Home-Grown Cereals Authority

HGCA

Biofuels in the UK: Policy, Markets & Sustainability

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Why biofuels?

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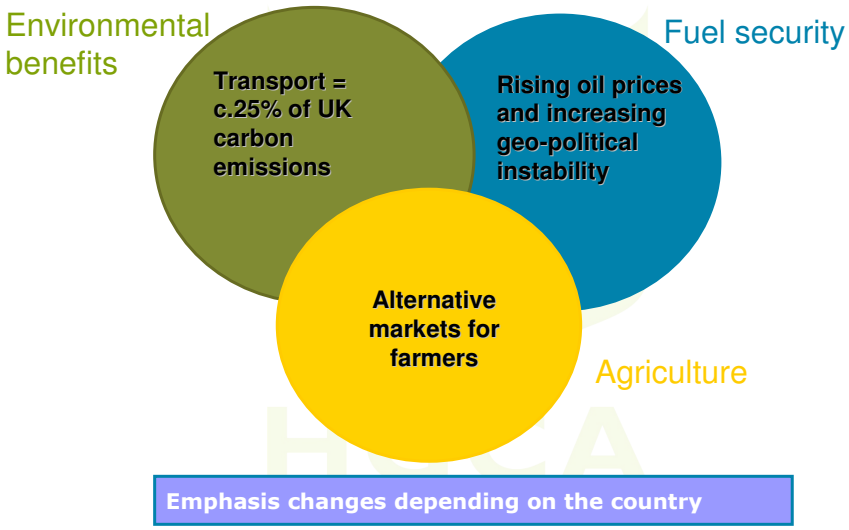


UK Renewable Transport Fuel Obligation (RTFO)

- RTFO aims to encourage supply of biofuels from sustainable sources to effectively contribute to reduction in GHG emissions
- Requires 5% volume of all UK fuel sold on UK forecourts should originate from a renewable source by 2010
- Biofuel inclusion targets:
  - 2.5 % 2008 (April)
  - 3.75% 2009
  - 5% 2010
- **RTFO aims to deliver carbon savings of ca. 750,000 tonnes pa by 2010, equivalent to taking 750,000 cars off the road**

Biofuels: Duty Incentives

- Fuel suppliers will have to meet RTFO obligation targets for which they receive certificates and 20ppl tax rebate
  - or buy certificates from other companies to make up shortfall
  - or pay a 'buy-out' price (15 ppl for 2008-9)
- UK Government has announced that from 2010 tax rebate will be removed and the 'buy-out' price increased to 30ppl
  = "Less carrot and more stick"

Current UK biofuel situation

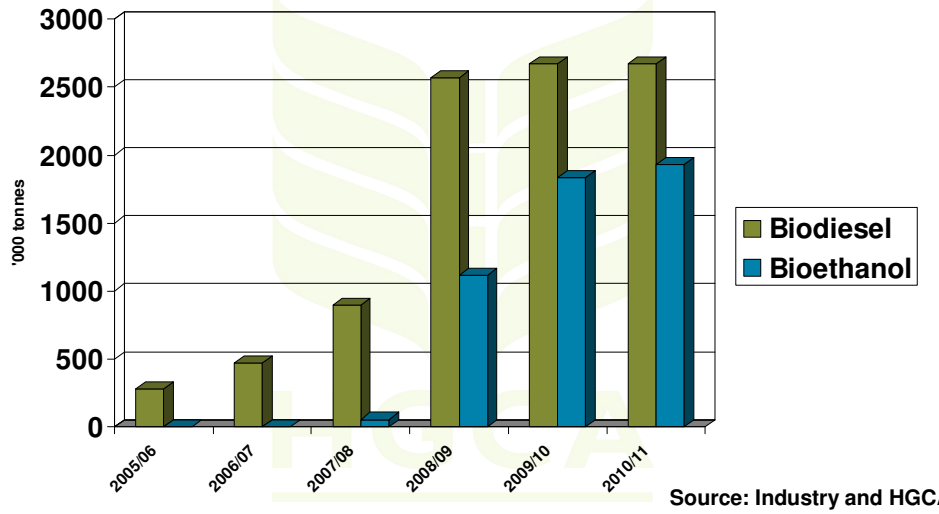
•In Q1 2008, biofuels accounted for 0.93% of total UK road fuel (cf. 0.77% in Q1 '07)

•In 2007, 305kt biodiesel and 122kt bioethanol used

•Volumes need to increase to satisfy RTFO; biofuel plants under construction, but need imports in short term

Source: HM Customs

UK Biofuel Production capacity



Source: Industry and HGCA

Planned UK Biodiesel Production Facilities* (000 tonnes)

Factory	Location	2007/08	2008/09	2009/10	2010/11	Feedstock
ABS Biodiesel	Avonmouth		225	225	225	Veg oil
Argent Energy	Motherwell	45	45	45	45	Tallow / Cooking oil
Argent Energy	Ellesmere Port		150	150	150	Tallow / Cooking oil
Biofuel Corp	Seal Sands	250	650	650	650	OSR
DMF Biodiesel	Fife	110	110	110	110	OSR
D1 Oils	Hull	42	220	320	320	Soy (Jatropha)
D1 Oils	Merseyside	50	-	-	-	Soy (Jatropha)
Greenergy	Immingham	200	200	200	200	OSR
Ebony Solutions	Cheshire	200	200	200	200	OSR / Soy
Goes on Green	Tyne and Wear			30	180	Cooking oil
Ineos	Grangemouth		500	500	500	OSR
Tees Valley	Stockton		170	170	170	OSR
Total fuel		**897**	**2,570**	**2,670**	**2,670**	

*Production capacities shown

Planned UK Bioethanol Production Facilities* (000 tonnes)

Factory	Location	Supplier	2008/09	2009/10	2010/11	Feedstock
Abengoa	Immingham		400	400	400	Wheat
ABF/BP/Dupont	Immingham	Frontier		370	370	Wheat
Bioethanol Ltd	Immingham	Centaur	100	100	100	Wheat
British Sugar	Wissington		55	55	55	Sugar Beet
Ensus / Shell	Teeside		360	360	360	Wheat
Green Spirit	Grimsby	Gleadell		200	200	Wheat
Green Spirit	Somerset	Wessex Grain	105	105	105	Wheat
Roquette	Corby 1		95	95	95	Wheat
Roquette	Corby 2				95	Wheat
Vireol	Grimsby			150	150	Wheat
Total fuel			**1,115**	**1,835**	**1,930**	

*Production capacities shown

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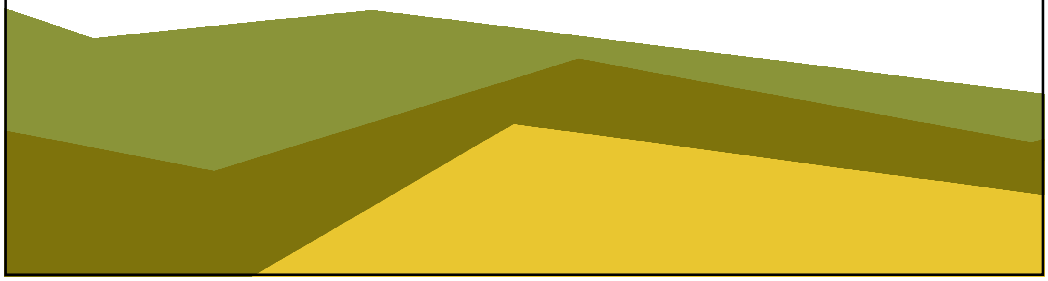
Carbon and Sustainability Accreditation for Biofuels



Carbon and Sustainability Reporting

HGCA

- Green house gas (GHG) savings and sustainability impacts of different biofuels vary significantly depending on the system of cultivation, processing and transportation of feedstock
- The introduction of biofuels can also lead to unintended negative environmental and social impacts
- Hence ‘good and bad’ biofuels
- To encourage suppliers to source sustainable biofuels the RTFO requires obligated companies to provide reports on both the **net GHG savings** and the **sustainability** of the biofuels they supply in order to receive Renewable Transport Fuel Certificates (RTFCs)

Future operation of UK RTFO

- **From 2008 all biofuels to be rewarded**, but carbon and sustainability reporting required for certificates
- **From April 2010** aims to reward biofuels under the RTFO according to their **carbon savings**
- **From April 2011** aims to reward biofuels under the RTFO **only if they meet appropriate sustainability standards**

RTFO Carbon Reporting

RTFO proposes indicative targets for fuel suppliers for annual reduction of GHG emissions for biofuel supplied:

2008-2009	40%
2009-2010	50%
2010-2011	60%

Draft EU RED set minimum GHG emission savings of 35%

RTFO Sustainability Reporting

- Principal environmental and social risks from biofuel production occur during the feedstock production part of the supply chain
- The Sustainability Reporting Model makes use of existing voluntary agri-environment and social accountability schemes to minimise cost and administrative burden of compliance
- These existing standards have been benchmarked against an RTFO Sustainable Biofuel Meta-Standard
- Seven principles identified, five environmental and two social, which include criteria and indicators that assess the extent to which the feedstock produced can be considered sustainable

RTFO Environmental Principles

- ***Carbon conservation:*** biomass production will not damage or destroy large above or below ground carbon stocks
- ***Biodiversity conservation****:* biomass production will not lead to destruction or damage of high biodiversity areas
- ***Soil conservation:*** biomass production does not lead to soil degradation
- ***Sustainable water use:*** biomass production does not lead to the contamination or depletion of water sources
- ***Air quality:*** biomass production does not lead to air pollution

Minimum criteria and indicators apply for each of the above and these have to be met to satisfy the RTFO Sustainable Meta-Standard

RTFO Social principles

- ***Workers rights:*** Biomass production does not adversely affect workers rights and working relationships
- ***Land rights:*** Biomass production does not adversely affect existing land rights and community relations

Minimum criteria and indicators apply for each of the above and these have to be met to satisfy the RTFO Sustainable Meta-Standard

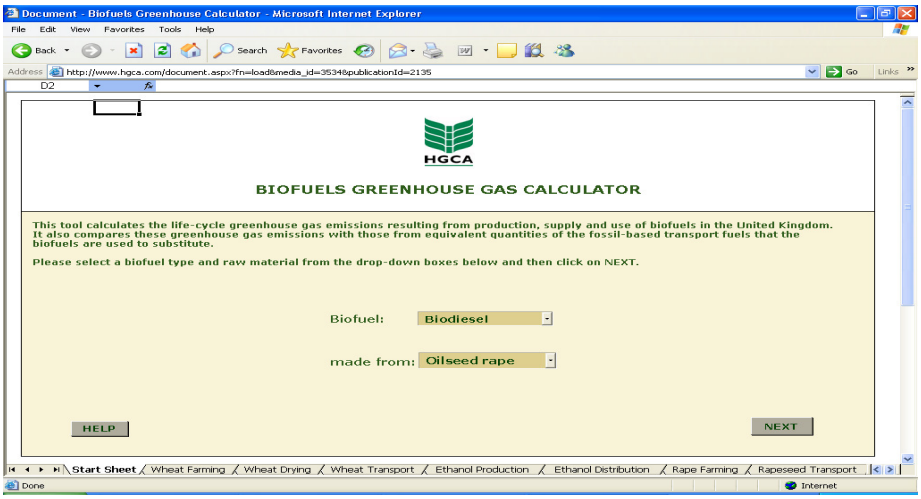
RTFO C&S Reporting Sheet

Illustrative Monthly Data Sheet

Department for Transport

Ref	Fuel type	Quantity of fuel (litres or kg)	Biofuel Feed-stock	Origin	Sustainability Information			Carbon Information		
					Env. Stnd	Social Stnd	Land use in Nov 2005	Carbon intensity	Impact of LUC	Accur-acy level
								g CO_2e / MJ		
3301	Bioethanol	250,000	Wheat	UK	LEAF	Mech + LEAF	Crop	72	0	2
3302	Bioethanol	100,000	Wheat	France	-	Mech	Crop	76	0	2
3303	Bioethanol	250,000	Sugar beet	UK	ACCS	Mech	Crop	45	0	4
3304	Bioethanol	1,000,000	Sugar cane	Brazil	-	-	Crop	19	0	2
3305	Bioethanol	500,000	N/K	N/K	-	-	N/K	72	N/K	0
3306	Biodiesel	1,000,000	Oilseed rape	UK	ACCS	Mech + RTFO	Crop	79	0	2
3307	Biodiesel	250,000	Oilseed rape	N/K	-	Mech	N/K	79	0	2
3308	Biodiesel	500,000	Palm oil	Malaysia	RSPO+ RTFO	RSPO+ RTFO	Crop	49	N/K	2
3309	BioCH4	150,000	Dry manure	UK	By-product	By-product	By-product	36	0	2
3310	Bio-ETBE	500,000	Wheat	UK	LEAF	Mech + LEAF	Crop	12	0	2

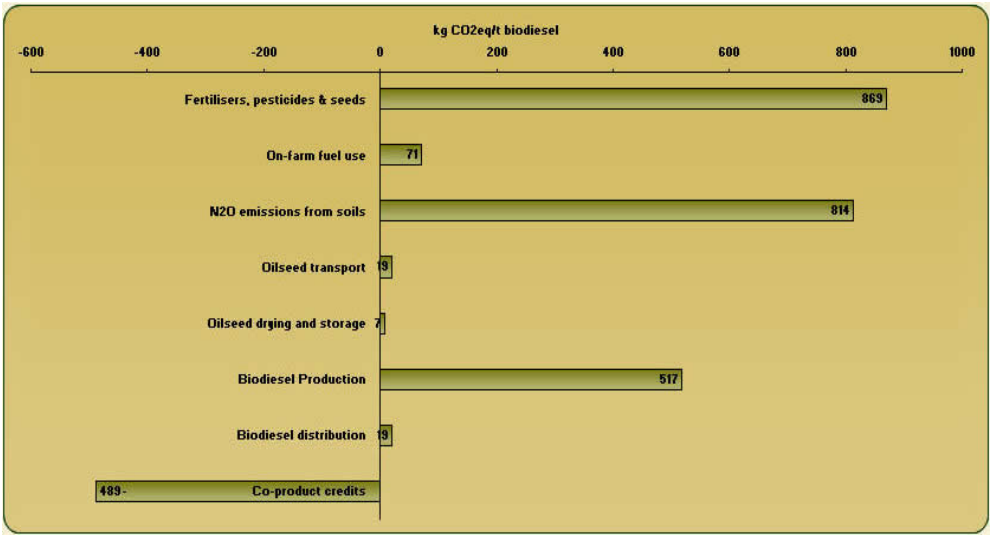
Carbon Footprint:
- how do we measure that?



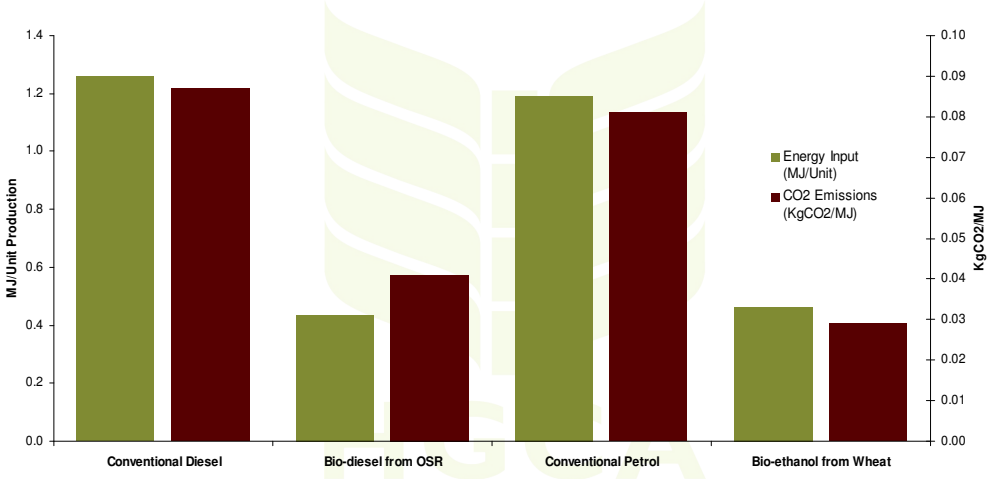
Carbon Footprint for Biofuel production
- elements of calculation

Farming	Fertiliser Seeds Pesticides Fuel Straw ploughed in or removed Crop Yield
Pre-processing	% moisture of wheat grain pre-& post-drying Diesel fuel & electricity consumed in drying and storing
Feedstock transport	Diesel fuel consumed transporting dried wheat to plant
Conversion	Energy generation at ethanol plant Natural gas consumption Imported electricity Surplus electricity Straw consumption Straw transport Straw transport distance Ethanol yield
End fuel transport	Transport to distribution site Transport mode Transport distance

Net calculation:
- CO2 emissions in biodiesel production



Carbon and Energy saving
- benefits of bio-fuels



Source: CSL 2005

If we want biofuels, …

- Are we going to starve?
- Can Food and Fuel from agriculture co-exist?

New Crop Supplies around the World
- idle land will start to come into production

Source: FAO

Set-aside
- how much will come back into production?

- EU commission confirmed 0% set-aside rate for 2008
- In UK HGCA estimates that **45-55%** will come back into production, equivalent to 270 – 330k ha
- Using average yields, potential **0.84-1.0 Mt** rape or **2.0-2.4Mt** wheat
- Estimate 2007-08 wheat plantings up by 12% compared to 2006-07
- So market responding to increased prices and land released

Summary

- Fuel security, fossil fuel prices and GHG savings driving global biofuels market
- World bioethanol market growing and driven by US (corn)
- Europe leader of global biodiesel production
- UK biofuel targets came into operation in April 2008 – 5% by 2010
- Number of biofuel plants planned in UK, but will require imports
- Increased UK plantings in response to higher crop prices and zero set-aside
- RTFO promoting both carbon savings and sustainable sourcing, so providing marketing advantage for such biofuels
- Biofuels are not a silver bullet, but produced in a verifiably sustainable way, can make a small, but important, contribution to cutting GHG emissions.
- New market opportunities for farmers via provision of renewable feedstocks

Thank you