



# Restats: UK Production of Biofuels for transport in 2008

**Report to DECC**

Restricted Commercial

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The UK Government is supporting the production and utilisation of Transport biofuels in the UK in order to:

- Pursue its policy objectives of Greenhouse gas (GHG) emissions reduction, security of energy supply and rural development
- Contribute towards UK targets for renewable transport fuels as set out in the Renewable Energy Directive.

There are two main transport biofuels that can be produced commercially using current technology, the so called 'first generation' biofuels, bioethanol and biodiesel. These are the main biofuels likely to be supplied into the UK market over the next 5 years and have been the subject of this survey for the past 2 years. There are also a number of other biofuels that could potentially be used for transport, and these have been included in the survey for the first time this year.

The Government recognises that biofuels are not commercially competitive with fossil fuels and has initiated support mechanisms to promote production and utilisation of biofuels. The main mechanisms are the Renewable Transport Fuels Obligation (RTFO) implemented in April 2008 and the current fuel duty reductions for biodiesel and bioethanol. This year the survey was jointly sponsored by DECC and the Renewable Fuels Agency (RFA), who administer the RTFO. Additional questions were added to the survey to obtain feedback on the implementation of the RTFO, and for the first time companies supplying biofuels into the UK market have been included in the survey as well as companies producing biofuels in the UK.

Biofuels consumption in the UK can be obtained from figures published by HMRC (HMRC 2009). These figures show that biofuels consumption in the UK has more than doubled between 2007 and 2008 (from 500 million litres in 2007 to 1092 million litres in 2008). It is expected that biofuels consumption in the UK will rise in line with the requirements of the RTFO in the next 5 years.

However, this survey aims to determine UK production of biofuels. The HMRC figures cannot be used for this purpose as they include both UK produced fuels and imports, and do not include UK produced fuels which are exported. In order to estimate UK production of biofuels we explored the possibility of using data collected by the RFA for the RTFO. The RFA do not collect information on UK production of biofuels, and do not have complete data for calendar year 2008, as the RTFO started in April 2008. It was therefore necessary to survey the UK production companies directly.

### **UK Biodiesel production**

A best estimate for UK production of biodiesel in the UK in 2008 in calendar year is 320 million litres, down from 485 million litres in 2007. 6 million litres of biodiesel produced in the UK were used in the electricity and heat markets, 314 million litres in the UK road market. The figures include an estimate of production from survey non-respondents, and from small-scale commercial producers and people producing for personal use who were not surveyed. Small-scale production is estimated to be low, but the contribution from non-respondents is estimated to be 125 million litres, which is 39% of the total estimated production and therefore a significant source of uncertainty in the results.

The number of companies who had stopped production and cancelled or delayed investment in new plant was significant, and has had a large impact on the estimated biodiesel production capacity in 2010 and beyond. Last year we estimated that the total annual capacity for biodiesel production in the UK could be around 1,600 million litres per year in 2010. We have revised that estimate down to 540 million litres per year in 2010. The reasons for the reduced capacity were given as adverse market conditions for investment in general and in particular the uncertainty surrounding the RTFO and possible sustainability requirements.

### **UK Bioethanol production**

Only one company was producing bioethanol in 2008, and they had a capacity of 70 million litres. We assumed that 70 million litres was produced in 2008 and all supplied into the UK road market.

A number of proposed bioethanol plant have been cancelled or delayed this year due to adverse market conditions. This has led to a significant reduction in estimated bioethanol production capacity for 2010. Last year we estimated capacity of 600 million litres in 2010. This has been revised to 505 million litres in 2010, rising to a possible 1661 million litres after 2012

### UK production of other biofuels

Producers of biogas, pure vegetable oil (PVO) and biomethane were surveyed for the first time this year. The number of companies and production volumes are currently low.

### Summary of UK biofuels production

Biofuel	UK production supplied to UK road market 2008, million litres	Total biofuel supplied to UK road market in 2008, million litres. (HMRC figures)	% of biofuel from UK sources	% of biofuel from UK sources in UK fossil equivalent supply
Biodiesel	314	886	35	1.2
Bioethanol	70	206	34	0.3

Quantities of biofuels supplied into the UK market and UK production should not be compared directly with RFA figures in the RFA Quarterly report 4: 15 April 2008- 14 April 2009. This is because

1. The RFA report is for the period April 2008-April 2009, not calendar year 2008.
2. The 'proportion of biofuel by country' quoted by RFA refers to the country of origin of biofuel feedstocks in biofuels supplied in the UK, whereas the RESTATS survey estimated the quantity of biofuel manufactured in the UK from both UK and imported feedstocks.

### Impacts of introduction of the RTFO on UK biofuels businesses

Production companies said that to date the RTFO has had little impact on feedstocks used and standards applied. However, some claimed that volume of production had reduced.

Suppliers found it difficult to make accurate estimates of the costs associated with introduction of the RTFO. However, all claimed there was a substantial administrative burden, in the range of £10,000 per year to £250,000 per year. In addition to this there was a maintenance burden, which seemed to include auditing, of £50,000 per year to £250,000 per year. Other costs identified were capital cost for infrastructure development and IT systems and costs to set up feedstock supply chain monitoring and standards.

All respondents were asked about the effects of the misdrafting of the RTFO, which included areas in which impacts had been experienced or were anticipated, the effect on the volume and value of RTFCs traded and whether the respondent believed impacts would be long or short term. About half respondents had experienced impacts and anticipated impacts and these were spread across all the areas of sales, investment, volume of production and RTFC trading. Producers showed greater impact in sales and investment, and suppliers in trading of RTFCs. The majority of respondents felt that the impacts would be significant and long term.

There was strong agreement amongst all respondents that the volume of trading of RTFCs was significantly reduced since the misdrafting was discovered and that the RTFC value had decreased by 75-100%.

### Further work

Production of bioethanol and biodiesel is likely to change rapidly over the next 5 years, and additional biofuels may become part of the UK biofuels mix. It is therefore important to obtain production figures on an annual basis to meet the UK's reporting obligations.

### References

HMRC 2009. HMRC Hydrocarbon Oils bulletin. <https://www.uktradeinfo.com/index.cfm?task=bulloil>



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