

March 2008



**Friends of  
the Earth**

# Briefing

# Driving change

## Why we need tough targets for low carbon cars

Making new cars more fuel-efficient could make the biggest single contribution to cutting carbon dioxide emissions from transport in the UK. Standards are set by the EU and decisions taken over the next year could decide fuel efficiency targets for Europe for the next decade and more and also have a big impact on developments in Asia, the fastest-growing car market in the world. This briefing explains why tough targets for low carbon cars are essential, and why further action to reduce car use will also be needed.

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## **Transport and climate change**

Climate change is the biggest environmental problem the world faces. If we don't reduce emissions of carbon dioxide and other greenhouse gases, the impacts could be catastrophic.

Emissions of carbon dioxide in the UK are higher now than a decade ago. Rising emissions make meeting the Government's target to reduce emissions to 20% below 1990 levels by 2010 unlikely. Emissions from transport are rising overall, and as a share of total emissions<sup>1</sup>. Respected independent experts believe that, alongside household emissions, transport is one of the two main barriers to the transition to a low carbon economy<sup>2</sup>.

We have to make big cuts in transport emissions. Research for the Government shows this is possible and low carbon cars could make the single biggest contribution<sup>3</sup>. Nearly 80% of the distance the average person travels each year in the UK is by car. If cars were made twice as fuel-efficient, then it is clear that this would have a big impact on emissions.

But technology won't be enough on its own. We will also have to change how we travel and how much we travel to make the cuts needed in carbon emissions. More fuel-efficient cars will be cheaper to drive, so greater investment in alternatives to car use will be needed to avoid a 'rebound effect' where, because it costs less to drive a given distance, people travel further by car. We also need to:

- cut spending on road-building;
- improve public transport and make it safer and easier to cycle and walk;
- use land-use planning to reduce how much people have to travel to do what they want; and
- use travel planning at workplaces and schools to help people use their cars less.

## **Low carbon cars**

A car's carbon dioxide emissions are directly related to its fuel efficiency. The more fuel a car uses, the more carbon dioxide it emits. So a petrol car that does 30 miles per gallon (mpg) will use twice as much fuel and emit twice as much carbon dioxide to travel a given distance as a car that does 60mpg.

A review of low carbon cars for the Government<sup>4</sup> has concluded that, in the long term, road transport can be made almost carbon-free by using electricity or hydrogen<sup>5</sup> as power sources. But we cannot rely on long term solutions alone to tackle transport's contribution to climate change. In the short term, the focus must be on improving the fuel efficiency of existing petrol and diesel cars.

There are many ways to do this, including:

- reduced weight through using lighter components
- improved engines (such as hybrids, which combine petrol or diesel and electric

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engines), better transmissions

- stop-start technology (which turns off the engine when a car is stopped in traffic).

This is not rocket science: the technology to do this is available now. But the industry also needs to change the cars it produces: do we need cars that can travel at 150mph?

### **Biofuels**

One potential solution which currently has a very high profile is biofuels. These are renewable alternatives to conventional petrol and diesel, produced from crops such as oil seed rape or sugar beet. The biofuels industry makes great claims for the emissions reductions that biofuels will deliver, but Friends of the Earth has grave doubts about this, and about the broader environmental problems associated with biofuels. Biofuels can put pressure on the demand for agricultural land which leads to deforestation or a significant increase in the cost of food. They are a false solution to climate change<sup>6</sup>.

## **Problems to date: the failure of the current voluntary agreement**

Emissions standards for new cars are set by the EU rather than the UK Government. Agreements to date to reduce new car emissions have not worked. In 1995, the EU set an objective of reducing average carbon dioxide emissions from new cars sold in Europe to no more than 120 grammes of carbon dioxide per kilometre (g/km) by 2005. In 1998, ACEA, the European car industry's trade association, reached a voluntary agreement with the EU to cut average emissions from new cars by approximately 25% within a decade. Average emissions from new cars sold in 1995 were 185g/km (equivalent to around 37 mpg for petrol cars and 40 mpg for diesels<sup>7</sup>). The target was to reduce average emissions to 140g/km by 2008. Japanese and Korean manufacturers made a similar agreement one year later, to be attained by 2009. This already represented a delay to the original target of reaching 120g/km by 2005..

Progress has been slow, and the car industry is now virtually certain to miss its targets. Average emissions from new cars sold in the EU in 2006 were 160g/km. Progress in the UK has also been slow, with average emissions falling from 189.8g/km in 1997 to 164.9g/km in 2007. This means that, in the UK, ten years into an eleven year agreement, exactly half the required progress has been made.

Why has the voluntary agreement failed? Friends of the Earth believes there are four key reasons:

- It's a voluntary agreement, so there are no penalties for non-compliance.
- The agreement is between the EU and trade associations, rather than individual manufacturers. Progress is assessed industry-wide, allowing some car companies to have a 'free ride' on the improvements made by others. The progress made varies greatly between companies, with only three – Fiat, Citroen and Renault – on course to make the reductions needed if the industry is to meet its target and seven - Volkswagen,

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BMW, Volvo, Audi, Mazda, Suzuki and Nissan – having made less than half the required progress<sup>8</sup>.

- The UK Government has not provided adequate tax incentives to encourage drivers to buy low carbon cars. The fuel duty escalator, which raised fuel tax annually by above the rate of inflation, was abandoned in 2000, only reinstated last year, and the rise due in April was postponed. Rates of Vehicle Excise Duty (VED, or car tax) for gas guzzlers have not been raised enough, although the Chancellor announced further changes in the Budget.
- Manufacturers' advertising is dominated by gas guzzlers, and so fails to create a market for more fuel-efficient cars. A Friends of the Earth survey of car adverts in national newspapers in March 2007 found that only 4% were for vehicles with emissions less than the 140g/km CO<sub>2</sub> level of the current voluntary agreement<sup>9</sup>. This was virtually the same as in a previous survey 18 months before.

## **What is happening now?**

The EU is currently deciding what will follow the voluntary agreement. The European Commission made a formal legislative proposal in December 2007. This will be discussed and voted on by the European Parliament and the Council of Ministers, with final agreement probably being reached in late 2008 or early 2009. This immediately becomes binding in all member states and will affect all cars sold in the EU, not just those made in the EU.

The next few months will be crucial as Parliament and the Council of Ministers discuss the issue and move towards an agreement.

## **The European Commission's proposal**

The key elements of the Commission's proposal<sup>10</sup> are as follows:

- A target of 120g/km CO<sub>2</sub> to be met by 2012. However car fuel efficiency measures only need to reduce emissions to 130g/km, with the remaining 10g/km CO<sub>2</sub> to come from additional measures such as biofuels, using tyres with lower rolling resistance<sup>11</sup> and better driving practices. This is a further weakening of the original 120g/km by 2005 target. The Commission has not proposed any longer-term target but there will be support for research to reduce emissions to 95g/km by 2020.
- Rather than every vehicle sold having to meet the target, manufacturers must make sure that the average emissions of all new cars they sell in the EU meet the target. Thus they can 'balance' sales of cars with emissions above the target with sales of vehicles with emissions below the target. But the Commission has proposed that heavier vehicles should have a less stringent target and has drawn up a graph mapping vehicle weight against permitted emissions. The overall impact across all manufacturers must be that the average of new cars sold is 130g/km. Manufacturers can also join together to create a 'pool' for the purposes of assessing progress against the target.
- Manufacturers which do not meet the target will have to pay a penalty. This will be levied

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for each g/km by which the average car sold by the manufacturer in a year is above the target, multiplied by the number of vehicles sold by the manufacturer that year. The penalty will rise from €20 Euros per g/km per vehicle in 2012 to €95 in 2015.

- Manufacturers who produce less than 10,000 vehicles per year who cannot or do not want to join a 'pool' as above, can apply to the European Commission for an individual target.

### **Friends of the Earth's position**

Friends of the Earth, together with a broad coalition of NGOs across Europe, has real concerns about the European Commission's proposal. We believe that tougher targets are needed to make sure that car companies play a full part in tackling climate change. The proposal must be strengthened by the European Parliament and the Council of Ministers over the next few months. We are calling for:

- A target of 120g/km CO<sub>2</sub> to be met by 2012 to be met by car fuel efficiency measures alone. This would be in line with the target first agreed in 1995. Better tyres and improved driving could contribute to cutting carbon dioxide emissions but this must be in addition to, not as part of, meeting the 120g/km CO<sub>2</sub> target.
- A longer-term target of 80g/km by 2020 – roughly doubling current fuel efficiency levels. Car manufacturers say they need long-term certainty, and this target would provide it. The timescale would allow manufacturers not just to re-engineer cars (improving the efficiency of current designs) but to redesign them (with, for example, for lower top speeds and acceleration, both of which would help cut CO<sub>2</sub> emissions).
- Stronger penalties for manufacturers that do not meet their targets. The penalties should be considerably higher than the cost of complying with the targets, up to €150 per g/km, and should start from 2012. Any delay or phasing-in of the penalty regime would be effectively postponing the policy.
- The target should affect all cars sold and should not distinguish between different types of cars. But if different cars are to have different targets, this should be based on a vehicle's size rather than its weight. Weight-based targets would remove a major incentive to cut carbon emissions by making vehicles lighter, as this would incur a tougher target. Research shows that cutting vehicle weight also makes cars less dangerous<sup>12</sup>. The parameter used should be a car's 'footprint' (the distance between the wheels front-to-back multiplied by the distance between the wheels side-to-side).
- Exemptions should be for genuine niche manufacturers only. We understand the wish to protect genuine niche manufacturers who only produce a few hundred cars a year or less. But we disagree with exemptions for more 'mainstream' manufacturers whose annual production is in the thousands. Some countries want to widen the scope of the exemptions further which could affect the impact of the regulation.

Researchers have calculated that the NGO targets would lead to more than double the emissions savings than the proposals contained in the Commission's communication: a cumulative total reduction for the period 2008 – 2020 of 521 million tonnes of CO<sub>2</sub> for the NGO proposal, compared to 239 million tonnes for the Commission's proposal<sup>13</sup>. This would

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make a significant contribution to meeting the EU's medium-term carbon reduction targets.

### **Car industry lobbying**

The car industry is lobbying hard against tough action to cut emissions. Porsche has been reported to be considering legal action if the EU agrees a target of 120g/km CO<sub>2</sub> by 2012<sup>14</sup>. This is in addition to its legal challenge to the Mayor of London's proposed increase in the congestion charge for gas guzzlers. The industry claims that:

- It does not have time to comply with targets set for 2012. But it has known about these targets for over a decade. And the industry that supplies components to the car manufacturers doesn't think there is a problem. Thierry Morin, chairman of Valeo, one of the world's leading automotive suppliers, has called for the 120g/km target to apply immediately rather than in 2012 as the company has systems that can reduce current emissions by 30-40%<sup>15</sup>.
- The costs of meeting the targets will be high. But it has a track record of over-estimating the costs of meeting new environmental standards<sup>16</sup>. Recent analysis from Moody's Investors Service, a leading credit-rating agency, says that manufacturers' estimates of compliance costs for the EU's proposals could be as much as twelve times too high<sup>17</sup>
- Cars have to be heavier and so less fuel-efficient to meet safety requirements. But the chairman of the European New Car Assessment Programme (EuroNCAP) has dismissed this claim<sup>18</sup>.
- The regulations will force production out of Europe. But the new standards will apply to all cars sold in the EU, not just all cars built in the EU. And if manufacturers could cut costs by producing their vehicles in Asia rather than Europe, then they would do this anyway, whether or not new regulations were introduced.

Politicians should not bow to this misleading and self-interested lobbying from the car industry.

### **What else needs to happen?**

If low carbon cars are to make a full contribution to cutting carbon dioxide emissions then the Government must give strong tax signals to encourage drivers to buy and use them. The changes to VED and the introduction of a purchase tax on new cars announced in the Budget in March are welcome steps in the right direction, but do not go far enough to deliver the big changes needed in car buying. The announcement of further increases in fuel duty in coming years is also welcome, provided the Government holds firm and does introduce them rather than announcing a delay in the face of lobbying from hauliers and drivers.

### **What you can do**

- Urge your MEPs to support low carbon cars.  
The European Parliament will play a key role in deciding how much low carbon cars will contribute to tackling climate change. Write to your MEPs asking them to support tough targets for low carbon cars. Details of your MEPs can be found via Friends of the Earth

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website at <http://www.transportactioneurope.org>.

- Buy a green car yourself  
If you are buying a car, make sure it is as fuel-efficient as possible. There is great variety in fuel efficiency, even between cars of similar sizes. The Department for Transport's 'Act on CO2' website gives details of the most fuel-efficient vehicles in each model type<sup>19</sup>. Most car dealers now display a label showing emissions levels and fuel consumption figures on the cars they sell.
- Try to use alternatives to the car wherever possible  
A quarter of all car journeys are less than 2 miles long and so can be easily walked or cycled, and good public transport alternatives are available for many longer journeys.

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### Notes and references

<sup>1</sup> Total UK emissions of carbon dioxide have risen by 1.5% since 1997. Transport emissions have risen by 9.8%. Transport's share of total emissions has risen from 28% to 30.5%

<sup>2</sup> Cambridge Econometrics press release 23/08/07 "Our projections have consistently identified the main barriers to a low-carbon economy to be higher emissions from the transport and household sectors, which are expected to rise to just under a half of the UK's CO2 emissions by 2010."

<sup>3</sup> Bartlett School of Planning (University College London) and Halcrow Group for the Department for Transport (2006) 'Looking over the horizon'

[http://www.ucl.ac.uk/~ucft696/documents/Executive\\_summary\\_Jan\\_2006\\_HR.pdf](http://www.ucl.ac.uk/~ucft696/documents/Executive_summary_Jan_2006_HR.pdf)

<sup>4</sup> King Review of Low Carbon Cars [http://www.hm-treasury.gov.uk/media/A/7/bud08\\_king\\_1080.pdf](http://www.hm-treasury.gov.uk/media/A/7/bud08_king_1080.pdf)

<sup>5</sup> There are still many issues to address on the use of hydrogen as a transport fuel: how will it be generated, transported and stored at filling stations? The general consensus is that it will be around 20 years before hydrogen is available as a mass market fuel.

<sup>6</sup> For further information on Friends of the Earth's concerns about biofuels, see

[http://www.foe.co.uk/resource/briefings/agrofuels\\_fuelling\\_or\\_fool.pdf](http://www.foe.co.uk/resource/briefings/agrofuels_fuelling_or_fool.pdf)

<sup>7</sup> Diesel cars emit more CO2 than petrol cars per litre of fuel burned, but use fewer litres of fuel to travel a given distance. The overall impact is that diesels typically emit less CO2 per kilometre than petrol cars.

<sup>8</sup> Transport & Environment (2006) 'How Clean is Your Car Brand?'

[http://www.transportenvironment.org/docs/Publications/2006/2006-10\\_how\\_clean\\_is\\_your\\_car\\_brand.pdf](http://www.transportenvironment.org/docs/Publications/2006/2006-10_how_clean_is_your_car_brand.pdf)

<sup>9</sup> See [http://www.foe.co.uk/resource/press\\_releases/green\\_cars\\_motor\\_industry\\_29032007.html](http://www.foe.co.uk/resource/press_releases/green_cars_motor_industry_29032007.html)

<sup>10</sup> See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0856:FIN:EN:PDF>

<sup>11</sup> Manufacturers already fit these better tyres to cars tested to establish CO2 emissions levels, but not to production cars.

<sup>12</sup> Dynamic Research, Inc., *A review of the results in the 1997 Kahane, 2002 DRI, 2003 DRI, and 2003 Kahane reports of the effects of passenger and light truck weight and size on fatality risk* March 2004.

[http://www.theicct.org/documents/DynamicResearch\\_WeightFatalityES\\_2004.pdf](http://www.theicct.org/documents/DynamicResearch_WeightFatalityES_2004.pdf)

<sup>13</sup> Ibid. Note that these savings are for EU-15 countries only (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden and UK)

<sup>14</sup> See <http://www.forbes.com/markets/feeds/afx/2007/09/14/afx4117266.html>

<sup>15</sup> See <http://www.forbes.com/markets/feeds/afx/2008/01/07/afx4499702.html>

<sup>16</sup> Evidence from the US shows that the actual cost of meeting new environmental standards is typically between one-tenth and one-third of the initial estimate made by the car industry. See Natural Resources Defense Council (NRDC) (2004) ; 'Comments on the Proposed Adoption of Regulations by the California Air Resources Board (CARB) to Control Greenhouse Gas Emissions from Motor Vehicles'

<http://www.nrdc.org/globalWarming/crh0904.pdf>

<sup>17</sup> See <http://www.autonews.com/apps/pbcs.dll/article?AID=/20080119/ANE03/24458461> Moody's estimates the cost of compliance at €300 – €1000 Euros per car; the European Commission estimates an average cost of €1300 per car and ACEA, the trade body of European car manufacturers, says the costs will be around €3650 per vehicle. Moody's lower estimates are, it says, due to economies of scale and cost-sharing with suppliers.

<sup>18</sup> Professor Claes Tingvall, chairman of EuroNCAP has said that "Blaming safety is unfair, incorrect and just hides the fact that there are other issues responsible for industry's failure to meet its contract with society. The performance of smaller and lighter cars at Euro NCAP clearly shows that improved safety does not need additional weight". See <http://www.transportenvironment.org/Article277.html>

<sup>19</sup> See [http://www.dft.gov.uk/ActOnCO2/index.php?q=best\\_on\\_co2\\_rankings](http://www.dft.gov.uk/ActOnCO2/index.php?q=best_on_co2_rankings)