



TRANSPORT - REDUCING EMISSIONS WITH BIOFUELS

This is the latest in a series of Bulletins on aspects of BERR's Consultation on the UK's Renewable Energy Strategy.

Previous Bulletins have covered, and future issues will cover:

- III Bioenergy
- III Centralised Energy
- III Decentralised energy
- III Energy Efficiency
- III Renewable Heat

Domestic transport (excluding international aviation and shipping) accounts for around a quarter of the UK's energy use and CO₂ emissions.

Road transport is responsible for about 93% of domestic transport CO₂ emissions - and passenger cars account for almost two thirds of this. The conclusion is clear. Targeting the transport sector is key in any framework for a sustainable policy on renewable energy.

Policy Background

There are a variety of policy measures which

seek to "decarbonise" transport. The EU has already targeted vehicle manufacturers by proposing a binding average CO₂ emissions limit of 130g/km by 2012. The proposals are contained in a draft Regulation published on 19 December 2007, and significantly, failure to achieve the target will attract penalty payments on the manufacturer. The penalty rate will increase rapidly from 20 euros per excess g of CO₂ in 2012 to 95 euros in 2015 and beyond. This is a powerful incentive.

Further, UK vehicle purchasers are also being encouraged to choose cars with lower emissions by significant differentials in road tax.

Under EU law, the public sector, a major procurer of vehicles, will also be required to take CO₂ emissions into account in its future procurement of vehicles.

In addition to the proposed mandatory CO₂ emissions limit of 130g/km, the EU aims to drive the overall target down to 120g/km by the increasing use of biofuels in particular.

Against this backdrop, the draft Renewable Energy Directive includes a binding target for all Member States to source 10% of their transport (excluding aviation and shipping) energy usage from renewables by 2020. This is expected to be achieved mainly by

blending biofuels with diesel and petrol. Further, the EU is currently discussing changes to the Fuel Quality Directive to allow for more than the current 5% of biodiesel and bioethanol in a mix, possibly rising to 10% by volume for the period up to 2020.

To date, the UK Government's chief response to these EU initiatives has been the Renewable Transport Fuel Obligation (RTFO). This places a legal obligation on transport fuel suppliers to ensure that specified proportions of road fuel supplies to UK customers come from biofuels, with the requirement to pay a "buy-out price" (an amount per litre by which the fuel supplier falls short of its obligation) if the target is not achieved. The RTFO obligation levels are 2.6% by volume by 2008/09, 3.9% by 2009/10 and 5.3% by 2010/11. The use of biofuels is further incentivised through the buy-out price being higher than the additional cost of supplying biofuel and via a duty differential for biodiesel and bioethanol of 20p per litre below the duty for regular fuel. The combination of duty incentive and buy out price is guaranteed at 35p per litre until 2010/11 when the duty differential will cease and the buy out price will become 30p per litre. To date, however, the use of biofuels in the UK has been low - about 1% of the road fuel market in 2007/08. To meet the current RTFO targets, let alone the EU target of 10% by 2020, there needs to be



very significant increases in the use of biofuels.

Sustainability

Within weeks of the publication of the Consultation, the Renewable Fuels Agency (RFA) published The Gallagher Review of the indirect effects of biofuels production which can be viewed by clicking [here](#). The RFA administers the Renewable Transport Fuel Obligation Order, which includes a range of sustainability measures to achieve the RTFO. The Gallagher Review has highlighted the indirect effects of the increased production and use of biofuels.

It is only five years since the Biofuels Directive was agreed. In that time, biofuels have been seen, initially, as a "silver bullet", but more recently with a huge amount of suspicion. There have been growing concerns, in particular about deforestation, which itself can lead to environmental problems, and more recently, the sharp rises in food prices.

The Gallagher Review urges a slow down in

biofuels production, a more measured approach so that the overall effects, direct and indirect, can be fully understood and taken into account in future policy decisions to ensure a sustainable biofuels industry. In particular it urges that biodiversity is not adversely affected, that agricultural land is not diverted from food production and that increasing biofuel production does not lead to a net increase in greenhouse gas emissions.

Specifically, the Review recommends that:

- the RTFO should rise to a maximum 5% by volume by 2013/14 compared to the current target of 5% by 2010
- the RTFO be reviewed in 2011/12
- comprehensive, mandatory sustainability criteria within the EU Renewable Energy Directive should be implemented in the period to 2011/12
- targets higher than 5% should only be implemented beyond 2013/14 if biofuels are shown to be demonstrably sustainable at both UK and EU level and, if this cannot be shown, then the target could be reduced

- use of advanced technologies for second generation biofuels (see below) should be encouraged, commence in 2015/16, rising to 1-2% of energy by 2020
- the EU target for renewable transport fuels should be between 5% and 8% (by energy) by 2020, including 1-2% from advanced technologies.

The EU is sensitive to the sustainability issues that have been raised. Reaching a consensus has proved challenging. In a key vote on 11th September, the European Parliament confirmed a binding 10% target by 2020 but requires that 40% must be met from "non-food and feed competing" second generation biofuels (see below) or from cars running on green electricity and hydrogen. Interim targets of 5% by 2015, 20% of which must be met from such sources were also agreed. In addition the vote calls for a "major" review by 2015, which has worried the industry as this provides less certainty for investors.

The UK Government has set its stall on ensuring the use of biofuels is sustainable. For example, it announced that from April 2010 the RTFO should recognise biofuels in accordance with the greenhouse gas savings they offer rather than by volume. By 2011 biofuels should be rewarded only if the feedstocks from which they are produced meet "appropriate sustainability standards".

Second Generation Biofuels

Part of the solution to sustainability could arise from introducing more "second generation" biofuels. Current commercial biofuels are made from plants such as wheat grain, beet, cane sugar or vegetable oil. Second generation biofuels would come from waste or residues such as straw,

which has the potential to be more sustainable.

There needs to be major capital investment so that the technologies can be made available on a commercial scale. To ensure the development of the technologies to produce second generation biofuels is adequately incentivised, the draft Renewable Energy Directive requires that for the purposes of demonstrating compliance with national renewable energy obligations placed on operators, the contribution made by specified second generation biofuels must be counted as twice that made by other biofuels.

Alternatives to biofuels?

Low carbon alternatives to biofuels include fully electric and electric/petrol "hybrid" cars, as well as hydrogen-fuelled vehicles powered by an internal combustion engine or a fuel cell. All electric CO₂ emissions have been estimated at around 77g CO₂/km compared to a 2007 new car CO₂ average of 167g CO₂/km. This represents a significant CO₂ saving and much of the extra electricity demand could be sourced from other renewable energies.

The King Review, published earlier this year, made a number of recommendations aimed at exploiting existing low-carbon technologies. These recommendations include:

- III lobbying for an EU emissions target of 100g/km by 2020 and setting a mechanism for reviewing the targets every seven - ten years
- III developing a Low-Carbon Transport Fuel Obligation to work alongside the RTFO
- III assessing whether road transport

should be included in carbon trading schemes such as the EU Emissions Trading Scheme

- III developing flexibility (eg trading) between fuel and vehicle targets
- III promoting research and development as well as consumer "green" choices

As yet, the UK Government has not made any proposals on the recommendations of the King Report. However part of the BERR Consultation seeks views on introducing vehicles powered through the electricity grid.

Timescale is key. The Government wants to know how quickly electric cars could contribute to the renewable energy and carbon reduction targets and what it can do to speed up their introduction.

Indeed, much of the focus of the Consultation is about the use of alternatives to biofuels. This may herald a change of UK policy approach compared to the EU, where the focus has been firmly on biofuels for some time. However, there can be no doubt that both increasing the sustainable use of biofuels and encouraging consumers to demand and manufacturers to provide other alternatives are vital to the renewable energy strategy.

Non road transport

At the current time and for the foreseeable future, aviation, which will account for approximately 11% of final energy demand by 2020, is outside the 10% renewable transport fuel target. There are not expected to be any safe, commercially viable options for renewable energy in aviation by 2020. Some work is being undertaken in this area, but it is not expected to yield results by 2020.

However, amid much controversy, all flights to, from and within the EU will be included in the EU Emissions Trading Scheme from 2012.

Rail makes a very small contribution to CO₂ emissions and so is not high on the agenda and is not included in the 10% target. However research and trials are ongoing into the use of biofuels and microgeneration; and trains already send electricity back to the grid, so some progress is being made. The major CO₂ reductions in rail will come from the blending of biodiesel with diesel and the further electrification of the rail network.

UK shipping also accounts for a very small proportion of energy demand and therefore of CO₂ emissions. However worldwide shipping accounts for around 2-4% of CO₂ emissions, and is set to grow as it is the most low carbon method for moving bulk freight. The UK Government has signalled that shipping might be included in emissions trading in the future.

Also of relevance:

- III Review of the Renewables Obligation - announced in the 2007 Energy White Paper and currently being consulted on
- III Treatment of biodiesel and glycerol under the Renewables Obligation - currently being consulted on.

This Bulletin aims to update you on legal issues of concern or interest. It is not a substitute for taking specialist advice in individual cases. For more information about these or any other issues please contact: Catherine Burke on T: 0870 763 1552 or E: catherine.burke@martineau-uk.com Or Ben Thornber on T: 0870 763 1662 E: ben.thornber@martineau-uk.com