

WHAT FUTURE FOR DIESEL CARS?

European Parliament, 17 Feb 2016

Introduction

It is often suggested that diesel cars have a useful role in reducing climate emissions, particularly in the wake of the Volkswagen scandal. This position, strongly promoted by many in the car industry, and accepted by much of the public, underpinned lower taxes and weaker air pollution standards for diesel fuel and diesel cars, contributing to a boom in diesel car sales. Diesel accounted for 53% of new car sales in Western Europe in 2014, compared to 1-5% in Japan and the US.

But **“diesel cars are intensifying, rather than mitigating, global warming”**, according to Dr Eckard Helmers, Professor of chemical and environmental analysis at Trier University of Applied Sciences.

On foot of Prof Helmers’ work, Green Budget Europe recommends ending preferential tax treatment for diesel fuel and diesel vehicles in the EU.

Key points

Professor Helmers’ research notes:

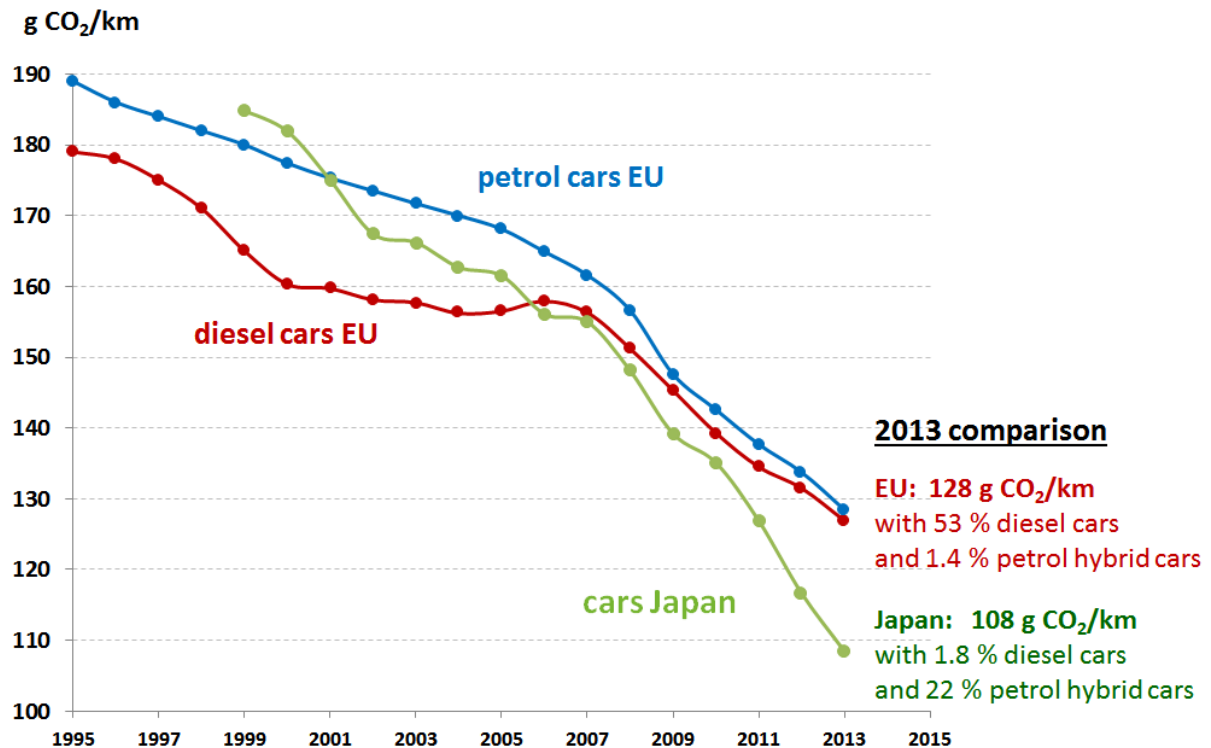
- The science is clear: **from a climate perspective, diesel is worse – not better – than petrol;**
- Weaker air pollution standards were put in place for diesel by the EU in the belief that it would yield lower climate emissions;
- European governments have maintained lower taxes for diesel fuel believing diesel would deliver a climate gain;
- This pro-diesel bias has made the purchase and manufacture of diesel cars more financially attractive at the European scale;
- Uncounted emissions, principally black carbon (soot) and from refining, push diesel’s real climate burden much higher than petrol;
- Far more black carbon is emitted from diesel than petrol engines.ⁱ Currently, however, black carbon is not counted under international agreements to tackle climate change;
- Once counted, and expressed in terms of CO₂ equivalence (the standard international measure), the true emissions of diesel cars are significantly higher than suggested by official figures today (see notes for details);
- There is a growing fuel supply imbalance in Europe with excess petrol and a shortage of diesel. The gap is increasingly being filled by importing diesel from Russia, adding security-of-supply concerns to the higher climate burden of a longer supply chain;
- Pollution control technology is intended to reduce black carbon (soot) and other air pollutants from diesel vehicles. However, pollution control was defective in 75% of diesel cars tested in France, resulting in higher air pollution. As Professor Helmers notes:

“even if diesel cars were produced to the air pollution standards already in place for petrol, such vehicles would only perform to this standard for a modest period of time unless their owners

undertook a comparably high level of intervention, something accompanied by higher time and cost burdens”.

Europe is losing its way on low-CO₂ car-making

Graph: CO₂ emissions of new cars in Europe and Japan, 1995 – 2013



Data sources: Cames & Helmers, 2013, EEA 2014, JAMA 2015. EU data is based on NEDC testing while Japanese data is from its JC08 test. However, real-world CO₂ emissions in the EU are 40% higher than its tests show, a gap that continues to grow.

Without action now, the future for diesel-dominated carmakers in the EU will be increasingly troubled:

- Japan has now overtaken the EU in terms of having far lower CO₂ emissions from new cars. The average new car sold in Japan emits only 108g a kilometre compared to 128g in Europe. This is attributable to petrol hybrids, which account for 22% of new car sales in Japan, while diesel cars make up only 1.8%. Contrast this with the EU where diesel cars dominate with more than half of new sales, and petrol hybrids account for just 1.4%.
- Petrol engines have advanced to the point where direct CO₂ emissions (i.e. not counting black carbon and refining) of petrol and diesel cars are roughly equal;
- Petrol hybrid cars emit significantly less CO₂ than comparable diesel cars (of the order 15 - 25g per kilometre). The Prius 4, a petrol hybrid, for example, emits 73g CO₂ per kilometre, much lower than the diesel-fuelled Skoda Octavia Greenline with 90g CO₂ / km;
- EU emissions law only mandates a design life of 160,000 km for pollution abatement technology, compared with 240,000 km in the US. As most cars in East and South-East Europe have completed more than 160,000 km, the emissions abatement technology falls outside EU regulatory standards, something that will give rise to greater reputational issues over time.

Policy recommendations by Green Budget Europe

To maintain **reduced taxes and weaker standards for diesel fuel and diesel cars would be a strategic mistake.**

The future of car-making is in producing vehicles with ever-lower emissions. This means European jobs and Europe's wider interests are in jeopardy if EU carmakers continue to fall further behind in producing low-CO₂ cars.

Already, Japanese carmakers are delivering new cars with 16% lower CO₂ emissions on average. Put another way, CO₂ emissions from new cars in the EU are 20g higher - 128g per kilometre – compared to 108g in Japan, where petrol hybrids account for 22% of new sales. Further research and development of the hybrid engine in Japan is also likely to give its carmakers a technological lead in producing fully electric cars at mass market levels.

Japan radically cut tax advantages for diesel in the 1990s; Europe now needs to catch up.

The climate lead of Japanese carmakers is widening, and quickly: since 2009 / 2010 Japan has been cutting CO₂ from new cars much faster than the EU. Over the medium and long term, the competitiveness of the European automotive sector will be undermined if a pro-diesel bias is continued, be it in terms of taxation, air pollution standards, or both. According to Rozan Consten of Green Budget Europe:

“almost six months after Volkswagen's deception came to light, there are still few signs that European policy-makers – in both Brussels and in Member State capitals – are alive to the clear strategic need to move from diesel car-making to cleaner technology”.

Key recommendations

With greater knowledge of diesel's effects on climate and health, European governments need to end the subsidy of taxing diesel fuel less than petrol. Germany, having Europe's largest car market, needs to narrow its 18 cent tax gap between diesel and petrol tax, as suggested by its Environment Minister in mid-October 2015.

France has already moved; in 2015 France taxed diesel 17.3 cents less than petrol but is narrowing that gap to 13.7 cents in 2016.

In October 2015 the Belgian government agreed a three-year plan to close its tax gap between diesel and petrol fuel. In 2016 and 2017, the diesel tax in Belgium is increasing by 4 cents a litre, and by 6 cents in 2018. At the same time, petrol tax is being cut by 2.6 cents a year until 2018.

Aside from fuel taxes, many other factors influence car purchasing, including annual taxation, company car provision, registration taxes, incentives (such as grants and scrappage schemes), and awareness of local air quality. While closing the diesel / petrol tax gap is not a panacea, it is a vital step to shift the car market away from diesel and on to cleaner technology.

Taxing diesel less than petrol - top 5 MSs (by total revenue)

Country	Diesel subsidy due to lower taxation in 2014 (million €)	Diesel / petrol tax gap (cents per litre)
France	7,974	13.7*
Germany	6,293	18.4
Italy	2,778	11.1
Spain	1,751	15.2
Belgium	1,452	17.2*

**shows the fuel tax gap after the implementation of 2015/2016 reforms.*

ⁱ When black carbon is expressed in terms of CO₂, the emissions of pre-2005 diesel cars, few of which have particulate filters, are 25 - 50% (40 - 80g) higher per kilometre than suggested by official estimates dating to the time the cars were sold. While almost all post-2005 diesel cars are fitted with devices to cut particulates, testing undertaken in France indicates that these devices are not working correctly on 75% of cars. Conducted on 168 diesel cars four years old or more, the tests were undertaken shortly before the vehicles underwent the French national car test.

For additional references please see Helmers, "Does the European diesel car boom mitigate global warming", a briefing presented at the European Parliament, 17 Feb 2016.