

Clean transport: where next for Europe?

What can Europe learn from its vehicle emissions scandal? Can it hope to lead the world again in developing the clean transportation systems essential to avoid climate catastrophe?

By **William Todts**, Executive Director, Transport & Environment

The defining challenge of our time is the fight against climate change. Indeed, if we fail, we will be making large parts of the world uninhabitable and causing enormous stress to the world order as we know it.

One of the major contributors to global warming is transport. Globally it accounts for 14 per cent of greenhouse gas emissions. In developed economies it is responsible for roughly a quarter of emissions. In recent decades transport emissions have increased steadily. To achieve the Paris Agreement's objectives, we will need to reverse this trend and cut emissions to near zero by the middle of the century.

This is a daunting challenge. Europe has traditionally been a frontrunner in the fight against climate change, including in the field of transportation. The EU's CO₂ standards for new cars, adopted in 2009, were the world's most ambitious and promised to cut new car CO₂ and fuel use by 40 per cent in 12 years. These regulations were adopted at a time when people around the world thought of European cars as the best in the world.

Europe's leading position was not just a reputational affair. Indeed, Europe's environmental standards were copied across the globe. The so-called Euro standards that measure vehicle exhaust pollution are still used in much of Asia, Africa and South

America. These standards were followed by similar exercises in the US, Japan and Korea, leading to what some dubbed the global race for cleaner cars.

Two years after the outbreak of the 'Dieselgate' scandal, Europe's reputation for leadership in clean transportation lies in tatters. Volkswagen was the first to get caught and fined for cheating on emissions tests but it soon became clear that VW was just the tip of the iceberg. All of Europe's household brands were engaged in similar types of optimisation, creative testing and use of software to pass emission tests. Millions of cars have been recalled and millions more will likely follow in the coming months. The scandal was primarily related to NOx emissions but also extends to carbon emissions and fuel use.

And just when everyone thought things couldn't get any worse, VW and fellow German carmakers Mercedes and BMW became embroiled in a scandal regarding what may turn out to be the biggest cartel in EU history. The cartel is – you guessed it – related to diesel emissions.

Meanwhile, Europe's carmakers are being outcompeted left, right and centre when it comes to new technologies. California and China are where most car innovation happens today – be it the field of electrification or vehicle automation. The launch of Tesla's Model 3 has sent shivers down the spines of Europe's car



executives. Here is a car that is faster, more comfortable, cheaper and, above all, cleaner than many of its premium brethren.

The days of European leadership on clean transportation seem long gone and Europe's unhealthy love affair with diesel is to blame. However, Europe is still very much the master of its own destiny. In fact, the diesel crisis may well turn out to be a blessing in disguise and could be the 'shock therapy' Europe needs to reclaim its already vanishing leadership on clean transportation.



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The road ahead

One of the things to emerge after the signing of the Paris Agreement is a much greater understanding of the fact that we need to eliminate, rather than just reduce, carbon dioxide emissions. To reduce CO₂ emissions by, say, 20 per cent, improved diesel engines would do the trick. But cuts of 90-100 per cent require an altogether different technological solution. This explains environmentalists' excitement about the renewable energy and electric

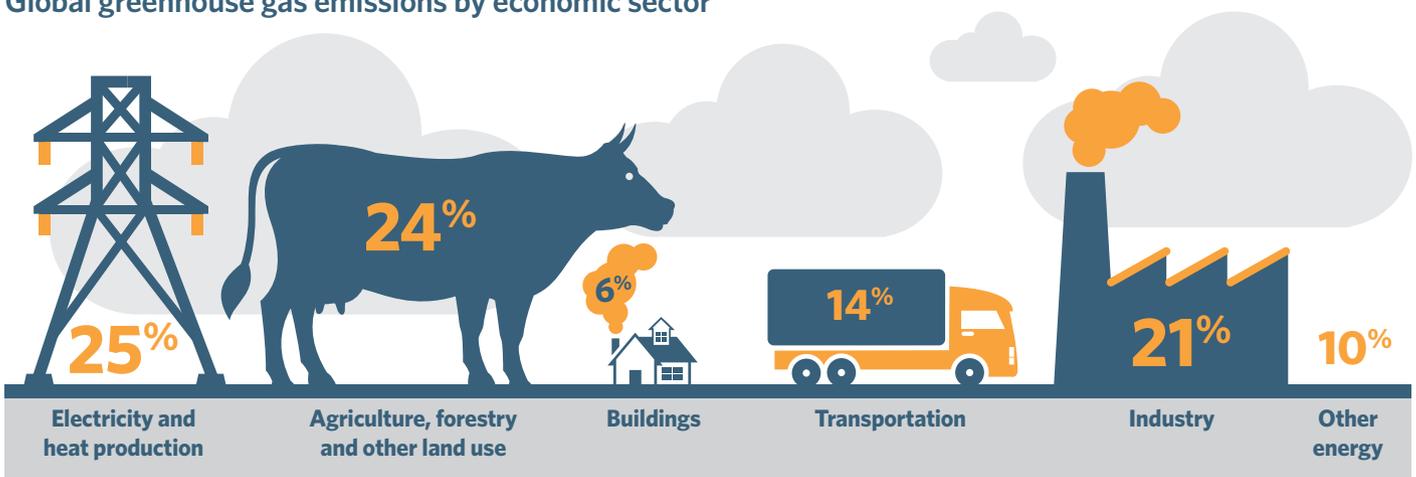
vehicle revolutions. Wind and solar energy are now the cheapest forms of new power generation – and this is why virtually all new power capacity in Europe is renewable. That means we can now imagine a future where electricity is not just clean but also plentiful and cheap.

Indeed, you could argue that today's defining question in transport is: "How do we get clean electricity to power vehicles, vessels and aircraft?" Recent developments in lithium-ion batteries mean battery

▲ Work on Crossrail, Europe's biggest infrastructure project, which entails 26 miles of train tunnels under London and 10 new stations. Improved mass transit systems will need to accompany the clean car revolution if we are to achieve sustainable mobility

vehicles are clearly the top contender to solve that problem. In 2010 a kWh of battery power cost around \$1,175. Now we are headed for \$117. It's this massive cost reduction that enables Tesla to sell a

Global greenhouse gas emissions by economic sector



Source: IPCC (2014); based on global emissions from 2010. Details about the sources included in these estimates can be found in the Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change

65 kWh car with around a 400 km range for \$35,000 – that’s roughly the cost of a comparable BMW, Audi or Mercedes. By the early 2020s electric cars will be cost competitive with diesel and petrol – not just for premium vehicles but for family cars too. That’s the reason why virtually all major carmakers are rushing to join the electric vehicle (EV) race.

It is true that Europe’s industry isn’t leading this race. Tesla is a Californian company and some of the biggest investments in electric cars are made in China. But the EV race has only just started and in many ways the Model 3 is merely the opening stage. From 2018–19 onwards, European carmakers will be presenting their own electric cars, with high ranges and competitive prices. They may well overtake Tesla and the Chinese manufacturers.

Does that mean it will all be smooth sailing from here onwards? Unfortunately not. The advent of electric cars is very much the result of sustained regulatory pressure. Air pollution limits and, above all, CO₂ standards for new cars have turned the screws on petrol and diesel cars. California’s sales target for EVs – in place since the 1990s but ramped up in the late 2000s – has been a particularly effective policy, which is why China is now copying this approach.

Without these types of regulations, there is a high chance that carmakers would take

the foot off the accelerator and postpone investments. Alternatively, they could sell new technologies elsewhere and keep selling diesel in Europe. After all, they have been selling diesel and petrol engines for a hundred years, so they could easily continue doing so for another few decades.

Oil companies and diesel engine parts suppliers will use their clout to postpone the rise of electric cars. For them it is a matter of survival. And this is where the Dieselgate scandal and the EV revolution come together. Societies do not implode in a big

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bang. They fail because they do not adapt to technological and societal change and become inert. The old continent is still a place of considerable dynamism. The question is whether this will be enough to overcome the vested interests that seek to hold it back in the clean vehicles race.

A mobility revolution

The answer to this question will come in November when the European Commission presents new car emission rules. The Commission is considering new targets for 2025 and 2030 and is, for the first time, looking at a specific sales target for zero-emission cars.

With ambitious new standards, Europe would push its mighty car industry in the direction of zero emissions. This would truly be a game changer and it would likely create a snowball effect that would make the clean car revolution unstoppable – not just in Europe but in the whole world.

Of course this wouldn’t mean we could sit back. Trucks, planes and ships will need to undergo the same revolution if we want to win the fight against global warming.

Finally, we need to acknowledge that sustainable mobility is about much more than eliminating emissions. Our current mobility system uses vast amounts of raw materials (to build vehicles), space (parking and streets) and causes all manner of distress for people who are exposed to it (noise and accidents).

This is why the clean car revolution needs to be accompanied by a mobility revolution with more liveable cities built on improved mass transit systems, car sharing and, of course, walking and cycling. ●