

## Context

In 2009, the EU set legally-binding targets for new cars to emit 130 grammes of CO<sub>2</sub> per km by 2015 and 95g in 2020. The regulation also required the Commission *to carry out a review of "...the modalities for reaching, by the year 2020, a long-term target of 95 g CO<sub>2</sub>/km in a cost-effective manner..."* On 6 June 2012, *Reuters* reported on a draft proposal giving details of how the 2020 target should be reached.<sup>1</sup>

### How does the EU's car CO<sub>2</sub> law work?

The new legislation will define how to reach the 95 g/km limit for new cars sold in Europe in 2020. The rules are an update to the EU's original legislation on binding CO<sub>2</sub> targets agreed in 2008 (Regulation No 443 /2009<sup>2</sup>).

The targets are to be achieved on average across all new cars sold in 2020. Individual cars can be above or below the limit. Vehicle manufacturers have to ensure that the average of their new sales meets these levels. Each manufacturer gets an individual annual target linked to the size (measured by weight) of all its new cars registered in the EU in a given year. If car manufacturers exceed these limits they are obliged to pay fines.

### What are the main benefits of more fuel efficient cars?

Fuel efficient cars bring enormous benefits: lower fuel bills for drivers, encouraging high-tech investment and jobs in Europe, lowering oil imports (and even a lower oil price) and reducing greenhouse gas emissions.

### What is the link between car fuel consumption and CO<sub>2</sub> emissions?



The amount of CO<sub>2</sub> a car emits is directly related to the amount of fuel it consumes. A car that emits 130g CO<sub>2</sub> per kilometer, as tested on the EU's standardised test procedure, would consume around 5.2 litres of fuel to travel 100km. This would be reduced to around 3.7 litres/100km with a 95g CO<sub>2</sub> target or 3.2 litres/100km<sup>3</sup> if the 80g CO<sub>2</sub> target advocated by T&E was achieved.

While overall greenhouse gas emissions have decreased by 15% between 1990 and 2007, those from transport have increased by 36% in the same period. The European Environment Agency estimates that cars are responsible 14% of the EU's total CO<sub>2</sub> emissions; and are the largest single source of total transport emissions. This increase in transport emissions has happened despite improved vehicle efficiency because the amount of personal and freight transport has increased. The improvements in vehicle

<sup>1</sup> <http://topnewsbanker.reuters.com/topnews/genStory.aspx?id=nL5E8H6ANO>

<sup>2</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009R0443:EN:NOT>

<sup>3</sup> Diesel contains more energy per litre than petrol so the volume of fuel is slightly different for petrol and diesel cars with the same CO<sub>2</sub> emissions.

efficiency have not been able to keep pace with the growth in vehicle use – further progress is needed.

### How much could the average driver save if cars were made more efficient?

If the average car emitted 95g CO<sub>2</sub>/km (the EU target for 2020), the average driver in Europe would save EUR 500 a year, based on today's pump prices compared to current vehicles. If T&E's 80g/km was adopted instead of the current Commission proposal an average car would save an additional 0.5 l/100kms and save around EUR 150 a year.

### Won't more fuel efficient cars be much more expensive?

No. Future costs of technology are always over-estimated but the Commissions consultants estimate that the additional manufacturing cost could be just EUR 760. T&E believes that past experience shows that the actual figure is likely to be lower than this.

Around half of new cars are bought by fleets. These companies are not concerned just about the purchase price but the total cost of ownership. Low carbon vehicles have a lower cost of ownership through lower insurance, lower fuel bills and better second-hand (residual) value.

For new car buyers the costs of technology will be more than compensated by the fuel cost and other savings - but the vast majority of car buyers do not buy new cars. Analysis of one of the EU's largest car markets, the UK, shows that 3 out of 4 car purchases each year are on the second-hand market. Second-hand car buyers will get the benefit of substantially cheaper fuel bills.

### Is a 95g CO<sub>2</sub> target enough?

No. Since 2008 when the 95g target was proposed, carmakers have made rapid progress in cutting emissions. The costs of technology have also fallen. The industry had warned that cars would become unaffordable as a result of the targets, but the retail price of cars has actually dropped in real terms. In light of this progress and the fact that fuel efficient cars are needed more than ever in a weakened economy, the EU should go further.

**T&E is calling for an 80g CO<sub>2</sub> target for 2020 and an additional 60g CO<sub>2</sub> target for 2025.**

### Have existing fuel efficiency standards worked?

Yes. Before legally-binding standards were introduced, between 2000 and 2007, emissions of the average new car (as tested on the standard test procedure) dropped by just 1.2% per year, on average. But since legislation was first announced in 2007 (it was formally agreed in 2009), the rate of progress was 4% per year, on average. By the end of 2010, Toyota, Peugeot-Citroen and Fiat had virtually already met their targets for 2015; other carmakers were on track to reach their targets by the deadline.<sup>4</sup>

### Won't achieving the 95g/km target require a huge increase in electric vehicles?

No, but more ambitious targets could provide a significant stimulus to the market. Fuel efficiency legislation is the most effective tool to guarantee a market for high tech, low-CO<sub>2</sub> technologies and to spur investment in research, development and manufacturing.

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<sup>4</sup> See <http://www.transportenvironment.org/publications/how-clean-are-europes-cars-2011-edition>

There is ample technology available to achieve the 95g/km target. This does not even require the use of advanced technologies, such as electric vehicles that are currently still expensive. Most manufacturers will achieve the target through downsizing engines with turbo-chargers, improved aerodynamics, stop-start systems etc. There will be some hybrid vehicles, mainly in the larger vehicle segments, but fewer than were originally expected even a few years ago.

Stricter fuel efficiency standards will still lead to improvements in conventional petrol and diesel cars. But deep cuts are most likely to be achieved by a gradual electrification of drivetrains, including electric cars. This requires billions of investment. Carmakers will only make that investment if they have certainty that the investments will not be in vain, and if all their competitors make them too. T&E doubts that a 95g/km target is sufficiently demanding to achieve a strong supply or demand for ultra-low carbon vehicles. This is one reason T&E advocates a 60g/km 2025 target that will provide a stronger stimulus.

### Don't we need subsidies to support the market for electric vehicles?

CO<sub>2</sub> standards are the best tool to offer investment security for carmakers and, importantly, their suppliers. Subsidies, for buyers of electric cars, or for research (especially when government resources are so constrained) cannot deliver the same level of investment security as strict fuel efficiency standards would. Simply put, the future of the electric car, depends on progressively tighter standards for fuel efficiency, to ensure the necessary technology investments.

### Is Europe at risk of losing its leadership of low carbon vehicle technology?

Yes. Thanks to new standards put in place by the Obama administration, the technology being used in American vehicles by 2025 will be more advanced and achieve bigger improvements in fuel efficiency than in typical European vehicles. There is a real danger that Europe is going to lose its competitive edge in low carbon vehicles if manufacturers here don't get a big enough push to introduce the latest technologies.<sup>5</sup> Jean-Marc Gales, CEO of the European car suppliers' association CLEPA has backed regulation toward lower carbon telling Reuters, "Europe's industry is considered a world leader. We need regulation to keep that advantage."<sup>6</sup>

### If Europe used less oil, would that have an impact on the oil price itself?

Yes. Every year, at current oil prices, Europe imports approximately €300 billion worth of oil, one third of it for cars. Cars are the single biggest consumer of oil in the EU. In times of austerity, importing EUR 300 billion of oil every year is a massive waste of money that could be invested within the continent developing and mass manufacturing advanced fuel efficiency technologies.

Europe is one of the world's biggest oil consumers. If we used half as much, it would cause global oil demand to drop, which would lead to lower oil prices on the world market. Which means even more savings for drivers and businesses. The International Energy Agency says that if the world cut its oil use by only 8%, oil prices would come down by 16%. The lower price effect triples the savings compared to lower consumption alone.

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<sup>5</sup> See the following report by ICCT for a briefing comparing future US and EU fuel economy standards. <http://www.theicct.org/blogs/staff/thought-experiment-applying-proposed-us-2025-pv-standards-eu-fleet>

<sup>6</sup> <http://www.reuters.com/article/2012/06/05/eu-cars-idUSL5E8H59C720120605>

## Does the EU need to cut emissions from transport?

Yes. In 2009 and 2011 the EU's 27 heads of state agreed that the Union should reduce overall emissions by 80-95% by 2050, compared to 1990 levels.

The European Commission's white paper on transport of March 2011 calculated that in order to meet that overall objective, transport would have to cut emissions by at least 60% by 2050 compared with 1990 levels (which is a 70% reduction compared with today's levels). Reducing CO<sub>2</sub> emissions from new cars is one of the simplest and most important ways of cutting transport emissions.



## Did the car industry's predictions come true? No

### Fuel efficiency standards will make cars unaffordable

*"For many consumers, cars could become unaffordable."*

Acea commenting on EU plans to introduce fuel efficiency standards for the first time, Acea website, 2007

False. Cars have got cheaper. In 1998-9 the car industry agreed a voluntary target of 140g/km, to be achieved within 10 years. Studies in 2001 and 2006, based largely on data supplied by the car industry, claimed that the average car would become more expensive as a result, by up to EUR 2400. The target was achieved in 2010, and over the period 2002-2010, according to EU figures, cars got cheaper by 13% in real terms (allowing for inflation).

### Factories will close

*"If this decision is taken, we will be forced to close our factories in which class C, E and S are made."*

Erich Klemm, Daimler board member, FT Deutschland, Jan 28, 2007

Not true. In 2007 when fuel efficiency standards were being debated, the industry repeatedly warned of job losses and factory displacement if the EU went ahead. Daimler, who warned that it would have to shut factories (see above) made €4.5 billion in net profit in 2010.

### Jobs will be lost

*"Opting for (vehicle fuel efficiency standards) only will lead to ... a loss of jobs and relocation of production outside Europe."*

ACEA press release, Jan 26, 2007

Jobs will be created. Fuel efficiency targets create new high-tech jobs by steering investment towards developing these readily-available technologies for the mass market. According to McKinsey and Company, the global market for automotive powertrains will more than double by 2030 to EUR 460 billion, creating 420,000 new jobs worldwide. In July 2011, the German engineering association estimated that there was a shortfall of engineers in Germany of

around 77,000, an all-time high. In 2011, BMW announced it was hiring 800 people to develop efficient hybrid and electric vehicles, while Volvo, similarly was set to recruit 1200 R&D jobs.

World-leading fuel efficiency legislation also allows European carmakers to exploit a competitive edge. Emerging economies can definitely out-compete Europe on costs, but European carmakers have the edge on quality of which fuel efficiency is now a crucial element.

In contrast, sticking to old-fashioned and inefficient petrol and diesel engines, will lead innovation in Europe to stagnate while other economies such as the USA and Japan push ahead. Both America and Japan have recently agreed tight fuel efficiency standards covering the period until 2025.

**[www.transportenvironment.org/cars-and-co2](http://www.transportenvironment.org/cars-and-co2)**