

In March 2007 Julia King was appointed by Gordon Brown, then Chancellor of the Exchequer, to lead an independent review of low carbon vehicle and fuel technologies that, over the next 25 years, could help to reduce carbon emissions from road transport.

In March this year, alongside the Budget, part two of The King Review of Low Carbon Cars: Recommendations for action was published by HM Treasury. Here, she summarises her findings. In the century since the first massproduced car, the Model T Ford, arrived in 1908, the mobility offered by the car has transformed lives for many millions of people. Personal mobility drives economic growth as well as enhancing quality of life. The convenience of car travel is part of our way of life in developed countries and an aspiration for many in the developing world.

A developing problem However, the cars we drive are now a major contributor to climate change.

Transport is the third largest element of global CO<sub>2</sub> emissions, at 14% of the total, but makes up a much larger element of emissions in developed countries: 28% in the UK. Globally, and in Europe, cars and vans account for almost half of transport emissions.

And transport emissions are growing rapidly – and are likely to continue to do so without strong and urgent action. In Europe, for example, transport emissions grew by 25% between 1990 and 2005, whereas emissions from other major emitters – industry, agriculture and energy – all fell.

While transport emissions in developed countries are still increasing, the aspirations of the developing world have the potential to accelerate this growth. Whereas over half of adults in the US and Europe own a car, that figure is less than one person in every 100 in China and India. By 2050, predicted car ownership in China and India alone is over 1 billion vehicles, compared to around 150 million in the US today.

Current scientific evidence suggests that developed countries will need to reduce emissions by at least 80% by 2050 to achieve stabilisation of atmospheric CO<sub>2</sub> concentration between 450 and 550ppm and have a realistic chance of avoiding the most damaging effects of climate change.

### Cut the carbon

The scale of transport emissions, the current rate of growth and the likely global explosion of car ownership, combined with the importance of individual mobility as a driver of economic growth, mean we must aim to achieve almost total decarbonisation of road transport by 2050.

In April last year the Chancellor of the Exchequer (at that time, Gordon Brown) asked me to undertake a review of the options for decarbonising road transport, especially cars. While this is a major challenge, the message from my report is a positive one: almost total decarbonisation is likely to be achievable by 2050 through a combination of more efficient vehicles, cleaner fuels and smarter driving choices. In the short to medium term we can also make major improvements if we are prepared to take action now.

In the next 10 years, increased vehicle efficiency offers the largest opportunity for reducing CO<sub>2</sub> – both through us, as consumers, choosing more efficient vehicles and through improved technology. Within 10 years we could be driving equivalent cars to those we choose today, but emitting 30% less CO<sub>2</sub>. The technology is available.

Moreover, the cost of the technology, likely to be reflected in increased car prices, is offset several times over by the fuel cost savings over the life of the vehicle.

Given this opportunity, the European Commission's proposed mandatory CO<sub>2</sub> target on new car CO<sub>2</sub> efficiency is a welcome and urgently needed development. As consumers tend to undervalue fuel cost savings, the market will not deliver the necessary improvements in vehicle efficiency without regulation.

### Achievable

The proposed target of 130g CO<sub>2</sub>/km by 2012 is achievable – the technology is available and cars significantly more efficient than this are already being sold.

We need action on car efficiency now, and the timing of the target must not be allowed to slip past 2012. We have already missed the voluntary target of 140g/km by 2008; new car emissions in the UK averaged 167g/km last year.

Emissions regulation presents an opportunity, rather than a threat, for the European car industry. The developing Asian countries are a rapidly growing market for cars on a scale we have never seen before. From a climate change as well as a fuel availability perspective it is essential that these cars are efficient, low emissions vehicles. For manufacturers wanting to play a role in this huge market, a strong position in low CO<sub>2</sub> technologies will be a major advantage. Longer-term targets are also needed.

A 2020 target of 100g/km appears to be achievable, especially if the target is agreed as soon as possible, so that industry can begin planning now. And by 2030 CO<sub>2</sub> emissions per kilometre could be reduced by 50% as hybrids and plug-in hybrids achieve major market penetration.

Biofuels could also play a significant role in reducing CO<sub>2</sub> emissions by 2030. However, in the short term, the high land requirements of current biofuels pose major risks in terms of land-use change and global food prices. Any EU policy affecting biofuels must make clear that only the most land-efficient biofuels should be developed.

More broadly, policies on fuels should be based on the goal of CO<sub>2</sub> reduction rather than any specific means of achieving that goal – encouraging other fuels such as CNG and electricity to contribute to CO<sub>2</sub> reduction, stimulating research into future generations of sustainable biofuels and ensuring all fuels are produced in a CO<sub>2</sub>-efficient way. It would be counter-productive to allow an increase in emissions through the development of unconventional oils such as oil sands while focusing support on biofuels.

### New fuels

The long-term solutions to decarbonising cars will need low carbon electricity and new automotive and fuel technologies. The electricity infrastructure must be addressed now – the timescales for funding, planning and building major plant are long and the power stations being

planned and built today will still be with us in 2050.

We urgently need an increase in research funding in the area of lowcarbon energy and associated transport technologies. The UK, Germany and France currently spend about 1-1.5% of publicly-funded, civil research and development on low-carbon energy (excluding nuclear); the largest percentage is spent by Japan at 3%. Lord Stern says of the situation:

“The world faces an unprecedented challenge which requires urgent global action to sustain growth and guard against the risks of catastrophic climate change.” Isn’t that a very strong case for focusing more public R and D into this key area?

Climate change is a global problem and effective solutions and policies must also, ultimately, be global. But we all have an individual role to play which makes a difference – as citizens in electing governments and supporting legislation and as consumers in the cars we choose and when and how we use them. With strong, early action by governments, industry and individuals, car ownership and use can continue to drive economic growth and enhance quality of life around the world without destroying the planet.

Parts 1 and 2 of the King Review can be found at HM Treasury website, at [www.hm-treasury.gov.uk/king](http://www.hm-treasury.gov.uk/king).