecological Transition has released air-quality data for 2017 that show a slight spike in nitrogen dioxide (NO₂) and particulate matter (PM₁₀), two of the most hazardous air pollutants for human health. The ministry notes that this minor increase could be due to meteorological fluctuations, and not necessarily to a rise in industrial or automobile emissions.

But the report also underscores that Spain is failing to make progress in the fight against pollution, a fact that has already drawn a warning from the European Union. In January, the European Commission demanded to see Spain's plans to revert the situation and said that nine member states could face legal action over their failure to properly tackle air pollution.

Shortly after coming to power in early June, Prime Minister Pedro Sánchez informed Brussels about his plans to change the country's policy on renewable energy and climate change. Spanish authorities have been in touch with the European Council, which sets the EU's policy agenda, to discuss Spain's new approach to environmental issues.

In Spain, the biggest problems are in the cities of Madrid and Barcelona, where traffic causes high NO₂ levels. The newest figures show seven urban agglomerations where NO₂ is above the annual threshold, up from six in 2016. These include the Barcelona metropolitan area, Madrid, the Corredor del Henares industrial and residential axis, the southern Madrid area, the Bajo Nervión in the Basque Country, and the city of Granada and its outlying area in Andalusia.

As for particulate matter, the number of affected areas has gone from three to five: the Granada metropolitan area, Málaga on the Costa del Sol, Villanueva del Arzobispo in Jaén province, Plana de Vic in Barcelona, and Avilés in Asturias.

Tropospheric ozone (O₃) is also on the rise, the data shows. “Levels are high in suburban and rural areas,” says the report.

NORTH AMERICA

22. Prospects For Vehicle GHG Deal Fade As EPA, California Trade Charges

Prospects for a deal between the Trump administration and California over vehicle greenhouse gas standards appear to have evaporated after officials from the two sides blamed the other for a breakdown in talks, increasing prospects that the issue is going to be resolved after a lengthy and high-profile court battle.

As the deadline for submitting comments on the Trump administration's proposed rollback of vehicle GHG standards drew to a close October 26, California leaders lobbed a bevy of detailed legal and technical attacks against the proposal, with officials charging that EPA is not interested in any substantive “negotiation” on its aggressive plan despite the agency's claims otherwise.

But EPA circulated a statement expressing disappointment that California did not submit a “counter-proposal” to its plan.

“The administration has not moved off of their initial position, which is to completely freeze the standards at the 2020 level through 2025 or 2026,” said Mary Nichols, chairwoman of the California Air Resources Board (CARB), during an October 26 press conference on the state's formal comments on the plan. EPA has shown “no interest in any of the suggestions that we've made about how they could move in a way that would not be so devastating. They appear to be completely determined to go to a fight over preempting California,” she added.

Given the federal government's stance, Nichols indicated CARB had no other choice but to submit a 415-page comment letter detailing numerous alleged flaws in the EPA and Transportation Department's plan, which combines the regulatory rollback with a proposal to scrap California's unique Clean Air Act authority to regulate vehicle GHGs.

The comments offer multiple legal arguments against the provisions and are a prelude to near-certain litigation if the agencies finalize the plan as written.

Nichols' remarks come as acting EPA Administrator Andrew Wheeler in an October 26 statement claimed the agency “has pledged to work in earnest with California to reach a 50-state solution as we take comments on the new proposal for vehicle emission standards.” And he reiterated prior statements that when he met with Nichols in July, “she promised to submit a counter-proposal from California within a week of EPA and [DOT] publishing the proposed Safer

Affordable Fuel Efficient Vehicles rule. It has been 10 weeks and the Trump administration has still yet to receive a counter-proposal.”

But Nichols said during the press conference that EPA has “not been interested in anything that reflects a desire to move in the direction of more electric vehicles, more zero-emission vehicles (ZEV) or to take advantage of any of the flexibilities that we have suggested to them might be possible under the current program. So, I don't think that there's a negotiation in this situation, when going back as far as the beginning of the year they had indicated that they wanted to work with us on coming up with a proposal.”

To date, federal officials “have not shared the modeling or the data that they used in developing the current proposal,” Nichols said. While California officials “remain open to talking with them, of course . . . at the moment we don't see any way that you could take what's out there and turn it into an acceptable program.”

The breakdown in negotiations comes as automakers continue to urge the two sides to strike a bargain on changes to the rules -- given that protracted litigation could lead to years of regulatory uncertainty. And General Motors October 24 called for a national ZEV mandate, a measure that injected a new proposal into the simmering dispute. (See story blow.)

However, there have been few public indications that the two sides are close to any agreement.

California Attorney General (AG) Xavier Becerra (D) and the AGs of 19 other states and the District of Columbia October 26 also submitted a 13-page letter that summarizes legal arguments against the federal proposal. The AGs charge that the agencies' plan “contravenes their mandates from Congress under the Clean Air Act and [the Energy Policy & Conservation Act], respectively, to protect the public from air pollution and to conserve energy,” and that it is based on “assumptions and modeling that are wholly unsupported and lead to illogical and unlikely, even impossible results.”

They add that the federal agencies ignored evidence that “runs counter to their rollback objective,” and that they “failed to provide the 'good reasons' required for their numerous reversals of positions on factual, technical, or legal issues.”

Specifically, the federal proposal:

- Ignores overwhelming scientific consensus that immediate and continual progress toward a near-zero emission economy by mid-century is necessary to avoid irreversible and catastrophic climate change impacts;
- Requires little or no progress on GHG emission standards or fuel economy for a period of six years, replacing technically feasible standards requiring significant reductions in emissions and fuel consumption;
- Threatens public health and welfare, including worsening smog and toxic exposure;
- Grossly inflates the costs of compliance using outdated models and incorrect engineering assumptions about both gasoline-powered and electric-drive automobiles;
- Relies on flawed technical analyses, including illogical assumptions about how consumers buy and keep cars, along with a host of unsupported assumptions about why people will purportedly drive longer in older cars under the existing standards;
- Depends on a flawed safety analysis that incorrectly and unreliably predicts more fatalities under the existing standards;

- Draws conclusions about the available technology – and capacity to develop technology – that are not based on reasonable inferences or technical expertise;
- Fails to fully disclose the extent to which jobs and competitive advantage in the world will be lost;
- Violates numerous important procedural requirements, and is based on an illegitimate mid-term evaluation based on unsound evidence and data;
- Violates the Clean Air Act by increasing GHG emissions the agency is tasked to reduce; and
- Violates NHTSA's duty to promote energy efficiency and conservation and is contrary to the Energy Policy Conservation Act.

The comments also note that: NHTSA's proposed finding that California's emissions standards are preempted is unfounded and has already been rejected by two federal courts; EPA's proposal to revoke parts of California's Advanced Clean Cars waiver is contrary to statute and long-standing agency practice, and is unsupported by either facts or the law; and the proposal is an unlawful assault on the ability of California to retain the standards it designed and adopted specifically to protect Californians and could deprive other states of the ability to choose between the federal standards and California's standards. To date, 12 other states have adopted these standards.

23. Senators Say Legislative History Blocks Attack On State Vehicle GHG Rules

Democratic senators are ramping up their legal attacks on EPA's proposal to preempt California's authority to enforce strong vehicle greenhouse gas rules, part of the Trump administration's plan to freeze Obama-era standards, arguing Congress over a decade ago specifically rejected proposals that would have curbed the state's power.

The push-back surfaced in an October 25 letter to EPA and the Department of Transportation -- submitted just as EPA prepared to receive thousands of comments on its proposal -- from Democrats who were closely involved in the most recent update to federal fuel economy law -- the 2007 enactment of the Energy Independence and Security Act (EISA). The senators argue that the law's legislative history directly contradicts the agencies' proposal to preempt California's GHG regulatory authority.

"As elected officials who were deeply involved in the negotiation of the fuel economy provisions of EISA, we can attest to Congress' intent that California's authority under the Clean Air Act be preserved," write Senate environment committee ranking member Tom Carper (D-DE), Sen. Dianne Feinstein (D-CA) and Sen. Ed Markey (D-MA).

"Not only did Congress include a broadly worded savings clause that expressly retains all authorities conferred by environmental laws, we did so in rejection of several alternative proposals to preempt California's authority," the lawmakers add.

They cite December 2007 floor statements from Markey, Feinstein and former Sen. Dan Inouye (D-HI) reflecting lawmakers' intent to preserve California's authority. Markey was a House member when EISA was enacted.

For example, Feinstein said during consideration of the legislation that, "There was no intent in any way, shape, or form to negatively affect, or otherwise restrain, California or any other state's

existing or future tailpipe emissions laws, or any future EPA authority on tailpipe emissions. The two issues are separate and distinct.”

The senators' letter comes one day before the October 26 comment deadline on the EPA/DOT proposal, which more broadly would freeze fuel economy standards after model year 2020.

The administration's attack on California's authority would simultaneously scrap the state's Clean Air Act waiver of federal preemption for its GHG and zero-emission vehicle (ZEV) rules, while also finding that such rules are preempted by fuel economy law, specifically the Energy Policy and Conservation Act (EPCA), a 1970s-era law revised by EISA.

The lawmakers' preemption arguments build upon a prior letter from Carper that raised a barrage of criticisms against the Trump plan, including that the administration's preemption stances have already been rejected by several prior federal court rulings.

The lawmakers also sent the agencies several emails and other documents from 2007, which they say, “demonstrate unequivocally” that the EISA law ultimately rejected repeated efforts by the auto sector, some Hill lawmakers and the George W. Bush administration to “preempt, limit or otherwise constrain both EPA's and California's authority under the Clean Air Act.”

The documents include draft proposals circulated by the private equity firm Cerebus, which at the time owned Chrysler, seeking to constrain EPA and California's GHG authority; lawmakers' press releases describing the new law and its intent; draft legislative language that would have barred EPA from regulating vehicles more stringently than DOT; and two Bush administration threats to veto the then-pending legislation because it did not eliminate EPA's vehicle GHG authority.

“Your Agencies' proposals that assert that California's Clean Air Act authority is preempted by EPCA (as amended by EISA) are starkly contradicted by the body of case law interpreting the interplay between EPCA, [and the] Clean Air Act. . . . The documents we are transmitting today also make clear that Congress considered, and ultimately rejected, language that would have eliminated or otherwise constrained this authority, even when faced with two Presidential veto threats.”

The senators then urge the agencies to “abandon your legally flawed proposal, and instead support efforts to identify and finalize a consensus approach” to GHG and fuel economy rules that preserves California's authority.

24. Eight States Support Regulatory Freeze

Eight governors from states including Texas, Nebraska, Mississippi, North Dakota, and Maine signed a letter expressing support for the proposed freeze and said market forces would support more fuel-efficient vehicles without regulation. “Government undermines both goals when it enacts policies that pit environmental preservation against free enterprise, hindering free markets, propping-up inferior solutions, and ultimately reducing prosperity,” the governors wrote.

More than 12,000 comments have been filed on the proposed rule. It's unclear how long after the public comment period is closed that federal regulators will take to amend, scrap, or implement the final rule, which could be subject to a judicial review. The opposing states have already said they would consider taking the rule to court to block any change.

In an October 25 statement, the free-market Institute for Energy Research said the existing standards are too aggressive, effectively requiring automakers to produce electric cars that consumers still purchase in relatively small numbers.

The group supports the proposed rollback, claiming manufacturers must raise prices of more popular autos to compensate for losses on electric vehicles, unfairly penalizing suburban and rural consumers who tend to be more concerned about driving range and reliability.

25. GM Breaks With Trump in Call for National Electric Car Mandate

General Motors Co. has proposed that federal regulators embrace a nationwide electric-car sales program starting in 2021, patterned on California's so-called zero emissions vehicle sales mandate that requires manufacturers to sell more EVs each year. The plan proposed in formal comments to regulators, is one of the clearest signs yet of auto industry opposition to the Trump administration's proposal to cap federal fuel-economy requirements in 2020 and unwind California's power to set its own vehicle efficiency standards and its zero-emissions vehicle mandate. Honda Motor Co. also took exception to aspects of the Trump proposal.

"We know that we can do better" than the Trump proposal, Mark Reuss, GM's executive vice president of global product development, told reporters in advance of the deadline. "We know that the industry can do better than that."

GM says a nationwide program could put 7 million long-range electric cars on the road and slash 375 million tons of carbon dioxide emissions by 2030, compared with existing zero-emissions vehicle mandates.

While the auto industry sought relief from the Obama rules, automakers view the Trump administration's proposal as too aggressive. They fear it could force them to build vehicles for California and the 12 states that follow its standards, and another fleet for the rest of the nation, which Reuss said would be "very costly, and frankly unnecessary."

Automakers also worry about a drawn-out court fight between Washington and Sacramento.

GM is reportedly taking this step because it is concerned that the U.S. could fall behind Europe and Asia in the development of electric cars. The automaker also is hoping officials will enhance the \$7,500 federal tax credit for electric-car buyers, which will soon begin to be phased out over several quarters for GM, Tesla Inc., and others.

To be sure, GM stands to benefit if the proposal gains traction. It is readying a range of new electric cars and plans to begin an EV-based robotaxi business in the coming years. GM's proposal seeks "additional consideration" for electric vehicles placed into autonomous ride-hailing fleets.

A national electric car program would ease some of the challenges that this type of vehicle presents to all automakers, according to Reuss. "I believe it will facilitate more makers to be able to really focus on development of electric vehicles more efficiently and take the guesswork out of what we think may or not happen," he said. "We're making bets on a lot of uncertainty, which is highly destructive to capital."

26. Honda Joins GM, Others In Heated Opposition To Trump's EPA Fuel-Economy Freeze

Honda joined General Motors and called on the EPA to abandon its proposed fuel-economy rollback, asking federal officials to negotiate with states like California to offer a single, comprehensive update to federal fuel-economy standards. Honda filed its comment on the last day for public comments on the Trump administration's plan and said a negotiated plan that doesn't freeze fuel-economy standards at 2020 levels would be "a better path."

"The industry is united in its request that the agencies work out an agreement with California," Honda wrote.

The alliance between the two automakers from different parts of the world may not be a surprise. Honda and GM announced a partnership to develop smaller, lighter batteries for electric vehicles this year. Honda and GM have already partnered on fuel-cell technology for several years, and each has an interest in developing fuel-efficient cars for the U.S. and abroad.

In its comments on the U.S. proposal, Honda said it disagreed with the Trump administration's plan for revoking California's rule-making authority and that important elements of the federal government's analysis on traffic safety are flawed and should be scrapped.

Honda said pursuing the administration's preferred option would "bring years of uncertainty for the auto industry" while state and federal regulators duke it out in court. "A far better path would be for federal and state policy makers to negotiate a national program that is acceptable, if not ideal, for all parties including automakers," Honda wrote.

Honda recommended that the EPA maintain greenhouse gas targets that grow tougher each year instead of freezing them as the agency has proposed.

"The industry is united in its request that the agencies work out an agreement with California," Honda said in its comments.

27. CARB, EPA Test For Low-NOx Truck Rule, But Future Remains Unclear

EPA and California officials are jointly testing various technologies to assess options for a new, low-nitrogen oxide (NOx) standard for heavy-duty truck engines, but it remains unclear whether California's plan to propose its own strict rule in 2019 will conflict with EPA's hands-off approach, undercutting broad industry calls for one national standard.

The California Air Resources Board (CARB) "has been coordinating closely with EPA technical staff on the development of the next generation of NOx standards for heavy-duty truck engines," says a CARB spokeswoman. "CARB has been meeting every two weeks with EPA Ann Arbor [MI] staff, and EPA is co-funding part of the CARB low-NOx demonstration project at Southwest Research Institute."

While EPA "has not announced if/when it will move forward with work on a national standard," CARB "hopes EPA will be able to begin work on that soon," the spokeswoman says.

CARB staff plans to propose its own low-NOx heavy-duty engine standard in December 2019, the spokeswoman adds, though she stopped short of saying whether the agency would advance a strict standard that state and local regulators have sought.

CARB has maintained the new standard is critical for certain regions of the state to attain federal ozone standards by 2023 and 2031, and fine particulate matter standards within the next eight years.

But faced with the prospect that California will move ahead without the federal government, trucking and engine manufacturing industries have been pushing both agencies to agree on one national standard, rather than California adopting its own, potentially more stringent regulation prior to any EPA action.

A source with the Truck & Engine Manufacturers Association (EMA) says the organization “has for some time been encouraging EPA to undertake a national heavy-duty on-highway rulemaking to both modernize and streamline the current regulatory program and to revise the program to reduce real-world NOx emissions from commercial vehicles. We are optimistic that EPA will announce its intent to move forward on such a program soon.”

But in the meantime, “EMA will continue to cooperate with CARB on its efforts to adopt its next generation heavy-duty on-highway program.”

The source says it remains unclear whether CARB will adopt its own regulation before EPA takes action, and whether the California rule will be more stringent than any future EPA measure.

An EPA spokesman says agency staff “are currently conducting early technical work on technologies capable of reducing NOx emissions under a broad range of operating conditions throughout the full life of heavy-duty engines” and that officials “would seek a holistic approach that reduces real-world NOx while simplifying existing requirements.”

Further, “we know CARB is already well on its way to developing the new heavy-duty NOx program and the EPA staff are engaged at a technical level on that effort,” the spokesman says. However, in terms of “an announcement or timing of a future [EPA] rule, we don’t have anything to share at this time.”

But the EPA spokesman notes that since 2016, the agency “has heard from more than 30 companies/trade associations on the importance of highway heavy-duty NOx, indicating broad support for a 50-state rule.”

The looming debate over a new heavy-duty NOx standard was sparked when EPA under the Obama administration in late 2016 accepted a petition filed by a host of local and state air quality regulators for the development of a low-NOx heavy-duty engine standard that would take effect in model year 2024. At that time, sources said they did not expect EPA to support a 0.02 grams per brake horsepower-hour (g/bhp-hr) standard that was endorsed in the petition.

But the rule's status under the Trump administration has been murky, and sources have said they were expecting lengthy delays before the agency acts on the issue.

Early this year, truck and engine makers publicly urged EPA to move forward with the new standard, seeking to ensure a national program as an alternative to what the sector fears would be a less-flexible program from California. The manufacturers' plea also urged any forthcoming rules to not make it more difficult for the industry to meet existing heavy-duty truck GHG regulations -- a request that could be seen as advocacy for a relatively weaker NOx limit than what California has pushed for.

CARB officials said in regulatory notices in late 2016 that they envisioned the eventual establishment of national low-NOx emission standards that "reflect up to a 90 percent reduction in NOx emissions compared to the current emission standards." This would reflect the emission reductions achievable by a 0.02 g/bhp-hr standard for 2023 engines sold in the state, officials indicated at that time.

CARB also indicated that once the board adopts a 0.02 g/bhp-hr standard, either EPA will eventually follow with the same rule applying nationwide or that engine makers will decide to certify all their engines to the stricter California regulation rather than making two different engine model sets.

However, it is unclear whether the ongoing testing by CARB and EPA staff and the Southwest Research Institute demonstration program may result in a standard that is less stringent than the 0.02 g/bhp-hr limit. "The exact value of the standard we propose is still to be determined," the CARB spokeswoman says. "We plan to base our recommended new standard in part on the results of the heavy-duty low NOx demonstration project currently still in progress at Southwest Research Institute."

Truck engine makers in late 2016 attacked California's plans when they were announced, including charging that pollution forecasts by the Los Angeles-area's South Coast air district and backed by CARB highly exaggerated NOx and ozone levels to justify more stringent regulations.

Industry representatives also argued then that CARB used inappropriate engine testing procedures and models to claim that its preferred standard could be achieved on diesel engines without a GHG penalty. "That is not doable without a huge GHG tradeoff, because at some point you've got to be adding heat to ensure compliance at every mode," an industry source said at that time. But top CARB staffers have claimed that achieving more stringent NOx engine standards can be accomplished while also reducing GHG emissions.

Nevertheless, engine makers have maintained that while there are about 250,000 new heavy-duty vehicles sold annually in the United States, only about 10,000 are sold in California. Even if beginning in 2024, 10,000 trucks are sold in California that meet the 0.02 g/bhp-hr standard, it would provide very little help in achieving the South Coast's 2031 ozone standard, the industry source said then.

28. CARB Approves \$483 Million Funding Plan For Clean Transportation Investments

The California Air Resources Board has approved a \$483 million plan to fund clean car rebates, zero-emission transit and school buses, clean trucks, and other innovative, clean transportation and mobility pilot projects.

The Fiscal Year 2018-19 Funding Plan for Clean Transportation Incentives, largely funded with cap-and-trade proceeds, is part of California's comprehensive strategy for improving air quality and reducing greenhouse gas emissions in the transportation sector, the state's largest source of air pollution and climate-changing gases. Of the \$483 million total, \$455 million comes from the cap-and-trade program; the remainder — \$28 million — is from the Air Quality Improvement Program. The funding plan prioritizes investments in disadvantaged and low-income communities.

The plan serves as the blueprint for expending funds appropriated to CARB in budget bills passed this year by the Legislature and signed by the Governor, including \$455 million from Cap-and-Trade auction proceeds. The plan establishes priorities for the funding, describes the projects CARB intends to fund, and sets funding targets for each project.

Projects in the FY 2018-19 plan prioritize environmental justice by addressing specific community needs and increasing awareness of, and access to, cleaner transportation and mobility options exceeding the requirements called for under Senate Bill 350. The Board is increasing the target for investment in disadvantaged and low-income communities and households to 50 percent as called for by Assembly Bill 1550.

Highlights of the FY 2018-19 Plan include:

- \$200 million for the Clean Vehicle Rebate Project (CVRP), including increased rebates for low-income consumers. (CVRP promotes clean-vehicle adoption by offering rebates for the purchase or lease of new, eligible zero-emission vehicles, including electric, plug-in hybrid electric and fuel cell vehicles.)
- \$75 million for Transportation Equity Projects, including the Enhanced Fleet Modernization Plus-Up/Clean Cars 4 All Program (incentives for lower-income drivers to scrap and replace older, high-polluting cars with zero- or near-zero-emission cars), Financing Assistance for Lower-Income Consumers, Clean Mobility Options, Agricultural Worker Vanpools, Rural School Bus Pilot Project, and the new Clean Mobility in Schools Project.
- \$180 million for Clean Truck & Bus Vouchers (HVIP and Low NOx Engine Incentives) and the Zero- and Near-Zero Emission Freight Facilities Project.
- \$28.6 million for Air Quality Improvement Program or AQIP-funded heavy-duty vehicle investments, including the Truck Loan Assistance Program and new Diesel Particulate Filter Retrofit Replacements.

29. Trump Orders EPA To Waive Volatility Limits For E15

US President Donald Trump ordered the US Environmental Protection Agency to waive volatility limits for gasoline with a 15% blend, facilitating its year-round sale in the country. Agricultural and ethanol interests applauded the October 9 move, while the oil and gas industry and environmental organizations strongly condemned it.

“Today, we are unleashing the power of E15 to fuel our country all year long. Promises made, promises kept,” the president reportedly said at an evening rally in Council Bluffs, Iowa, where he campaigned for Gov. Kim Reynolds and other Iowa Republicans facing reelection.

Ethanol interests have complained that Reid Vapor Pressure gasoline volatility limits required under federal law have damaged the domestic renewable fuels market. “Securing fair market access for E15 and other higher blends has been our top regulatory priority for several years, and we are pleased that the first official step in this process is being taken. When markets are open and competitive, American consumers win,” Renewable Fuels Association Pres. Geoff Cooper said.

American Petroleum Institute Pres. Mike Sommers feels otherwise. So does American Fuel & Petrochemical Manufacturers Pres. Chet Thompson. “Putting a fuel into the marketplace that the vast majority of cars on the road were not designed to use is not in the best interest of consumers,” said Sommers. “Vehicle compatibility tests have shown that high ethanol levels in gasoline can

damage engines and fuel systems. EPA has previously stated that it does not have the legal authority to grant the E15 waiver, and we agree with that assessment. The industry plans to aggressively pursue all available legal remedies against this waiver.”

Thompson said, “The president’s proposal to waive the rules for E15 is unlawful and could actually make the problems of the Renewable Fuel Standard worse. [He] has promised to broker a deal to reform the RFS that works for all stakeholders. This isn’t it.”

Other trade association leaders also were critical. “In addition to being legally dubious, this action will put millions of American consumers at a greater risk of misfuelling, so a small, politically important group can benefit,” National Marine Manufacturers Association Pres. Thom Dammrich said.

30. Vancouver's Largest Private Bus Operator Goes Green

BYD (Build Your Dreams) Canada has been awarded an order for zero emission, battery-electric buses by Vancouver’s Westcoast Sightseeing, the first Canadian tour company to order clean energy buses, and the first to commit to a 100-percent clean-energy fleet by 2023.

China’s battery and electric vehicle pioneer, BYD has become the world’s largest manufacturer of electric vehicles and batteries, and the overwhelming global leader in battery-electric buses.

As the largest private bus operator in Vancouver, Westcoast Sightseeing has agreed to work exclusively with BYD on converting their entire fleet of 90 buses, including open top buses, double and single-deckers and other vehicles.

It will also work with the city to develop the necessary charging infrastructure that will not only benefit Westcoast but many other companies that want to reduce their greenhouse gas emissions and climate impact.

“Our business is built around the natural beauty of our home and we are especially conscious of the impact our day-to-day operations has on the environment,” said Rob Safrata, chief executive officer of Westcoast Sightseeing. “We are proudly working towards a greener and more sustainable future. And adding electric buses and boats is the first step to achieve our goal in 2023 of becoming the first sightseeing firm in Canada with 100% electric vehicles.”

The BYD battery-electric buses will make an immediate improvement to air quality and noise levels for British Columbia delivering a predicted reduction in carbon emissions of some 4,500 metric tons per year based on EPA standards.

“CEO Rob Safrata has long held a clean energy vision and we are excited to be working with him,” said BYD Canada’s Vice President Ted Dowling. “This aligns perfectly with the recent announcement by British Columbia Premier John Horgan for the need to find other ways to reduce emissions.”

Investing more than \$250 million in North America to date, BYD sold or leased more than 600 buses to more than 50 municipal, transit agency, university, airport, federal and other commercial and private sector clients in 14 American states and four provinces in Canada.

BYD Canada has buses on order or in operation for Société de transport de Montréal (STM) and the Réseau de transport de Longueuil (RTL) in Quebec; Toronto Transit Commission (TTC) in Ontario; and St. Albert (STAT) and Grand Prairie in Alberta.

31. EPA: Cleaner Power Generation Offset Increase Of Vehicle Emissions In 2017

U.S. emissions of global-warming greenhouse gases fell 2.7 percent in 2017, despite the Trump administration's efforts to revive coal use in the U.S., the EPA announced recently. The EPA released data for 2017, showing an even larger 4.5 percent drop in emissions from power plants compared with 2016, as more coal plants are retired. So electric cars using that energy—not just new electric cars, but any—get that much cleaner.

The 2.7 percent decrease in total greenhouse-gas emissions comes despite an increase in emissions from transportation from having more cars on the road.

The Trump administration was quick to take credit for the improvement. In a statement announcing the finding, EPA Acting Administrator Andrew Wheeler said, "Thanks to President Trump's regulatory reform agenda, the economy is booming, energy production is surging, and we are reducing greenhouse gas emissions from major industrial sources. These achievements flow largely from technological breakthroughs in the private sector, not the heavy hand of government. The Trump Administration has proven that federal regulations are not necessary to drive CO2 reductions."

Many economists have credited cheap natural gas for making it uneconomical for utilities to continue burning coal in powerplants.

The EPA announced plans in August to scrap an Obama administration plan to force coal plants to reduce emissions of carbon-dioxide, either by switching to cleaner natural gas or by building complex and expensive carbon-capture technology. The plan was never implemented following a court injunction.

At the same time, renewable energy production surged 20 percent from 2016 to 2017, making up 18 percent of total energy production in the U.S., including wind, solar, and hydro-electric power. Renewable energy use has doubled since 2008.

Cleaner electricity improves the effective efficiency of electric cars. And having fewer coal-fired power plants increases the number of areas where electric cars can be expected to be cleaner to drive than very efficient gas hybrids.

Overall energy use also declined in 2017, down 0.2 percent.

32. US Air Pollution Deaths Nearly Halved Between 1990 And 2010

Air pollution in the U.S. has decreased since about 1990, and a new study¹ conducted at the University of North Carolina at Chapel Hill now shows that this air quality improvement has brought substantial public health benefits. The study, published in the journal *Atmospheric*

¹ Zhang, Y., West, J. J., Mathur, R., Xing, J., Hogrefe, C., Roselle, S. J., Bash, J. O., Pleim, J. E., Gan, C.-M., and Wong, D. C.: Long-term trends in the ambient PM_{2.5}- and O₃-related mortality burdens in the United States under emission reductions from 1990 to 2010, *Atmos. Chem. Phys.*, 18, 15003-15016, <https://doi.org/10.5194/acp-18-15003-2018>, 2018.

Chemistry and Physics, found that deaths related to air pollution were nearly halved between 1990 and 2010.

The team's analyses showed that deaths related to air pollution exposure in the U.S. decreased by about 47 percent, dropping from about 135,000 deaths in 1990 to 71,000 in 2010.

These improvements in air quality and public health in the U.S. coincided with increased federal air quality regulations, and have taken place despite increases in population, energy and electricity use, and vehicle miles traveled between 1990 and 2010.

"We've invested a lot of resources as a society to clean up our air," said Jason West, professor of environmental sciences and engineering at the UNC Gillings School of Global Public Health and study co-author. "This study demonstrates that those changes have had a real impact with fewer people dying each year due to exposure to outdoor air pollution."

The study was led by Yuqiang Zhang, a former postdoctoral researcher at the UNC Gillings School and at the Environmental Protection Agency and current research scientist at the Duke University Nicholas School of the Environment, and in collaboration with West and several scientists at the EPA.

This study supports results from a small number of other recent studies that also showed similar and marked reductions in air pollution-related deaths, but this study is unique in its use of a 21-year computer simulation and ability to estimate air pollution deaths each year.

Zhang, West and colleagues analyzed concentrations of two pollutants, known as PM2.5 and ozone, from a 21-year computer simulation of air pollution across the U.S. PM2.5 are very small particles suspended in the air that come from power plants, motor vehicles, industries, and some commercial and residential sources. The diameter of such small particles is less than 2.5 micrometers, which is about 3 percent of the diameter of a human hair.

They then related the declining concentrations of PM2.5 and ozone to the geographical areas in which people live and the causes of death in those areas, using data from the Centers for Disease Control and Prevention, to estimate deaths from air pollution during the period. They estimated deaths from ischemic heart disease, chronic obstructive pulmonary disease, lung cancer and stroke related to PM2.5, and from respiratory disease for ozone.

"These health improvements likely have continued beyond 2010 as we observe that air pollutant concentrations have continued to decrease," said Zhang. The team plans to use other datasets to analyze air pollution deaths since 2010.

Still, despite clear improvements, air pollution remains an important public health issue in the U.S. The estimated 71,000 deaths in 2010 translates to 1 of every 35 deaths in the U.S. - that's as many deaths as we see from all traffic accidents and all gun shootings combined.

"Even though we've seen some tangible success, there are still people dying, and a public health challenge remains going forward," West said. "New federal policies curtailing air pollution regulations likely will slow the improvement in air quality or possibly make air quality worse."

The study was funded by NASA through its Health and Air Quality Applied Sciences Team, of which Dr. West is a member, and by the EPA.

33. EPA Plan to Kill Glider Truck Limits in Limbo Amid GOP Pressure

The Environmental Protection Agency proposed in November 2017 to eliminate a production cap on trucks using glider kits, which are new truck bodies built for the installation of a used engine. But it is unclear whether the agency will continue to advance those repeal plans. The Trump administration's fall regulatory agenda, published October 17, lists the effort as a long-term action with a "to be determined" deadline.

The delayed timeline comes as the EPA has faced sharp opposition to the repeal from a wide array of groups—including environmentalists, state regulators, industry groups, and major truck makers such as Volvo Group North America Inc. and Daimler Trucks North America LLC.

The EPA has also faced some setbacks as it attempts to relieve glider kit makers of the requirements. Former EPA Administrator Scott Pruitt on his last day in office oversaw enforcement relief for glider kit companies, but acting Administrator Andrew Wheeler was later forced to walk that back after a federal appeals court slapped down the action.

Large manufacturers of new trucks say allowing glider trucks to pollute without limits would undercut the investments they have made to clean up their fleets. Major truck makers worked with the Obama administration in 2016 to craft greenhouse gas limits for the sector, and the glider kit limits were included as part of that regulation.

EPA staff in a November 2017 report found trucks using glider kits emitted at least dozens of times more air pollution than new trucks.

But several House Republicans are ramping up pressure on the EPA to resolve the glider kit repeal. They are urging the agency to delay by five years when glider kit makers must comply with the cap, which formally took effect in January of this year. "President Donald Trump has made the resolution of gliders an Administration priority, instructing EPA to resolve the issue last spring. However, the EPA has not provided relief to remedy this arbitrary and punitive rule," seven House Republicans, led by Rep. Bill Posey (R-Fla.), wrote in an October 10 letter to Wheeler.

Glider kit makers say they have had to lay off hundreds of workers in the past three months, the lawmakers added.

It is unclear whether Congress would be able to take any action or force the EPA to delay the limits. There is bipartisan opposition to repealing the glider kit limits, Paul Billings, senior vice president of public policy for the American Lung Association, told reporters.

He said his and other groups have asked Wheeler to withdraw the repeal proposal and send a clear signal the EPA will abandon efforts to kill the glider kit limits, but they haven't heard back from him. "There may be a pattern of some of the Pruitt initiatives slowing down," Billings said. "But if they really wanted to enforce, they would withdraw them, and they wouldn't appear on the regulatory agenda."

34. Glider Truck Study Drew 'Inaccurate' Conclusions University Finds

University researchers erred in stating an industry-funded study found trucks with rebuilt engines were just as clean as new trucks, Tennessee Technological University determined in a misconduct investigation.

The 2017 study has been at the center of a fight over the Environmental Protection Agency's attempts to eliminate air pollution limits on trucks using glider kits. Glider kits are new chassis and cab assemblies that allow for the use of an old engine. The EPA cited the Tennessee Tech study in its Nov. 16, 2017 proposal to kill the Obama-era requirements capping glider kit production and use. The research was funded by Fitzgerald Glider Kits LLC, one of the nation's largest makers of the equipment and a strong proponent of the EPA's repeal efforts.

But the university now says prior statements that its research found glider trucks were equally as clean as new trucks were inaccurate. The determination adds another roadblock to the EPA's efforts to undo the glider kit limits, which has stalled in the face of fervent opposition.

It is largely unclear how the agency will proceed.

The EPA walked back from the Tennessee Tech study after the university announced it would look into research misconduct allegations. The EPA's own data, released days after the repeal proposal by career staff at the agency's vehicles lab, found that glider trucks emitted dozens of times more air pollutants than new trucks.

Ultimately, Tennessee Tech determined its research wasn't sufficient to draw specific conclusions about glider trucks and the EPA's emissions standards.

The testing procedures used in the study weren't sufficient to justify any statements about the EPA limits, Trudy Harper, vice chairman of the university's board of trustees, wrote in an October 23 letter to Fitzgerald Glider Kits head Tommy Fitzgerald, EPA acting Administrator Andrew Wheeler, and Rep. Diane Black (R-Tenn.).

"[F]ollowing a review of the supporting data for these statements, Tennessee Tech has determined that the data does not support the statement that optimized and remanufactured engines performed equally as well as" new certified truck engines, Harper added.

Tennessee Tech did find, however, that the research was "methodologically sound" and appropriate for the original intent of the project, which was to draw "relative comparisons" between new truck engines and trucks using remanufactured engines and Fitzgerald equipment.

35. U.S. Clean-Air Regulators Talk With Volvo Over Truck Emissions Problem

Clean air regulators in the U.S. are in talks with Volvo AB to address a faulty emissions control component that could cause the company's commercial trucks to exceed pollution limits, an EPA spokeswoman said.

Volvo said October 16 it discovered that a component used to limit auto pollution is degrading faster than expected and could cause its vehicles to exceed limits for nitrogen oxide emissions. The world's second-largest truck maker warned that resolving the issue could have a material financial impact, but said its analysis is still underway and it is too early to determine the cost.

"EPA is aware of the situation involving excess emissions from Volvo heavy-duty trucks. Over the last few weeks, EPA and the California Air Resources Board have been communicating with Volvo about the problem and are now continuing to meet with the company to develop plans to quickly address this situation," an Environmental Protection Agency spokeswoman said in an October 17 email.

Volvo's revelation comes after U.S. diesel-engine maker Cummins Inc. announced in July that it would pay \$404 million through 2020 for repairs to ensure that its engines keep pollution below legal limits as they age. The EPA and California Air Resources Board found last year that some older Cummins engines failed emissions tests as parts wore out.

36. Study: Deterioration Over Time Hurts Some DPF Performance

Diesel particle filters (DPFs) are standard equipment on heavy-duty diesel trucks with 2007 and newer engines in the U.S. This study² evaluates the performance and durability of these filters. Black carbon (BC) emission rates from several thousand heavy-duty trucks were measured at the Port of Oakland and Caldecott Tunnel over multiple years as California regulations accelerated the adoption of DPFs. As DPF use increased, fleet-average BC emissions decreased, and emission factor distributions became more skewed. Relative to 2004–2006 engines without filters, DPFs reduced BC emission rates by 65–70% for 2007–2009 engines and by >90% for 2010+ engines. Average BC emission rates for 2007–2009 engines increased by 50–67% in 2015 relative to measurements made 1–2 years earlier. Some trucks in this cohort have become high-emitters, indicating that some DPFs are no longer working well. At the Port, where DPFs were universal in 2015, high-emitting 2007–2009 engines (defined here as emitting >1 g BC kg⁻¹) comprised 7% of the fleet but were responsible for 65% of the total BC emitted. These observations raise concerns about DPF durability and the prospects for fully mitigating adverse effects of diesel particulate matter on human health and the environment.

37. White House Seeks to Slow Rollout of Rules for Cleaner Ship Fuels

The Trump administration is pushing to ease the rollout of new international rules to power commercial ships with environmentally cleaner fuels, fearing the measures will drive up costs for consumers and businesses. The rules, set several years ago through the International Maritime Organization, an arm of the United Nations, take effect on January 1, 2020, and aim to slash the amount of sulfur in marine fuel for oceangoing ships.

The International Energy Agency, which advises governments on energy policies, has warned that the measures—by banning cheap energy sources and requiring ships to run on premium fuels—could cause a surge in demand for specific fuels that ripples across commodity markets and affects prices for crude, diesel and other petroleum products.

International oil prices have recently surged above \$80 a barrel and some predict \$100 is possible, driven by a reinstated U.S. ban on Iran oil exports and dwindling spare capacity among members of the Organization of the Petroleum Exporting Countries.

The new maritime demand is expected to tighten supplies further, especially for low-sulfur diesel but also in oil markets more broadly. That could raise prices for all types of fuels—from home heating oil in Pennsylvania to boating fuel in Florida and gasoline across the country—just as the presidential primaries enter full swing, analysts said.

The White House says the administration is focused on the damage rising fuel costs might have on the economy, but some administration officials concede the timing of the implementation could

1. ² “In-Use Performance and Durability of Particle Filters on Heavy-Duty Diesel Trucks”, Chelsea V. Preble*††, Troy E. Cados††, Robert A. Harley††, and Thomas W. Kirchstetter††, † Department of Civil and Environmental Engineering, University of California, Berkeley, ‡ Lawrence Berkeley National Laboratory, Environ. Sci. Technol., 2018, 52 (20), pp 11913–11921, DOI: 10.1021/acs.est.8b02977, August 28, 2018

have political implications in an election year. “Few things terrify an American president more than a spike in fuel prices,” said Bob McNally, a former energy adviser to then-President George W. Bush. “If President Trump learns that IMO 2020 risks a big fuel oil-price spike in the winter of a presidential election, he is going to object.”

A spokesman said the White House isn’t seeking to withdraw from the agreement and declined to characterize administration plans as an effort to delay implementation. Instead, the shipping and energy markets may face less disruption if the rules were phased in in the name of “experience building,” he said. Such a move is necessary to “mitigate the impact of precipitous fuel-cost increases on consumers,” the White House said. “The administration wants to ensure that IMO 2020 occurs in a manner that is not harmful to consumers and the global economy.”

IMO officials were baffled by the White house stance. They said the U.S. and Canada since 2015 have had stricter sulfur limits in place on fuels for ships calling on their coasts than those required by the IMO in 2020. Shipping and energy executives said the cost for shipowners of the cleaner fuels would amount to about \$15 billion a year.

White House officials are alarmed by internal and external projections that suggest the global economic costs could surpass \$100 billion, with the U.S. portion of that potentially rising to more than \$10 billion. These analyses remain estimates, and officials say there is no certainty how much costs will rise. But what is clear is that shippers are already planning to pass potentially billions of dollars in compliance costs to consumers.

“The U.S. is ready to accept some degree of economic pain” to achieve its goals against Iran, one U.S. government official said. “But the implementation of IMO 2020 [standards on marine fuel] complicates matters.” A March 2018 IEA report warned “maritime and refining industries face a huge challenge to implement.” “It is not clear how successful they will be, especially as demand for non-marine gas oil grades is growing steadily,” the report said.

The White House is gauging the support of other countries for a more staggered approach, according to senior administration officials. The administration is backing a shipping-industry proposal for enforcement of the new measures to gradually increase over time, an approach that will be discussed at a U.N. IMO conference in London.

Major flag states like Panama, Liberia and the Marshall Islands along with trade bodies have said the IMO should examine a possible “grace period” of a few months until all oceangoing vessels empty their tanks of high-sulfur fuel. Some have also asked for ships not to be penalized if they can’t get the cleaner fuels at some ports.

Ships contribute about 13% of total sulfur-dioxide emissions, burning heavy fuel with sulfur levels more than 2,000 times the level currently allowed for cars in the U.S., according to the U.N.

Senior administration officials also have been hearing a wave of opposition to any delay in implementing the rules from U.S. refining and oil companies. While some smaller refiners may face challenges with costly improvements, most U.S. oil-and-gas companies and big refiners stand to be big winners from selling more higher-grade fuels. U.S. refiners have invested an estimated \$100 billion since 2008 to produce cleaner fuel, in part to comply with maritime rules, according to the American Fuel & Petrochemical Manufacturers, a trade group that includes most of the nation’s refiners.

ASIA-PACIFIC

38. China's Action On Air Quality Is Saving Lives

Air quality in China has substantially improved over the last three years with a 20 per cent reduction in small particulates, the most dangerous form of pollution that has been causing more than one million deaths a year. The figures show that Chinese government policies designed to improve air quality are working, and that life expectancy in the country will increase as a result.

The news is also good for climate change because the same policies mean less fossil fuel is being burned and fewer greenhouse gases released.

The study, published in *Environmental Research Letters* by the University of Leeds in England, is based on air quality readings taken at 1,600 locations in China from 2015 to 2017. Hourly assessments were made of concentrations of nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), and fine particles known as PM_{2.5}s. Concentrations of PM_{2.5}s – the most dangerous pollutant—fell by 7.2 per cent a year over the three-year period, and sulfur dioxide by 10.3 per cent.

Low-level ozone rose by 5 per cent per year. This increase which would have caused some extra irritation of the lungs, may have been the result of more sunlight reaching the ground.

Study co-author Professor Dominick Spracklen, from the School of Earth and Environment at Leeds, says: “Rapid economic growth and large increases in emissions have led to serious air quality issues across China. “One of the most dangerous components of air pollution is fine particulate matter that measures less than the width of a human hair. “These particles can penetrate deeply into the lungs, causing serious health complications. Exposure to these particles is estimated to cause more than 1 million deaths across China each year.

“In response, the Chinese government introduced policies to reduce emissions and set ambitious targets to limit the amount of particulates in the atmosphere. This is the first detailed assessment as to whether these policies are having an impact.”

Ben Silver, study lead author and post-graduate researcher at Leeds, says: “Our work shows rapid and extensive changes in air pollution right across China. In particular, it is encouraging to see that levels of fine particulate matter have fallen rapidly in the last few years.

“While more research is needed to fully assess what is driving the trends we’ve uncovered here, particularly what is causing the widespread increase in ozone concentrations, we can see that China’s emissions control policies seem to be on the right track.”

Another study, published in *Environment International*, says that replacing fossil fuels with renewables in China and India will add years to people’s lives.

Harvard School of Engineering and Applied Sciences looked at the effect of air pollution on the life expectancy of 2.7 billion people who live in the two countries—more than a third of the world’s population. Air pollution is one of the largest contributors to death in both countries. China is rated as the fourth most polluted country in the world, and India is ranked fifth.

The researchers found that eliminating harmful emissions from coal-fired power plants could annually save an estimated 15 million years of life in China and 11 million years of life in India.

Using local data from the worst-affected regions of the two countries, the researchers could calculate annual changes to life expectancy. They were able to narrow down the areas of highest priority, recommending upgrades to the existing power generating technologies in Shandong, Henan and Sichuan provinces in China, and Uttar Pradesh state in India, due to their dominant contributions to the current health risks.

Chris Nielsen, executive director of the Harvard-China Project and a co-author of the paper, says: "This study shows how modelling advances and expanding monitoring networks are strengthening the scientific basis for setting environmental priorities to protect the health of ordinary Chinese and Indian citizens.

"It also drives home just how much middle-income countries could benefit by transitioning to non-fossil electricity sources as they grow."

39. China's Electrified Vehicle Fleet Tops 2.21 Million

China's fleet of electric vehicles and plug-in hybrids topped 2.21 million by the end of September as sales of electrified vehicles continued to surge in the country. Of the total, EVs accounted for 1.78 million, or nearly 81 percent. The rest were plug-in hybrids, China's Ministry of Public Security said.

Electrified cargo vehicles -- which include trucks, pickups and delivery vans -- approached 254,000, representing 11 percent of the electrified vehicle fleet as of September.

Thanks to government subsidies and a car credit program Beijing plans to enact at the beginning of the year, new electrified vehicle sales have surged in China. For the first nine months, automakers delivered more than 721,000 EVs and plug-in hybrids in China, a jump of 81 percent year on year, according to the China Association of Automobile Manufacturers. The association's tally includes roughly 541,000 EVs and 181,000 plug-in hybrids.

Despite the sales surge, electrified vehicles constituted less than 1 percent of China's vehicle fleet as of September.

By the end of September, traditional and electrified vehicles in China totaled 235 million, according to the Ministry of Public Security. In the third quarter of this year alone, more than 6.5 million vehicles were added to the fleet, according to the ministry.

40. China's Automakers Face Threats At Home, Abroad

At first blush, the GS8 seems like a crossover made for Americans. The hulking China-built seven-seater is luxurious and modern. What's more, the styling isn't cluttered with the overwrought baubles that blight many Chinese designs. The GS8 looks at once handsome and rugged, even to American eyes. Its manufacturer, GAC Motor, hopes so. GAC seeks to be the first homegrown automaker to export light vehicles to the U.S., starting as early as late next year. The GS8 is positioned as its leadoff product, and GAC has begun recruiting stateside dealers.

"When GAC was established, internationalization was one of our goals," Li Shao, deputy general manager of parent company Guangzhou Automobile Group Co., said at an industry event this year. "Chinese brands going global will be a common trend in the future."

Just as Japanese automakers, and then Koreans, tapped into America with wild success, a growing roster of Chinese hopefuls - from bus makers to electric vehicle upstarts - say it is their turn to take a crack at the lucrative U.S. market. But now comes some whiplash. A spiraling trade war between China and the U.S. casts new doubt on such overseas ambitions. And landmark policy changes at home mean China's domestic market is no longer the sheltered incubator it once was.

Suddenly, China's would-be world conquerors are playing defense at home and facing a tougher fight overseas. How the battle shakes out could reshape the industry's landscape, not just for China-born challengers but for the international legacy brands they target as rivals.

The upheaval could profoundly shape the way China evolves into the next big automotive rival. The country's industry is ripe for massive consolidation, and many contenders are bound for extinction. But the Chinese brands that survive could emerge even stronger to compete abroad and make China a global player.

Few Chinese upstarts have been as aggressive on the global stage as Geely. Its surge began in 2010, when Li Shufu acquired Swedish brand Volvo from a troubled Ford Motor Co. that was racing to raise cash during the financial crisis. Geely now has stakes in the British maker of London's black cabs, the Malaysian automaker Proton and the British sports car brand Lotus.

Last year, Geely even bought a Massachusetts company called Terrafugia that is developing flying cars. And, in the clearest sign of the times, Li splurged in early 2018 on a 9.7 percent stake valued at some \$9 billion in Mercedes-Benz parent Daimler, the grande dame of German luxury.

Li also decided to launch a global brand, Lynk & CO. It wants to shake up the traditional retail and ownership model with a subscription plan, no-haggle pricing, online shopping and software-based car-sharing. Geely also reportedly is in talks to partner with Toyota Motor Corp. on hybrid technology. It is a snowballing empire for Li, a man from a farming region of Zhejiang province who began his vocational life as a photographer before moving on to engineering and entrepreneurship.

Also angling for an international profile are GAC and a host of other legacy Chinese automakers, including Great Wall, Shanghai Automotive and BYD. New to the fray are dozens of EV startups with names such as Xpeng, Nio and Byton, all seeking to be the next Tesla.

China's biggest international successes to date have come in emerging markets: Africa, Eastern Europe, Southeast Asia and Latin America. Shanghai Automotive Industry Corp., for instance, has taken control of South Korean automaker SsangYong Motor and MG Rover assets. SAIC has deftly used those acquisitions to grow in countries such as Thailand, New Zealand and Australia. SAIC says it plans to enter India next year.

In seven years, Chinese light-vehicle exports more than doubled, from 282,900 vehicles in 2010 to 639,000 last year, according to the China Association of Automobile Manufacturers. Exports are up 45 percent this year through August. Domestic brands account for about 85 percent of the passenger vehicle shipments, according to LMC Automotive.

But the real prize remains the U.S.

BYD, the electric car maker partly owned by American billionaire Warren Buffett, already has a toehold. BYD runs an assembly plant in Lancaster, Calif., that mainly builds electric buses and trucks. In fact, BYD has delivered more than 700 battery-powered buses across the U.S.

But Chinese passenger vehicles still face many roadblocks - starting with a perception of questionable quality. More than a third of American consumers say they won't consider buying a Chinese brand vehicle, according to a poll published in July by Autolist.com.

GAC thinks its GS8 is up to snuff. The vehicle boasts such near-luxury trappings as multifunction leather seats, three-zone climate control, a panoramic sunroof and a negative-ion air purifier, not to mention seamless mobile-phone connectivity and wireless gadget charging. Under the hood is an engine with a turbocharger from BorgWarner and a six-speed automatic transmission from Aisin Seiki, all encased in a high-tensile steel body. Of course, it offers four-wheel drive, replete with six driving modes to handle various types of terrain, and a comprehensive airbag system.

Government-backed GAC counts giants Toyota, Honda, Fiat and Mitsubishi among its joint-venture teammates. But GAC's Li says his company has grown beyond being the junior partner.

Yet selling stateside just got a lot harder, thanks to new tariffs on China-made automobiles. President Donald Trump's decision to levy the duties, as part of an escalating trade row with Beijing, is seen as a kind of pre-emptive strike to stop Chinese vehicle imports before they begin. At the Paris auto show, GAC President Yu Jun conceded to reporters that the U.S.-China trade dispute "might delay the launch of GAC's first car in the U.S. to the first half of 2020."

Yet even without the tariffs, Chinese hopefuls would face an uphill climb. First come the sky-high costs of shipping vehicles to the U.S., building a dealer network from scratch and distributing product nationwide. Then, the Chinese must splurge on pricey advertising campaigns to win over a skeptical public leery of anything with an unfamiliar badge.

But Chinese players adamant about America already are strategizing tariff workarounds.

Like the Japanese and Koreans before them, they will duck duties by making vehicles and auto parts in the U.S. Chinese EV startup Faraday Future, for example, plans to build its first car at a refurbished tire factory in California.

Homegrown auto companies have steadily clawed market share away from international rivals over the years. They won the confidence of Chinese consumers by dramatically improving the quality of their products and quickly capitalizing on the market's shift to crossovers.

In 2010, domestic brands accounted for about 30 percent of Chinese passenger vehicle sales, according to LMC Automotive. By last year, they had locked up 41 percent. The latest casualty was Suzuki Motor Corp. The Japanese small-car specialist said in September that it would quit the world's biggest auto market after struggling to sell cars in China for 25 years. The Suzuki brand will survive there in name only, under a production licensing agreement with its former JV partner Chongqing Changan Automobile Co.

But all automakers, Chinese and foreign, are suddenly being buffeted by softening demand.

Domestic light-vehicle sales in China fell in August for the second straight month, taking the shine off what used to be one of the world's fastest-growing markets. Analysts say Chinese brands would suffer the most in a slowdown. Indeed, domestic brand light-vehicle sales climbed just 0.8

percent this year through August, while international sales advanced a healthy 4.1 percent, according to the China Association of Automobile Manufacturers.

American duties on Chinese imports are denting China's macroeconomy and sapping consumer confidence. At the same time, the Chinese government is cracking down on peer-to-peer lending platforms, which were a potent source of loans for cash-poor consumers looking to buy cars.

Meanwhile, major policy changes are making it easier for international brands to compete in China. China's government reduced the country's 25 percent tariff on imported cars to 15 percent on July 1. It also promised to wipe out foreign ownership limits on local manufacturing by 2022.

China's decision to roll back tariffs was a windfall for foreign competitors from almost everywhere except the U.S. (Beijing quickly reimposed duties on U.S. imports in retaliation for the Trump administration's tariffs on a multitude of Chinese products.) But automakers from Germany, Japan and South Korea suddenly were able to slash sticker prices. In August, after the tariff cut, domestic brand sales fell 11 percent while foreign sales held steady, despite overall shrinking demand.

The policy ending restrictions on foreign ownership of local automakers begins phasing in this year with the removal of limits on companies making EVs and plug-in hybrids. It applies to commercial vehicles in 2020 and then all passenger vehicles in 2022. Before, foreign automakers were limited to a 50 percent stake in any local venture under a policy introduced in 1994 to give local brands a leg up on international competitors.

U.S. EV star Tesla was one of the first foreign players to take advantage of the change. In the summer, Tesla signed a preliminary agreement to build an assembly plant in Shanghai, a factory envisioned as having the capacity to churn out 500,000 vehicles a year.

BMW also sees an opportunity to improve its positioning under the new guidelines. The German luxury automaker is reportedly exploring the possibility of raising its stake in the Shenyang JV it has with China's Brilliance Automotive Group Holdings.

Other automakers have been mostly mum on their intentions. Negotiating new shareholder structures with Chinese partners could bog them down for a long time. Plus, foreign brands rightly see big benefits in pairing with a local operation that can help them navigate thorny government relations, opaque supply lines, a delicate Chinese dealer network and mercurial customer tastes.

But the opening gives international players more flexibility to run their own operations, protect their intellectual property and pocket a bigger chunk of the profits. It also will free them to manufacture more in China for export to other markets.

Chinese automakers know times have changed and are laser-focused on upping their game.

Despite the new challenges at home, Geely is flourishing. This year, it became China's second-biggest car brand. Sales surged 33 percent to 828,355 vehicles through July, topping Toyota, Buick, Honda, Hyundai and every other marque except Volkswagen, according to LMC Automotive. The company's net income was up a robust 54 percent in the first half of the year.

41. Beijing To Propose 50% Cut To Tax On China Car Sales, Report Says

China's top economic planning body is proposing to cut the tax levied on car purchases by half, as the impact of an escalating trade war with the United States threatens to slow the Chinese economy and affect demand for light vehicles, according to reports.

The country's top economic planning body submitted a plan to key policymakers to lower the purchase tax to 5 percent for passenger vehicles with engines no bigger than 1.6 liters, according to people familiar with the matter. Reportedly, no decision has been made on implementation.

Reuters reported earlier this month that the China Automobile Dealers Association (CADA) submitted documents to the country's finance and commerce ministries proposing the 10 percent auto purchase tax be halved. CADA has made proposals in previous years that have helped shape auto policy.

China's light-vehicle sales fell 12 percent to 2.39 million last month, the most in nearly seven years, stoking concerns that the world's biggest auto market could contract for the first time in decades in 2018. After racking up record sales over the past few decades as China's emergent middle class bought their first cars or light trucks, consumers are retreating from big-ticket purchases, a pullback exacerbated by the phasing out of a car purchase tax rebate.

When China last cut the purchase tax three years ago, car sales soared.

42. China's Sulfur Limit On Marine Fuels From October 1 Worsens Gasoil Supply

Following the implementation of the 0.5% sulfur limit on marine fuels for all vessels in China's Yangtze Delta Emission Control Area from October 1, demand for low sulfur marine gasoil has tightened the already short supply. Previously, 0.5% or less sulfur fuel only has to be burned while vessels were at berth, or one hour prior to the arrival at berth and during the first hour after leaving. It is now mandatory for all vessels to switch to low sulfur marine fuels prior to entering into the ECA zone.

Robust domestic demand for gasoil coupled with the new rule has crunched the marine fuels market. "Refineries are not prepared for the sudden increase in demand," a supplier said. "The domestic market for gasoil has been tight since early May, right now with the ECA, the tightness is getting worse," the supplier added.

Low sulfur fuel oil, the LSMGO alternative, is available in limited quantities in China.

Refineries in China are geared towards the production of higher value products, and therefore do not produce enough fuel oil, where requirements are typically imported. Currently, only Chimbusco is able to supply LSFO in limited quantities. "[Chimbusco] is producing a small quantity of LSFO to test the market, to try out the fuel and see if the quality meets requirements," a source with knowledge of the matter told the press.

"Presently shippers can burn HSFO, the market for LSFO is too small," the source said.

Offers for Shanghai delivered LSMGO were heard between \$840-\$860/mt recently, the highest among North Asian ports, where offers were in the \$700-\$800/mt range. The price of Shanghai-delivered LSMGO rose to \$837/mt, the highest since S&P Global Platts began assessing on June 1, 2017.

43. Corning and Changan Automobile Partner on Gasoline Particulate Filters in China

Changan Automobile, one of the largest Chinese automakers, has chosen Corning Incorporated as its supplier of gasoline particulate filters (GPF). Corning® DuraTrap® GC gasoline particulate filters will be integrated into the emissions control systems of Changan's next generation of vehicles to help reduce fine particulate emissions, enabling the automaker to meet the upcoming China 6 light-duty vehicle emissions standards. This supply relationship is based on a strong long-term partnership between the two companies.

Starting in 2015, Corning and Changan began joint research and development activities around GPF technology, establishing a project team and running experiments to fully prepare for the China 6 standards. The technology solutions they developed, including the integration of DuraTrap® GC filters into the emissions control system of Changan's powertrain designs, are based on this research and will be available starting on Changan's first China 6 engine platform, H15T. This platform has consistently succeeded in meeting tighter China 6 gaseous and fine particulate emissions limits. Vehicles on this engine platform, equipped with DuraTrap® GC filters, will begin production at the end of 2018.

"We are very pleased to announce this next phase of cooperation between Changan and Corning, which is the product of years of effective collaboration and builds on Corning's decades-long experience working with major automakers in China and other international markets on emissions control solutions," said Annie Wang, commercial director, Corning Environmental Technologies, China. "Corning is proud to be able to contribute meaningfully to China's clean-air initiatives and foresees the market for DuraTrap® GC filters in China growing as more vehicles leverage this technology to help reduce particulate emissions."

DuraTrap® GC filters are designed and optimized to help automakers effectively reduce fine particulate emissions, such as PM 2.5, from gasoline engines. These filters feature a new, cordierite-based material composition with an innovative engineered ceramic microstructure that delivers high filtration efficiency of fine particulates, while maintaining engine performance with low back pressure. A range of wash coat loading needs are also supported for additional catalytic activity to help address tighter gaseous emissions standards as well.

44. 'Nest' Of Illegal CFC-11 Production in China Shut Down

In June, the New York Times broke a major story showing that Chinese companies were likely behind a spike in CFC-11, an ozone-depleting chemical that was banned under the Montreal Protocol. Chinadialogue reported in August that the Chinese government was investigating the issue and cracking down on illegal production. According to the People's Daily, the Ministry of Ecology and Environment and local environment bureaus recently identified one source of the pollution, breaking up a CFC-11 production den in Henan province. The unauthorized production was hidden within another factory. The authorities seized 29.9 tons of CFC-11 and 30 tons of carbon tetrachloride – a feedstock for CFC-11, which they will dispose of safely. Research in Nature claimed that around 13,000 tons of CFC-11 have been illegally released – most of that production is likely from China, based on research by the UK-based NGO Environmental Investigation Agency. Three people were arrested and two more are being looked for.

45. New Winter Air Quality Targets For Northern China

The Chinese government has released air quality targets in northern China this winter under the finalized Jing-Jin-Ji winter air pollution action plan. The target for PM 2.5 and the number of

polluted days in the region will be a 3% reduction from the previous year rather than a 5% reduction as planned in the August draft. Orders for key industries to slash their production by a certain percent were also eliminated this year. Instead, restrictions will be adjusted based on local conditions. Some media outlets have interpreted the 3% target as a relaxation of air pollution measures. But experts say it will still be hard to meet it as air pollution dropped significantly last year. However, as oversight is devolved to the local level under the new plan, pollution may be harder to control.

In order to implement the decision-making arrangements of the Party Central Committee and the State Council on winning the blue sky defense war and implement the "Three-Year Action Plan to Win the Blue Sky Defense War", we will do our best to prevent air pollution prevention in the autumn and winter of 2018-2019. Vice Premier Han Zheng presided over the Beijing-Tianjin-Hebei Conference. And the first meeting of the leading group on air pollution prevention and control in the surrounding areas made an important speech. The meeting reviewed and approved the "Action Plan for the Comprehensive Management of Air Pollution in the Autumn and Winter of 2018-2019 in Beijing, Tianjin and Hebei and the Surrounding Areas" (hereinafter referred to as "Toughening Action Plan"). It is now issued for execution and is notified as follows:

First, unify thinking and do a good job of implementation. All regions and departments have steadily promoted the prevention and control of atmospheric pollution. From January to August 2018, the ambient air quality in Beijing-Tianjin-Hebei and surrounding areas showed a steady trend, but the results were not stable, especially in the autumn and winter. It is expected that the meteorological conditions in winter in 2018 will generally deviate from the previous year, and the air quality may rebound. All regions, departments and relevant central enterprises should further unify their ideological and cognitive actions to the decision-making and deployment of the Party Central Committee and the State Council, strengthen organizational leadership, adhere to the general tone of steady progress, highlight problem-oriented, focus on key areas and key time periods, Take more targeted measures, do a solid job in the comprehensive management of air pollution in autumn and winter, and promote the continuous improvement of ambient air quality.

Second, strengthen guidance and implement responsibilities. All relevant departments shall, in accordance with the division of responsibilities and guide the implementation of the "Tackling Action Plan" mission requirements, improve policy measures, increase support, fully mobilize local and enterprise enthusiasm, and strengthen supervision and management. The local people's government is the main body responsible for the implementation of the "Defensive Action Plan". It is necessary to decompose the tasks and refine the timetable and responsible persons. It is necessary to use the real feelings of the masses as the testing standard to ensure that the statistical assessment data is true and accurate and win the trust with actual results. people. Enterprises are the main body of implementation of pollution control and should take the initiative to assume social responsibilities and formulate implementation plans. Central enterprises must play an exemplary role. All relevant departments and local people's governments should pay attention to propaganda and guidance, promptly and proactively release authoritative information, and mobilize all the people to jointly win the blue sky defense war.

Third, strengthen the scheduling and strengthen the assessment. Before the end of September 2018, all relevant provinces (cities) submitted to the Ministry of Ecology and Environment a list of "disintegrated and dirty" enterprises to clean up and rectify the project, a list of scattered coal management, a list of households, and a list of heavy pollution weather emergency plans, 2018, 1018 Before the end of the month, submit a comprehensive list of boilers, a list of industrial furnaces and kiln management, a full-caliber list of unorganized emissions of volatile organic compounds in key industries, and a peak production plan for industrial enterprises. From October

2018, all relevant provinces (cities) and central enterprises will report the progress of key tasks before the 5th of each month. Implement strict assessment and accountability, strengthen the responsibility for air pollution control, work in place, pollution problems, air quality deterioration, strengthen the supervision and accountability, and effectively implement the local party committee and government ecological environmental protection "party and government responsibility" Double responsibility."

46. China Ministry Says Coal Region Lacks 'Will' To Fight Pollution

China's environment ministry called out officials in a northwestern coal producing zone for lacking the "will" to fight pollution, the latest region to come under scrutiny in Beijing's war on smog.

In its latest review of how regions are complying with tougher pollution laws, the Ministry of Ecology and Environment singled out Ningxia for criticism on the day China said the country's coal output hit its highest in nine months in September. Some districts and departments in Ningxia did not have the "will" or confidence to control pollution, inspectors said in a report in the China Environment News, a ministry publication.

They said Ningxia's economic and trade commission had submitted reports alleging that environmental protection was a "burden on industrial growth". The commission blamed a tougher smog control and inspection regime for a slowdown in industrial activity, despite what inspectors said were "obvious errors" in the commission's data.

"They (the commission) tried to get rid of their responsibility and interfere with decision making," the inspectors said.

Ningxia, a poor and drought-prone region, wants to exploit its reserves of coal and export electricity through a beefed-up power grid. But it has been forced to shut down 32 small coal mines and millions of tons of annual production capacity in sectors like steel and aluminum since a national clean-up campaign began in 2016.

Ningxia is the latest region to be chastised by the environment ministry for failing to enforce anti-pollution measures. Three cities in Jiangsu were accused recently of exaggerating coal consumption cuts last year.

Hebei, the biggest steel producing region, came under fire, with inspectors criticizing some officials for not rectifying previous failings in controlling pollution. Hebei's dependence on fossil fuels remained high, with coal accounting for 83.6 percent of the province's primary energy consumption, 23 percentage points higher than the national average, the ministry said.

Officials have faced some form of punishment as a result of the latest round of poor environmental reviews. In the three regions reported so far, 1,439 officials were held responsible for violations, of which 707 were reprimanded and 183 detained.

The Beijing-Tianjin-Hebei region is one of China's most industrialized, with Hebei province producing nearly a quarter of the country's steel. It has been on the front line of the country's war on pollution for more than four years. The region is about to embark on another tough winter campaign against smog, with inspectors set to force industrial factories to curb output if they have not done enough to clean up their operations.

Vice Premier Han Zheng said recently that authorities must ensure residents have enough heating this winter, even as thousands of households switch from coal to cleaner natural gas. Han, who leads a cross-ministerial committee to tackle pollution in the region, said it was “absolutely forbidden” to dismantle boilers and leave households without a source of heat, the Xinhua news agency said.

Parts of the region were left without heating last year after governments demolished coal-burning boilers but failed to secure enough natural gas as a replacement fuel.

Hebei was home to four of China’s 10 cities with the poorest air quality, according to data for the first nine months of 2018. That is down from six cities in 2017.

47. Musk’s Big China Play Comes as World’s Top Car Market Slows

Tesla Inc.’s breakthrough deal to secure land for a Shanghai factory commits the electric-car maker to a multibillion-dollar investment just as the Chinese vehicle market falters. The company secured more than 200 acres of land for its planned Gigafactory 3 in Shanghai with a 973 million yuan (\$140 million) bid, according to an October 17 statement. Acquiring the parcel keeps Tesla on track to spend several billion dollars on its first overseas plant in the world’s largest electric-vehicle market.

But with the first cars from any new factory still years off, Tesla and Chief Executive Officer Elon Musk face a Chinese car market poised to shrink for the first time since at least the 1990s. President Donald Trump’s trade war with China has led to higher Chinese tariffs on American imports, stoking concern about an economic slowdown.

As competition increases from local players, time isn’t on Tesla’s side. “They need to do things fast,” said Yale Zhang, managing director of Automotive Foresight Shanghai Co. “In China it’s always the fast fish eats the slow fish, not the big fish eats the small fish.”

Tesla’s Chinese facility is expected to churn out about 250,000 vehicles annually at first, and that capacity will double over time. But it could be about three years before the first cars roll off the production line, Musk said in August.

Meanwhile, there are signs China’s car market, a mainstay of industry growth, is on the turn. Purchases of passenger vehicles by dealerships plunged for a third straight month in September.

Adding to the worrying outlook in China—Tesla’s largest market after the U.S.—is the economic drag that’s been exacerbated by the trade spat. Factory activity is in retreat and the stock market has slumped, fueling concern over consumer appetite for luxury goods to gambling.

China’s government slapped a new 25 percent tariff on American auto imports in July, adding to an existing 15 percent tariff. Since then, Tesla’s China sales have slowed, falling 30 percent in July and August compared with the same period last year. Tesla sold 1,676 vehicles in China in July and August, the latest monthly data available, according to China Automotive Information Net.

“Taking ocean transport costs and import tariffs into account, Tesla is now operating at a 55 percent to 60 percent cost disadvantage compared to the exact same car locally produced in China,” the company said in an October 2 statement that acknowledged what it called “headwinds” from the trade dispute.

This makes for a challenging competitive environment, given that China is by far the largest market for electric vehicles, Tesla said in its statement.

“If the trade war continues unabated, they’re going to be faced with a margin squeeze because of the tariffs,” said Bill Russo, founder and CEO of Shanghai-based consultancy Automobility Ltd. “They are going to have to make the choice: continue to sell at current pricing and eat the tariff penalty or add to the cost of the car and reduce their market.”

While setting up a factory in China could help avoid those import penalties, local companies like Shanghai-based NIO Inc., which raised \$1 billion in a U.S. initial public offering in September, could gain ground. The company is promising more upper-scale cars that aim to close the quality gap with Musk’s EVs, said Steve Man, Bloomberg Intelligence’s Hong Kong-based auto analyst.

The price of a Tesla Model X 75D would be 611,000 yuan if, like its local competitors, it was exempt from any tariff, according to Bloomberg Intelligence. Following China’s retaliation against Trump’s tariffs by raising costs for American imports, the additional tariffs and value-added taxes have raised the cost of that same Model X to 1 million yuan.

The price of a comparable NIO sport utility vehicle, the ES8, is about 380,000 yuan after subsidies from the central and local governments, according to Bloomberg Intelligence. “Tesla wants to have this deal with China so they can be in front of this trade war, but I think it’s a little bit too late,” Man said.

To be sure, NIO hasn’t yet established itself in the Chinese market. The company only started delivering vehicles in June and total losses in 2016, 2017 and the first half of 2018 exceeded \$1.6 billion, according to Bloomberg New Energy Finance. The company said that it delivered 1,766 of its seven-seat SUV in September, 58 percent more than in August.

Demand for electric vehicles broadly has been strong in China, even though the sector still accounts for a small fraction of the market. Sales of fully electric passenger cars gained 68 percent in the first nine months of 2018 and jumped 84 percent year on year in September alone.

Tesla’s swift landing in Shanghai shows China’s opening-up is on a steady course, and the nation is doing so for all companies including U.S. ones, despite the trade war, said Liu Jianying, an associate research fellow at the Chinese Academy of International Trade and Economic Cooperation, according to a Global Times newspaper report.

On top of the company’s challenges on China’s mainland, Tesla’s sales in Hong Kong have collapsed following the government’s termination of a generous tax break last year. Tesla sold just 71 vehicles in the city in the first seven months of 2018, down from more than 1,700 in the same period a year earlier, according to Bloomberg Intelligence data.

To stem that decline, Tesla said on October 14 that it was opening a two-level, 50-stall charging facility, the biggest of its kind in the Asia-Pacific region, in Hong Kong’s Kowloon Bay district.

48. Tesla Model 3 Range-Efficiency Edge Is A Serious Market Strength

Although Tesla may still sometimes be finding its way in terms of how to build cars themselves, it retains a distinct advantage over pretty much every other automaker in one respect: superb power management.

Buried in the company's third-quarter 2018 financial results—hailing a profit—were some numbers worth boasting about more openly: that the Model 3, with its new-generation 2170 cells and reengineered power systems, today has a range efficiency of about 4.1 EPA-rated miles per kwh.

Range efficiency is a no-nonsense energy equivalent to gasoline fuel economy—the distance a vehicle can take its passengers per energy unit.

The Model 3 Long Range achieves an EPA range rating of 310 miles, from a 75-kwh battery.

Tesla was initially oddly timid about providing numbers confirming the Long Range battery capacity; but it helps underscore a point: that it's dramatically improving the range efficiency of its vehicles—this matters greatly in the viability of electric cars when batteries are expensive, heavy, and tough to package and charging is sometimes fraught.

Credit where credit is due, the Model 3 also represents a mammoth improvement over the Model X's 3.1 miles per kwh (or the Model S's only slightly better numbers).

“To put this in context, our current or upcoming AWD (2019) competition is expected to achieve 2.4 to 2.8 miles of EPA range per kwh,” said the company, in what is likely an open jab at the Jaguar I-Pace, which has a 90-kwh battery and has achieved just 234 miles of EPA-rated range.

Tesla claims that the Model 3's curb weight, in Long Range rear-wheel drive form, is just three percent heavier than its gasoline equivalent—assumed to be the BMW 3-Series.

But there's a dark horse: the Hyundai Ioniq Electric, with its modest 28-kwh battery, achieves an EPA range rating of 124 miles, which equates to 4.4 miles per kwh—better range efficiency than the Model S. The Hyundai remains the only car on the market with better efficiency numbers than the Model 3, as rated in MPGe (based on the energy content in a gallon of gasoline). It can't, match the Model 3 Long Range's 5.1-second 0-60 mph acceleration time, though.

Hyundai's latest electric vehicle, the Kona EV, underscores the challenges as battery packs scale up, however: efficiencies tend to drop somewhat. Hyundai claims an EPA rating of 258 miles for its upcoming 64-kWh Kona Electric—a bit over 4.0 miles per kwh. That's about as good as it gets; as of yet, no other electric vehicle with a large pack comes close.

For the time being, with expertise in energy storage and power systems at the core of Tesla, and a healthy head start, it will likely remain a moving target for other automakers well into the next generation of vehicles.

49. Dyson Picks Singapore to Build Electric Cars Rivaling Tesla

Dyson Ltd. picked Singapore to manufacture its first electric car, pushing ahead with plans to challenge Tesla Inc. in the hottest sector of the automotive market. The closely held British manufacturer, also known for vacuum cleaners, hand dryers and air purifiers, said October 23 it will complete the factory by 2020 and stuck to a goal of rolling out its first model by 2021 as part of a 2 billion-pound (\$2.6 billion) effort to expand into automobiles.

The choice of Singapore—which doesn't have a single car-manufacturing plant and is one of the costliest places in the world to buy an automobile—comes as Tesla zeroes in on establishing a

factory in China. The decision is a victory for the city state, home to the planet's second-largest container port and a manufacturing hub for high-technology products such as Rolls Royce Holdings Plc aircraft engines.

Dyson is among new contenders entering the race to make electric vehicles, which are gaining market share from gasoline-powered and diesel autos. Besides Tesla, Dyson will compete with global giants such as Daimler AG, Volkswagen AG and General Motors Co. that are all charging ahead with EV plans.

Singapore, with fewer than 6 million people, is a minor market itself but has technology talent and strong intellectual-property protections, regularly topping regional IP rankings. Dyson already has a manufacturing hub in Singapore that focuses on digital motors, with the company employing about 1,100 people in the region.

The country also has a free trade agreement with China, the world's largest market for electric cars. While Tesla last week took a step toward building an auto plant in Shanghai, Dyson's founder, James Dyson, has complained about IP theft in China.

China will remain the top electric-vehicle market at least until 2040, when more than half of all new car sales and a third of the planet's fleet—equal to 559 million automobiles—will be electric, according to a forecast by Bloomberg NEF. James Dyson said the company's "center of gravity" has tilted toward Asia, which last year generated almost three quarters of revenue growth.

Dyson had considered the U.K. and various Asian locations for its car facility. It has extensive manufacturing experience in Malaysia, and previously made products in the U.K., which may lose some of its allure for global companies with the planned exit from the European Union.

Exactly what type of cars Dyson will be producing remains to be revealed. Construction is still ongoing at its test facility at Hullavington, England, which includes a now 400-strong automotive team, a handling track and an off-road route.

Dyson's plan is set to bring back auto manufacturing to Singapore after a decades-long absence. Ford Motor Co. established Southeast Asia's first car-assembly plant in the country in 1941 and closed it down in 1980.

Now, Singapore is one of the world's most expensive car markets because of the city state's policies aimed at curbing congestion. A standard Toyota Corolla Altis, one of the most popular models in the country, costs more than \$80,000 when including the car-ownership permit and excise and registration duties. That's about four times the price of an equivalent model in the U.S.

50. Chinese EV Makers, Nurtured By State, Now Look For Way Out Of Glut

Humming away in an industrial estate in the eastern Chinese resort city of Hangzhou, electric vehicle designer Automagic is one of hundreds of companies looking to ride the country's wave of investment in clean transportation. The company wants to find a niche in a crowded sector that already includes renewable equipment manufacturers, battery makers and property developers like the Evergrande Group, as well as established auto giants.

But not all of the electric vehicle hopefuls will make it to the finish line.

"This (large number of firms) is inevitable, because whenever there is an emerging technology or emerging industry, there must be a hundred schools of thought and a hundred flowers blooming," said Zhou Xuan, Automagic's general manager, referring to Chinese leader Mao Zedong's ill-fated 1956 "Hundred Flowers" campaign aimed at encouraging new ideas.

China is using preferential policies and brute manufacturing power to position itself at the forefront of global efforts to electrify transportation. By the end of 2017, ownership of new-energy vehicles -- a category that includes electric vehicles, plug-in hybrids and green alternatives such as fuel cell vehicles -- reached 1.8 million in China, over half the world's total.

With market expectations high, Chinese EV maker Nio, a rival to Tesla, launched a high-profile IPO in New York in September.

In July, the industry ministry published a list of 428 recommended NEV designs built by 118 enterprises throughout the country. It included not only established carmakers like FAW Group and Geely Automobiles, but also small, new entrants with names like Greenwheel, Wuhu Bodge Automobiles and Jiangsu Friendly Cars.

But regulators are already concerned about overcapacity and "blind development." As subsidies are cut, smaller start-ups need to develop a competitive edge. "After a period of intense competition, the rocks will appear, and the weak will be consolidated or eliminated," Zhou said.

Overcapacity has been a persistent concern for many Chinese industries, with thousands of firms, backed by growth-hungry local governments and supported by risky loans, expanding quickly. Over the years, China has been forced to act against price-sapping supply gluts in steel, coal and solar panels, among others.

Electric vehicles could be next, as local governments feel pressure to create champions while following state instructions to "upgrade" their heavy industrial economies.

Some executives say the market is already distorted by subsidies granted to inefficient and poorly performing firms. "Right now, the rapid growth of NEVs is not a market choice but government-guided behavior, with growth stimulated by subsidies," said Li Lei, deputy director of the new energy department of Jiangxi Dacheng Autos, a new joint venture carmaker in eastern China's Jiangxi province.

Though sales soared 88 percent in the first eight months of 2018, hitting 601,000 units, the National Development and Reform Commission has promised to tackle irrational growth in the sector. In draft rules released this year, it said it would "plan and arrange the new energy vehicle industry scientifically," and block new production capacity in regions where the utilization rate was less than 80 percent.

But China has often relied on "strategic" supply gluts to boost competitiveness. Excess production in solar power forced producers to reduce costs and compete, subsidy-free, with conventional energy sources.

Liu Xiaolu, sales manager with ICONIQ Motors, a Tianjin-based luxury EV maker, said the large number of companies could be a "necessary stage" of development for the sector. "You cannot say that 20 enterprises will definitely be able to develop the entire industry by themselves, and it probably needs everyone to come together, and then gradually get eliminated afterwards," he said.

51. Beijing To Add 300 Kilometers Of Urban Rail, Optimize Bus Routes

Beijing will enhance its public transportation network by building more subways and upgrading its bus routes. According to an announcement made at the World Metropolitan Transport Development Forum, the Chinese capital will add 300 kilometers of urban rail lines by 2020 and cut redundant parts of its bus routes to increase efficiency.

Beijing's urban rail transit network now measures 608 kilometers, handles a daily passenger volume of over 10 million, and runs at train intervals as frequent as one per two minutes. The city has also opened several bus routes capable of transporting higher passenger volume and increased the bus-only lanes to a total length of 907 kilometers.

Research finds that due to tougher measures to control car volume and traffic flow, more people now opt for bikes or public transportation.

A leadership group working on the city's transportation network was established this year, according to Li Xianzhong, director of the Beijing Municipal Commission of Transport. The group identified and analyzed 17 out of 216 elements that impact transportation in the Chinese capital, deciding that the city needs to "control the demand in transportation," "improve its capacity" and "strengthen management," he said.

Li said the city will introduce more measures to increase travel efficiency. In addition to building more rail lines, the city will introduce more rapid buses at major stations and readjust certain bus routes to make up for the distance where subways are unavailable.

This year, Beijing's bus network has upgraded 73 lines and cut 272.9 kilometers of overlapping routes as well as 565 overlapping stations.

Li said that buses will be dispatched more effectively based on traffic flow in different times of the day and during the month, and bus tracking apps will be upgraded for passengers to find information and plan their trips.

As for parking problems, Li said Beijing will make better plans for parking spaces, continue strict law enforcement, and introduce more electronic toll collection devices by learning from best practices overseas and considering Beijing's own circumstances.

52. India Reconstitutes EPCA to Tackle Environment Pollution In NCR

The Centre has reconstituted the Supreme Court-empowered [Environment Pollution](#) Prevention and Control Authority ([EPCA](#)), which is tasked with taking various measures to tackle air pollution in the National Capital Region. The tenure of the last EPCA expired on October 3.

"...the [Central government](#) hereby re-constitutes the Environment Pollution (Prevention and Control) Authority," an order issued by the [Environment Ministry](#) on October 3 said. The ministry said that while reconstituting the EPCA, it tried to broad-base the organization and therefore brought in more members.

Former secretary Bhure Lal continues to be the chairman, while the Centre for Science and Environment (CSE) DG Sunita Narain is one of the members.

The other members of the 20-member re-constituted authority include Ajay Mathur, who is the Director General of The Energy Research Institute (TERI), Arunabha Ghosh, the Chief Executive Officer of the Centre for Energy Environment and Water, Navroz K. Dubash, the Senior Fellow for the Centre for Policy Research.

Others include Vishnu Mathur, Director General, Society of Indian Automobile Manufacturers; Arvind Kumar, former professor of surgery, AIIMS, in New Delhi and presently Chairman Centre for Chest Surgery, Sir Ganga Ram Hospital; Krishna Dhawan, Chief Executive Officer, Shakti Sustainable Energy Foundation, New Delhi among others.

The EPCA was constituted with the objective of protecting and improving the quality of the environment and preventing and controlling the environmental pollution in the National Capital Region. In November, the EPCA had enforced several measures, including closure of the Badarpur thermal power plant, ban on brick kilns, hot mix plants and stone crushers, and construction activities.

53. Private Vehicles In Delhi Will Be Stopped From November 1 If Pollution Worsens

As part of a graded action plan against pollution, the Environment Pollution Control Authority said private vehicles will be stopped from plying in New Delhi if air pollution continues to worsen in the capital.

"Let us hope the air pollution situation in Delhi doesn't deteriorate or else we will have to stop plying of private vehicles. Only public transport will be used," Bhure Lal, Chairman, Environment Pollution Control Authority, was quoted as saying by news agency ANI.

Air quality in Delhi and the National Capital Region (NCR) deteriorated further after an overnight spike in Particulate Matter (PM).

The Indian Institute of Tropical Meteorology (IITM) said that the prevailing meteorological conditions are less favorable for dispersal of pollutants for the next two days due to moderate ventilation index and low wind speed.

54. SC Orders Seizure Of 15-Year-Old Petrol, 10-Year-Old Diesel Vehicles

The judicial intervention came on a day when pollution in 10 areas in Delhi hit the severe mark - the sixth and the last stage on the air quality index.

All 15-year-old petrol and 10-year-old diesel vehicles need to be impounded in Delhi-NCR, the Supreme Court ruled on Monday as air quality became more dangerous. The judicial intervention came on a day when pollution in 10 areas in Delhi hit the severe mark - the sixth and the last stage on the air quality index. Overall, air quality was in the second most alarming category: very poor. "If you take a walk in the evening to Old Delhi railway station, you will see poor people on cycle rickshaws. They have no option..." the court said. "Hundreds of people are earning their livelihood like that... Will you tell them to kill themselves by working in this pollution?" it asked Delhi government authorities.

Chief minister Arvind Kejriwal, however, blamed Congress-ruled Punjab and BJP-ruled Haryana, saying crop stubble burning in the two states had triggered the crisis. He also blamed the Centre for "inaction". Union environment minister Harsh Vardhan hit back at the AAP chief and said, "I

would like to say to him that there are a few things on which politics should not be played." The BJP leader referred to NASA images to claim fewer crop stubble burning incidences this season.

Another Union minister and BJP leader, Vijay Goel, said Kejriwal was misleading people. "He should clean Delhi and not blame others," he said. Inside the court, a bench headed by Justice Madan B Lokur was firm in its order that old, smoke-billowing vehicles will be impounded if found plying in Delhi-NCR. It ordered their lists be published on the websites of the Central Pollution Control Board (CPCB) and the transport department. Advertisements in this regard will also be published in newspapers.

The CPCB will immediately create a social media account for citizens to lodge complaints about pollution, said the bench that also comprised Justices S Abdul Nazeer and Deepak Gupta. The National Green Tribunal (NGT) had also banned such vehicles in Delhi-NCR. But the ban had not been taken seriously. Meanwhile, the Supreme Court-appointed EPCA informed the top court on Monday that commercial vehicles like trucks and taxis were the major source of pollution in the National Capital, and that there was a need to control their operation.

The Environment Pollution (Prevention and Control) Authority (EPCA) said that heavy commercial vehicles release very high levels of carbon monoxide and nitrogen oxide. It pointed in its report that taxis like Ola, Uber travel 400 km per day, as against personal cars that travel 55 km per day, and even if these vehicles use CNG, their net contribution to pollution will be high. The report said taxis and autorickshaws must use the cleanest fuel and technology. The EPCA filed a report on the status of implementation of orders on air pollution in Delhi-NCR and on further directions needed, given the severity of the problem.

The EPCA's report suggested measures such as cleaning up vehicles through technology and to reduce and restrain the growth of individual vehicles through massively augmented public transport systems, so as to re-check the sources of pollution. The report cited the 2018 Emission Inventory of Delhi, released by the Union ministry of earth sciences, according to which there has been a 40 per cent increase in vehicular pollution between 2010 and 2018 in Delhi and its adjoining areas, thereby making them the key contributors to air pollution in the National Capital.

Out of all the vehicles, heavy commercial vehicles like trucks and other ones such as taxis are the major pollution source, with very high carbon monoxide and nitrogen oxide emissions, it said. The report stressed on the fact that industries now contribute up to 18 per cent of the air pollution in the city, and that industrial pollution has increased by a whopping 48 per cent between 2010 and 2018.

55. India Has More E-Rickshaws Than China's E-Vehicles Fleet

An electric-vehicle revolution is gaining ground in India, and it has nothing to do with cars. The South Asian nation is home to about 1.5 million battery-powered, three-wheeled rickshaws – a fleet bigger than the total number of electric passenger cars sold in China since 2011. But while the world's largest auto market dangled significant subsidies to encourage purchases of battery-powered cars, India's e-movement hardly got a hand from the state.

Rather, drivers of the ubiquitous three-wheelers weaving through crowded, smoggy streets discovered that e-rickshaws are quieter, faster, cleaner and cheaper to maintain than a traditional auto rickshaw. They also are less strenuous than cycle rickshaws, which require all-day peddling. So, with more rides possible in a day, the e-rickshaws are proving more lucrative.

As many as 11,000 new e-rickshaws hit the streets every month, and annual sales are expected to increase about 9 per cent by 2021, according to consulting firm A.T. Kearney. Three-wheeled vehicles make up a \$1.5 billion market, and manufacturers of electric versions include Mahindra & Mahindra Ltd and Kinetic Engineering Ltd, along with smaller outfits that assemble parts imported from China.

“This is a once-in-a-lifetime, transformational opportunity that we’re looking at,” said Goldie Srivastava, chief executive officer and co-founder of SmartE, an Uber-style app using 800-plus e-rickshaws around New Delhi. “When we look at electric mobility, the focus should be: Are you as a government enabling products that are designed for the future?”

India’s dominant ride-hailing startup, Ola, plans to place 10,000 e-ricks in its service by next April.

India is the world’s fourth-largest auto market, but previous attempts to boost private electric-car ownership flopped. The government likely scaled back because it fears disrupting an industry that contributes about 7 per cent of the total gross domestic product, according to a Bloomberg NEF report in March.

Unlike the estimated 1.35 million passenger EVs cruising around China, the number of electric cars plying Indian roads is a paltry 6,000, according to BNEF data. Chinese automakers sell more than that in three days.

India’s largest automaker, Maruti Suzuki India Ltd, won’t sell its first EV until 2020.

Prime Minister Narendra Modi’s administration now is pivoting toward promoting EVs in public transportation and fleet operations – primarily, two- and three-wheelers, taxis and buses. The ministry of finance is finalizing a plan to spend about Rs 4,000 crore (\$600 million) in the next five years to improve the nation’s charging infrastructure and subsidize e-buses.

“India needs to focus on electrifying two-wheelers and three-wheelers,” said Amitabh Kant, chief executive of NITI Aayog, a government policy institute helping formulate the new strategy.

Then there’s the ameliorative effect that e-ricks have on the toxic air in India, home to 10 of the world’s most-polluted cities, according to the World Health Organization.

A total of 635,698 three-wheel vehicles was sold during the fiscal year that ended in March – a 24 per cent increase from a year earlier, according to the Society of Indian Automobile Manufacturers. By comparison, about 3.3 million passenger cars were sold, mostly all powered by gasoline or diesel.

One hindrance to the potential growth of EVs is the lack of charging and battery-swapping stations nationwide. India had about 425 publicly available charging points at the end of last year. By 2022, government and private efforts are expected to boost that to an estimated 2,800 charging points, according to BNEF. Instead of waiting, some companies are starting to build their own infrastructure. SmartE partnered with Delhi Metro Rail Corp. to provide charging near 10 stations, with plans to expand throughout the 214-station system by the end of 2020.

Another hindrance is the lack of bank financing for traditional rickshaw drivers, who typically earn low incomes, said Shishir Agrawal, managing director of Shigan eVOLT Ltd, the parent company of manufacturer GreenRick. The Gurgaon-based company, which sells e-rickshaws mostly in

Delhi and Uttar Pradesh, could more than triple production to 1,000 vehicles a month if that issue was resolved. The potential market for e-rickshaws could be sales of 20 million vehicles a year, he said.

“If the subsidies get better, and easy financing options become available, this market is unstoppable,” Agrawal said.

56. China’s Leading Electric Vehicle Maker To Set Up Manufacturing Plant In India

India is emerging as the world’s biggest market for electric bikes. As per sources, China’s leading electric vehicle company, Sunra, which exports e-bikes and its spares to some 70 countries, including India plans to set up a factory in the country. The firm is keen in investing in the country, especially in light of Prime Minister, ‘Narendra Modi’s’ policies for the electric vehicle (EV) sector and invitation to companies to manufacture e-vehicles in India.

According to media sources, Sunra’s General Manager Victor Lu, said that, “we are studying the policies and we want to set up a factory in India, most likely in Bengaluru.

As per McKinsey, China has emerged as the leader in both the supply of and demand for electric vehicles. In fact, in the year 2017, 777,000 EVs were sold in China as compared to 507,000 in the year 2016. Victor Lu, however, thinks that India will outpace China in the upcoming four or five years in terms of demand for e-vehicles.

He stated, “we see India as the world’s biggest market for e-bikes and we want to tap into it.” There is a so much pollution in Delhi and other Indian cities. People would have to switch to e-bikes very soon.”

He further added that, “the Modi government’s decision to encourage the use of e-vehicles is all the more reason for us to invest in India.” Moreover, India is the world’s second-largest greenhouse gas emitter after China and tops the list of countries having the biggest number of two-wheelers that run on petrol.

To add on, many of the world’s most polluted cities are in India. Thus, the Modi government wants Indians to switch to e-vehicles. As per statistics, it will significantly cut the country’s oil bill and bring down emissions by 37 percent.

Victor Lu also mentioned that, “at present, we make only 20 percent bikes for the Indian market, but we want it to be 80 percent in the future. There are six models that are currently under Automotive Research Association of India for tests.”

57. Only BS-VI Vehicles Can Be Sold From April 2020, No Relief For Car Makers

Only Bharat Stage VI (or BS-VI) vehicles shall be sold across the country from April 1, 2020, the Supreme Court has announced. No BS-IV or BS-VI non-compliant vehicles can be sold after this deadline. In 2016, the center had announced that the country would skip BS-V norms and adopt BS-VI norms by 2020.

Emphasizing the urgent need to switch to a cleaner fuel, the top court also rejected the center’s request for a three-month extension of the deadline so that car makers can sell their non-BS-VI vehicles.

At a previous hearing, advocate Aparajita Singh, who is advising the top court in the air pollution matter, had opposed the government's move to extend the deadline till June 30, 2020 to enable vehicle manufacturers to sell their BS-VI non-compliant four-wheelers.

The automobile manufacturers had justified the grace period saying India was attempting to jump from BS-IV emission norms to BS-VI in a short span of time.

BS-VI grade petrol and diesel, billed as "ultra-clean" fuel, became available in Delhi from April this year. The fuel helps even current generation vehicles cut particulate emissions somewhat.

The move to phase out BS-IV and promote use of clean fuel is aimed at lowering the alarming levels of air pollution in the national capital, among the world's most-polluted megacities.

Delhi is the first city in the country to leapfrog from BS-IV grade petrol and diesel to BS-VI. Cities in the national capital region like Noida, Ghaziabad, Gurgaon and Faridabad as well as 13 major cities including Mumbai, Chennai, Bengaluru, Hyderabad and Pune will switch over to cleaner BS-VI grade fuel from January 1 next year. Rest of the country will follow from April 2020.

Auto industry body SIAM said it is bound to honor the Supreme Court verdict despite the order being a "huge challenge" for the industry as a whole. In a statement, Society of Indian Automobile Manufacturers (SIAM) President Rajan Wadhera said the government had provided a clear window of three months for registering the small number of fully built vehicles and six months for bus/truck chassis which may remain unsold with the dealer/manufacturer post April 1, 2020, after considering all aspects of the matter.

"However, the ongoing debate at the Supreme Court had created a huge ambiguity leading to policy uncertainty. While the verdict reads down a clear Gazette Notification issued by Government, it also puts to rest the big ambiguity haunting the industry for so long," he added.

With this "new clarity", the industry will have to put in much more effort and attention to meet the new target date of ensuring sales and registration of only BS-VI vehicles from April 1, 2020 onwards, Wadhera said.

"This will be a tough and huge task, as the date of manufacturing BS-VI vehicles will now have to be further preponed leading to still shorter time for vehicle testing and validation and even shorter lead time to the technology solution providers who have to optimize BS VI solutions for each vehicle model," he added.

The industry will put its best foot forward in efforts to comply with the Court Order, in the interest of improving the environment and its own commitment to the theme of 'Building the Nation, Responsibly, Wadhera said.

He, however, added that now it has become even more critical that the BS VI fuel of the desired specification should be made available freely across the length and breadth of the country well before the deadline of April 2020 so that the industry could commence sales of the BS VI vehicles. "Any slippage in making fuel available in any part of the country will have serious implications as BS VI vehicles will not be able to operate optimally on lower grade fuels," Wadhera noted.

On Wednesday, a three-judge bench headed by Justice Madan B Lokur made it clear that only BS VI compliant vehicle shall be sold in the country from April 1, 2020. The apex court was

deciding whether grace period should be given to automobile manufacturers for the sale of BS-VI non-compliant vehicles after April 1, 2020.

58. Old Audi, Mercedes, BMW Diesel Cars Banned In Delhi – Sold In Punjab

The Delhi Government has brought in a set of restrictions on diesel cars in Delhi to curb pollution. The Government does not issue NOCs for diesel cars having completed 10 years on the road. This has led to panic selling as owners of 9 year old cars in Delhi wish to sell of their cars at whatever prices they can get.

Used car dealers are picking up these vehicles and selling them off to buyers in Punjab, Haryana and Chandigarh. Used car dealers in the region claim that demand for Delhi's diesel vehicles have gone up 30%.

While diesel vehicles in Delhi are limited to a maximum of 10 years on the road, the life span of a similar vehicle in Punjab, Haryana or Chandigarh is 15 years which can then be extended for another 5 years following clearance from transport authorities.

Expensive cars such as Mercedes Benz, BMW, Audi, Mercedes and Jaguar are being bought from Delhi at considerably low prices- says a dealer in Chandigarh. While used car dealers are making a quick sale, buyers are also benefiting from lower prices.

59. Kathmandu Mayors Striving For Clean Air Learn About Mexico's Experience

As winter sets in and air quality deteriorates, most of Kathmandu Valley's 18 mayors gathered in Patan to listen to experts and discuss a strategy to reduce air pollution. The Mayors' Summit on Air Pollution heard from scientists that Kathmandu ranks 261 among the world's 3,000 most polluted cities. And that a third of the Valley's pollution is caused by vehicular emissions, 28% from road dust, 23% from garbage burning and 15% from brick kilns. In winter, local air quality is worsened by industrial pollution and crop burning smoke blown in from India.

One of the Valley's most pro-active mayors, Madan Sundar Shrestha of Thimi has been building bicycle lanes and widening sidewalks and advised fellow mayors that there was now enough awareness, and they should move into implementing remedial measures. The Mayor's Forum will soon decide on steps to be taken to improve the Valley's air quality.

The Mayors' Summit was jointly organized by Kathmandu and Lalitpur Municipalities with Clean Energy Nepal and the International Centre for Integrated Mountain Development (ICIMOD). Bhusan Tuladhar of Clean Energy Nepal pointed out that 20% of Kathmandu's vehicles caused half the Valley's pollution and urged national and local governments to improve fuel quality and enforce green emission stickers.

"It is time for the municipalities to act, and Kathmandu could learn from Mexico City which has curbed air pollution," Tuladhar added.

Mexico's Ambassador to Nepal Melba Pria presented a checklist of measures undertaken after Mexico City was declared the most polluted city in the world in 1992 and used to have only eight days of good air quality in a year. By 2015, it had 248 days of good air. Pria said the trick was to take measurable step-by-step approaches to ensure clean fuel, introduce catalytic converters, efficient public transport, and move out industries.

“Mexico City and Kathmandu are both situated in bowl-shaped valleys, but Kathmandu is where Mexico City was 30 years ago. We can offer lessons on how to clean the air. Don’t wait till the birds start falling dead from the sky, like what happened in Mexico City,” Pria told Kathmandu Valley mayors.

The mayors discussed how policy changes to improve air quality like better fuel and vehicle standards were necessary to be passed by the national government, but other measures like pedestrianization, bicycle lanes, and public transport could be municipality priorities. But it was vital to have the political will to remove air pollution and improve public health.

Said ICIMOD director General David Molden: “Our organization is based in Kathmandu Valley, and our research into air pollution can make a difference if it is used by national and local governments for policy interventions.”

60. Hong Kong Plans to Phase Out Old Diesel Vehicles

About 40,000 old, polluting diesel vehicles used by the commercial sector will be taken off the streets in five years as part of the Hong Kong government’s long fight against roadside air pollution. The plans include ex gratia payments to incentivize the 40,000 owners of “Euro IV” diesel commercial vehicles to replace their vehicles with cleaner “Euro VI” ones by 2023, and to study the feasibility of eliminating all new private diesel cars.

The measures were announced in Chief Executive Carrie Lam Cheng Yuet-ngor’s second policy address, and ahead of anticipated results from the government’s five-yearly review of Air Quality Objectives (AQO) later this year.

“Improving roadside air quality to better protect public health has always been a key environmental priority of the government,” Lam said. “Over the past five years, roadside concentrations of key air pollutants, namely respirable suspended particulates and nitrogen dioxide, have been reduced by around 30 per cent.”

One major policy move to achieve such a reduction was a similar scheme launched in 2013 to progressively retire 82,000 commercial diesel vehicles graded Euro III or lower. The last of these will be phased out by next year, and green groups have repeatedly asked “what next”.

Hong Kong follows the European Union’s emissions standards grading scheme. The newest and cleanest vehicles around the world are at Euro VI, but pre- Euro and Euro I one vehicles were still plying the city’s streets as recently as 2016.

The differences in emissions are stark. “A Euro VI vehicle belches out 90 per cent less nitrogen dioxide (NO₂) than a Euro IV vehicle,” a government source told the media. “By 2024, about 1,300 tons of NO₂ can be offset [from this policy move].”

Meanwhile, Lam said the Environmental Protection Department would consult stakeholders and commission a study on the feasibility of halting all new registrations of diesel private cars. These vehicles make up roughly a fifth of the private car fleet.

Other measures include tightening emissions standards for 50,000 motorbikes, a major source of volatile organic compound emissions, a major precursor for ozone pollution. Authorities will also subsidize trials for franchised bus companies to retrofit some of their fleet with better catalytic converters.

The Clean Air Network, a non-profit organization, welcomed the Euro IV phase-out but called for more drastic action such as setting targets to electrify the commercial and bus fleets, establish more lower emissions zones, and speed up the implementation of electronic road pricing. “The government should electrify the entire bus fleet by no later than 2036,” the group said.

61. Green Climate Fund (GCF) Approves BRT in Karachi

The GCF approved during its Board Meeting October 19th the first transport project developed by Grutter Consulting on behalf of the Asian Development Bank ADB. The project is a 30km fully segregated state-of-the-art Bus Rapid Transit System (BRT) including cycle lanes, a bike sharing system, last-mile connectivity with e-pedicabs and improved pedestrian facilities directly benefitting 1.5 million residents of Karachi. It produces biogas from cattle waste and uses 0-GHG emission biomethane-hybrid buses.

The project includes restructuring of the public transport network, and a fleet scrapping program and compensation mechanism. It shifts passengers towards public and Non-Motorized transport and implements a BRT system powered completely by biomethane. The project has a direct GHG reduction impact of 2.6 MtCO_{2e} over 30 years. The BRT infrastructure is adapted to increase climate resilience. The BRT has a positive impact on air quality and noise and the biogas plant will reduce freshwater usage and the discharge of effluents to the Arabian Sea. It will benefit Karachi’s population of 14.9 million through increased access to safe, reliable, and affordable public transport. Benefits are expected to include time savings, reduced vehicle operating costs, improved safety and universal access for women, children, and the disabled at all stations and in buses, including segregated areas for women. The share of female passengers on the BRT shall be increased from currently 10% to 20%. The total project cost is 583.5 MUSD of which 49 MUSD are provided from the GCF (37.2 MUSD as concessional loan and 11.8 MUSD as grant). ADB finances 442 MUSD and the Government of Pakistan 92.5 MUSD.

62. South Korea’s Hyundai Oilbank To Start Supplying 0.5% Sulfur Bunker Fuel In Oct 2019

South Korean refiner Hyundai Oilbank plans to start supplying bunker fuel with maximum 0.5% sulfur at South Korean ports in October 2019, a company source said. The International Maritime Organization will cap the sulfur content in marine fuels at 0.5% from January 2020, down from the current 3.5%. The refiner will use existing facilities to produce low sulfur bunker fuel until May 2020.

Hyundai Oilbank plans to expand its residue desulfurization unit’s capacity from the current 100,000 b/d to 130,000 b/d in May 2020, S&P Global Platts reported previously.

From October 2019 to May 2020, the refinery will produce low sulfur bunker fuel by using material coming from the residue desulfurization unit; the material is currently used as a feedstock of its residue fluid catalytic cracker, with a capacity of 86,000 b/d, at its 560,000 b/d Daesan refinery in the country’s west, the source said.

From October 2019 and May 2020, the refiner will be able to supply about 50,000 mt/month of low sulfur bunker fuel, according to the source. The company currently sells about 150,000 mt/month of bunker fuel, market sources said. After May 2020, Hyundai Oilbank will be able to replace all its current bunker volume with low sulfur material, either LSFO or marine gasoil, the source told the press.

In South Korea, SK Innovation will supply 0.5% low sulfur fuel oil from the first quarter of 2020 after the completion of the vacuum residue desulfurization unit at its 840,000 b/d Ulsan refinery, Platts reported previously.

The 43,000 b/d VRD unit will be ready for pilot tests by the second half of 2019 and is expected to start up in early 2020.

AFRICA

63. Failing Rail Service Contributing to Cape Town's Air Pollution

Motor vehicle emissions are the biggest contributor to air pollution in Cape Town, and the City has opined that the failing rail service is just exacerbating the problem. Long delays in train service and the failure of vital rail infrastructure has encouraged locals to make use of their personal vehicles to travel in and out of the city, causing an increase in vehicular emissions.

"A number of air quality monitoring stations have recorded increased levels of nitrogen oxide (NOx), which supports the contention that vehicle emissions are on the rise. While these NOx levels are below the ambient air quality standards, it remains a cause for concern and highlights the urgent need for an efficient, well-maintained and fully functional passenger rail network," said JP Smith, Mayco Member for Safety and Security; and Social Services.

Smith added that Cape Town's air quality complies with the annual average ambient air quality standards, but there are days where the daily ambient standards have been exceeded. In the past financial year, 13 days were recorded where the daily ambient standards have been exceeded.

"The City has a range of monitoring and evaluation systems and processes to detect and act on air pollution. This includes an air quality monitoring network that is managed by the Scientific Services Air Quality Laboratories. The network consists of 40 analyzers at 14 ambient air quality monitoring stations located across the city. Currently, a process is underway to replace aging analyzers, with City Health providing R3,7 million towards the replacement cost over a three-year period," Smith said.

"The severe drought experienced over the last three years has also contributed to these PM10 episodes, leading to an increase in windblown dust and also exacerbating the incidence of veld fires."

Just over two years ago, the City also installed a high-powered camera monitoring network on Tygerberg Hills. "The Air Quality Management Unit has access to live feeds from this network which allows for remote monitoring of dark smoke emissions," he added.

The City's Air Quality Management Unit has also implemented a 'Diesel Vehicle Emissions Testing Program', which ensures that heavy-duty diesel vehicles comply with the prescribed emission rates. In the last financial year, 8 262 vehicles were tested, with less than one percent failing. This program helps vehicle fleet operators maintain their vehicles in both a sound and compliant operating condition.

"By and large, industries are generally compliant. However, administrative enforcement actions are embarked upon where industries fail to ensure full compliance with license conditions. The

aim of these actions is first and foremost to ensure environmental protection; and secondly, they bring non-complying industries back into compliance. With a maximum fine of five million rand for a first offence prescribed by legislation, and the fact that company Directors can be held personally accountable, we find that this is a big enough deterrent to ensure good levels of compliance,” Smith said.

GENERAL

64. IPCC Says Limiting Global Warming To 1.5 °C Will Require Drastic Action

Limiting global warming to 1.5 °C above pre-industrial levels would be a herculean task, involving rapid, dramatic changes in how governments, industries and societies function, according to the Intergovernmental Panel on Climate Change (IPCC). But even though the world has already warmed by 1 °C, humanity has 10–30 more years than scientists previously thought in which to kick its carbon habit.

The world would have to curb its carbon emissions by at least 49% of 2017 levels by 2030 and then achieve carbon neutrality by 2050 to meet this target, according to a summary of the latest IPCC report, released on 8 October. The report draws on research conducted since nations unveiled the 2015 Paris climate agreement, which seeks to curb greenhouse-gas emissions and limit the global temperature increase to between 1.5 and 2 °C.

The world is on track for around 3 degrees of warming by the end of the century if it doesn't make major reductions in greenhouse-gas emissions. It could breach 1.5 °C sometime between 2030 and 2052 if global warming continues at its current rate.

Scientists have “high confidence” that 1.5 °C of warming would result in a greater number of severe heat waves on land, especially in the tropics, the report says. They have “medium confidence” that there will be more extreme storms in areas such as high-elevation regions, eastern Asia and eastern North America. The risk of such severe weather would be even greater in a 2 °C world. Temperatures on extreme hot days in mid-latitudes could increase by 3 °C with 1.5 °C of global warming, versus 4 °C in a 2 °C world.

Two degrees of warming could destroy ecosystems on around 13% of the world's land area, increasing the risk of extinction for many insects, plants and animals. Holding warming to 1.5 °C would reduce that risk by half.

The Arctic could experience ice-free summers once every decade or two in a 2 °C world, versus once in a century at 1.5 °C. Coral reefs would almost entirely disappear with 2 degrees of warming, with just 10–30% of existing reefs surviving at 1.5 °C.

Without aggressive action, the world could become an almost impossible place for most people to live in, says Ove Hoegh-Guldberg, director of the Global Change Institute at the University of Queensland in St Lucia, Australia. “As we go toward the end of the century, we have to get this right.”

Given that current national commitments on greenhouse-gas emissions fall well short of the goals laid out in the Paris climate agreement, many scientists have argued that meeting even the 2 °C goal is virtually impossible. But the IPCC report sidestepped questions of feasibility and focused instead on determining what governments, businesses and individuals would need to do to meet the 1.5 °C goal.

Measures include ramping up installation of renewable energy systems such as wind and solar power to provide 70–85% of the world’s electricity by 2050 and expanding forests to increase their capacity to pull carbon dioxide from the atmosphere.

Most scenarios in the report suggest that the world would still need to extract massive amounts of carbon from the atmosphere and pump it underground in the latter half of this century. The technology to do this is in the early stages of development and many researchers say it could be difficult to develop it for use on a global scale.

Other proposed options involve changing lifestyles: eating less meat, riding bicycles and flying less. The report also waded into murky questions about ethics and values, stressing that governments must address climate change and sustainable development in parallel, or risk exacerbating poverty and inequality.

The IPCC report incorporates recent research suggesting that the amount of carbon that humanity can emit while limiting warming to 1.5 °C might be larger than previously thought. The previous IPCC assessment, released in 2014, estimated that the world would breach 1.5 °C by the early 2020s at the current rate of emissions. The latest report extends that timeline to 2030 or 2040 on the basis of studies that revised the amount of warming that has already occurred.

“Every extra tons of carbon that we dump into the atmosphere today is a ton that will have to be scrubbed out at the end of the century,” says Myles Allen, a climate scientist at the University of Oxford, UK, and one of the lead authors of the report. “I think we need to start a debate about who is going to pay for it, and whether it’s right for the fossil-fuel industry and its customers to be enjoying the benefits today and expecting the next generation to pay for cleaning it up,” Allen says.

But scientists have only “medium confidence” in the revised carbon budgets, says Thomas Stocker, a climate scientist at the University of Bern in Switzerland. He says that researchers will provide a more comprehensive look at the numbers in the next full climate assessment, which is scheduled to be released in 2021.

In the meantime, the newer and larger carbon budget could send the wrong message to policymakers, says Oliver Geden, a social scientist and visiting fellow at the Max Planck Institute for Meteorology in Hamburg, Germany. He fears that the IPCC report undersells the difficulty of achieving the 1.5 °C goal. “It’s always five minutes to midnight, and that is highly problematic,” he says. “Policymakers get used to it, and they think there’s always a way out.”

65. Global Carbon Emissions To Hit New Record In 2018 - IEA's Birol

Global carbon emissions will rise to a new record level in 2018, making the chances of reaching a target to keep temperature increases to 1.5 or 2 degrees Celsius remote, the head of the International Energy Agency (IEA) said recently. IEA’s Fatih Birol told a conference in Paris that data for the first nine months of the years was already pointing to a record increase in carbon emissions.

A new United Nations report said society would have to make changes to how it consumes energy, travels and builds, to meet a lower global warming target. (See story above.)

“Sorry, I have very bad news. My numbers are giving me some despair,” Birol told the conference at the Polish embassy in Paris.

“Looking at data for the first nine months of this year, emissions this year will increase once again ... global emissions will reach a record historical high,” Birol said. “Therefore, the chances of reaching such ambitious targets in my view, are becoming weaker and weaker every year, every month,” he said.

Poland will host United Nations COP24 talks in December, which will lay out a “rule book” to implement a historic accord reached in Paris in 2015. That agreement set goals to phase out fossil fuel use this century, shift towards cleaner energies and help limit a rise in temperatures.

66. China, Europe Collaborating To Bring About a New Energy Vehicle Future

German automakers including BMW have already done much in the research and development of new energy vehicles. Joining hands with Chinese companies like BYD, Star Charge and Camel Group Ltd, a wave of new energy vehicles in Europe is under way. “Europe should assume a pioneering role in e-mobility to prevent it from being left behind in the production of new technologies by competitors in the United States and China,” BMW chief executive officer Harald Krueger said.

The Munich-based company hopes to lead by example in structural reforms of the German industry. BMW was already a leading producer of electric vehicles in Europe and planned to sell 140,000 battery-powered and hybrid models in the course of 2018, Krueger said during its annual general meeting. BMW will also develop pure electric products into its core brands in 2019. An all-electric MINI will be launched in 2019, and BMW iX3 will be built in China in 2020, and then exported to other countries.

Krueger said the iNext, the next innovation pioneer of BMW, combines “all key technologies of future mobility” as a fully electric and partially self-driving car with high safety standards, and is planned to be on sale in 2021.

Across Europe, Chinese company BYD is the number one supplier of pure electric buses, with a market share of over 20 percent, said Isbrand Ho, managing director of BYD Europe B.V., adding “the core expertise in battery technology is the basis of our success.” In Europe, BYD’s focus is on city buses, a prime source of pollution on city streets, as well as on forklift trucks. Other products like commercial vehicles and passenger cars will follow soon.

“All this is happening before the full benefits of China’s Belt and Road strategy are felt and results from the work of the company’s more than 22,000 R&D engineers are commercialized,” he said.

Through cooperation between European and Chinese companies, the vision to move into a new energy vehicle era would be realized.

Another example is the recent collaboration between German charging networks Hubeject and Star Charge China. Both are looking to drive the global development of open, customer-oriented charging networks for electric vehicles. The charging infrastructure expert Star Charge will bring its network of 20,000 charging points to Hubeject’s cross-provider charging network. The collaboration will accelerate further market development in relation to e-mobility and support the emergence of standardized market models worldwide, the two companies announced.

“We are pleased about the collaboration with Hubei, as we can now offer convenient access to our network to even greater numbers of people, both in China and in Europe,” said Shao Danwei, CEO of Star Charge.

“In Star Charge, we have found the perfect partner in China who will help us to push on with our vision of customer-oriented charging in this very important market,” said Christian Hahn, CEO of Hubei.

In Croatia last year, local company Rimac Automobili sealed a 30-million-euro (US\$34 million) deal with China-based Camel Group Ltd, the single largest foreign direct investment in a Croatian technology company. This investment will help the Croatian firm further accelerate growth, introduce new products to the market and expand its global presence, said Mate Rimac, founder and CEO of Rimac Automobili.

“Our strategy is to move aggressively into the new energy vehicle business — providing advanced battery systems, powertrains and other vehicle components to major commercial and passenger vehicle manufacturers in China,” said Liu Changlai, CEO of Camel Group, the largest battery manufacturer in China.

67. UC Davis Reports On the Challenges Facing ZEV Highway Trucking Technologies

Zero-emission long-haul trucking technologies are being developed that can play a critical role in achieving California’s climate change goals and virtually eliminate air pollution from these vehicles. Hydrogen fuel-cell electric, catenary electric and dynamic inductive charging technologies are being demonstrated in small scale projects worldwide. In this study,³ these three zero-emission truck technologies were reviewed in detail and vehicle and infrastructure challenges and costs for each of the technologies assessed. In the near- to mid-term, electrifying the entire California state highway system or deploying large hydrogen stations at many statewide truck stops would require very large capital investments, on the order of billions of dollars, even though, at least initially, there will likely be relatively few zero-emission long-haul trucks in use. Considering technology readiness, energy efficiency, and capital cost, the most feasible approach for the zero-emission technologies for long-haul trucks may be to deploy local or regional catenary systems. Dynamic inductive charge systems could be introduced, though with perhaps more disruption as roadways are prepared for this service. Hydrogen fuel cell trucks will benefit from some scalability but will require large hydrogen refueling stations along highways. The initial “up-front” investment in infrastructure for hydrogen trucks appears somewhat lower than for the other two options but the cost of providing hydrogen to vehicles will be high, especially if provided using electrolysis. In the longer-term, all three of the technologies could become economically competitive with diesel trucking, though this depends on many factors and uncertainties.

68. Michelin Cuts Market Forecasts On EU Emissions Squeeze, China Slowdown

French tire maker Michelin has cut its full-year market forecasts and said a sales slowdown would worsen in the fourth quarter, blaming weaker Chinese vehicle demand and new emissions standards that have hit European registrations. Michelin's own sales volumes are now expected to show only a "slight increase" for 2018, the company said. It had previously pledged to increase sales in line with more robust market growth expectations, in guidance reiterated on September 13.

2. ³ "A Comparison of Zero-Emission Highway Trucking Technologies" by Hengbing Hao, Qian Wang, Lewis Fulton, Miguel Jaller and Andrew Burke

The fallout from slowing car- and truck-tire demand in China and a European auto registrations slump linked to tougher new emissions tests has proven worse than expected, Chief Finance Officer Marc Henry told reporters. "All of these markets are going to be in decline by comparison with the forecasts we had made," he said.

The company posted a 5.2 percent increase in third-quarter revenue to 5.62 billion euros (\$6.44 billion) as it reported sales four days earlier than planned.

But tire sales to carmakers fell 5 percent in China and Western Europe - where the tougher new Worldwide Harmonized Light Vehicle Test (WLTP) has led to model approval delays and withdrawals.

Michelin, which had earlier pledged to increase 2018 recurring operating profit, said its growth would amount to at least 200 million euros before exchange-rate effects.

But it slashed 2018 market growth forecasts to 0.5 percent for car tires, instead of the previously forecast 1.5 percent; and to a 1.5 percent decline in truck tires rather than a 0.5 percent expansion.

Truck tire demand is expected to shrink by 5-6 percent in the fourth quarter, Henry said.

The company nevertheless reiterated its 2018 target of 1.1 billion euros in positive structural free cash flow goal.

69. Air Pollution Is The New Tobacco, Head Of World Health Organization Warns

Air pollution is the 'new tobacco' and breathing is killing seven million people a year and harming billions more, the World Health Organization has warned. More than 90 per cent of the world's population suffers toxic air pollution which is having a drastic effect on the health of people, especially children.

The danger toxic air has on the world's population has been deemed 'a silent public health emergency' by Dr Tedros Adhanom Ghebreyesus, the WHO's director general: 'The world has turned the corner on tobacco. Now it must do the same for the 'new tobacco' – the toxic air that billions breathe every day.

'No one, rich or poor, can escape air pollution. It is a silent public health emergency.

'Despite this epidemic of needless, preventable deaths and disability, a smog of complacency pervades the planet.'

Children and babies, whose bodies are still developing, are the most at risk from the toxic air.

And there are now 300 million people living in places where toxic fumes are six times above international guidelines.

Dr Maria Neira, WHO director for public health and the environment, told reporters: 'We have to ask what are we doing to our children, and the answer I am afraid is shockingly clear: we are polluting their future, and this is very worrying for all us.'

