

Biofuels – Environmental Saviour or Sinner?

APSE Seminar

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Kassam Stadium, Oxford

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Biofuels – environmental saviour or sinner?

2006

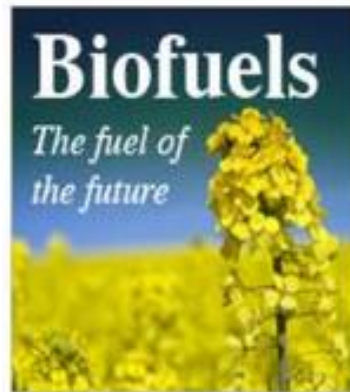
We're
harvesting
a new crop
of biofuels.

To help meet the world's demand for renewable transportation fuels, BP is partnering with DuPont to develop an advanced generation of biofuels. The first of these, bioethanol, can be blended in gasoline or co-blended with ethanol and gasoline and can be made using locally grown crops such as sugar beet, corn, and wheat. This new fuel has the potential to lower overall greenhouse gas emissions while reducing dependence on oil and expanding agriculture markets. It's a start.



beyond petroleum™

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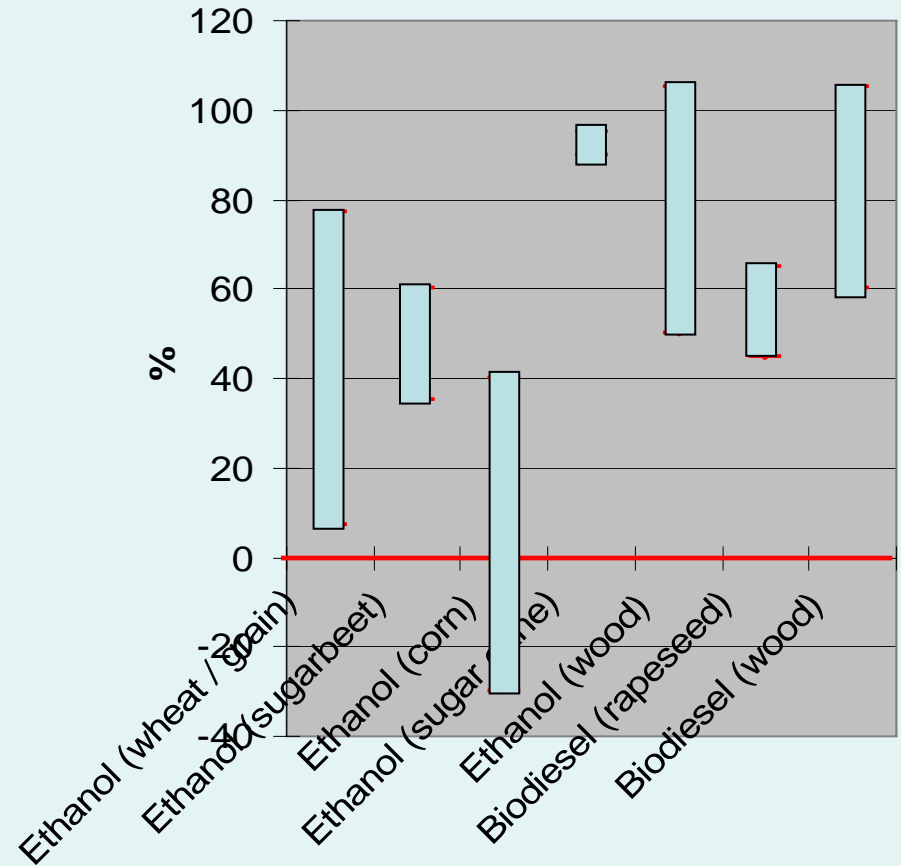
2007



There are good and bad biofuels – assurance schemes can distinguish














% WTW GHG savings compared to petrol or diesel



Derived from Concawe 2006

There is considerable consensus regarding the key sustainability criteria for biofuels

	Direct	Indirect
<input type="checkbox"/> Conservation of carbon		
<input type="checkbox"/> Conservation of biodiversity		
<input type="checkbox"/> Soil conservation		
<input type="checkbox"/> Sustainable water use		
<input type="checkbox"/> Protecting air quality		
<input type="checkbox"/> Workers rights		
<input type="checkbox"/> Land rights		
<input type="checkbox"/> Competition for food		
<input type="checkbox"/> Welfare benefits		

RTF Certificates issued on receipt of an appropriate C&S report

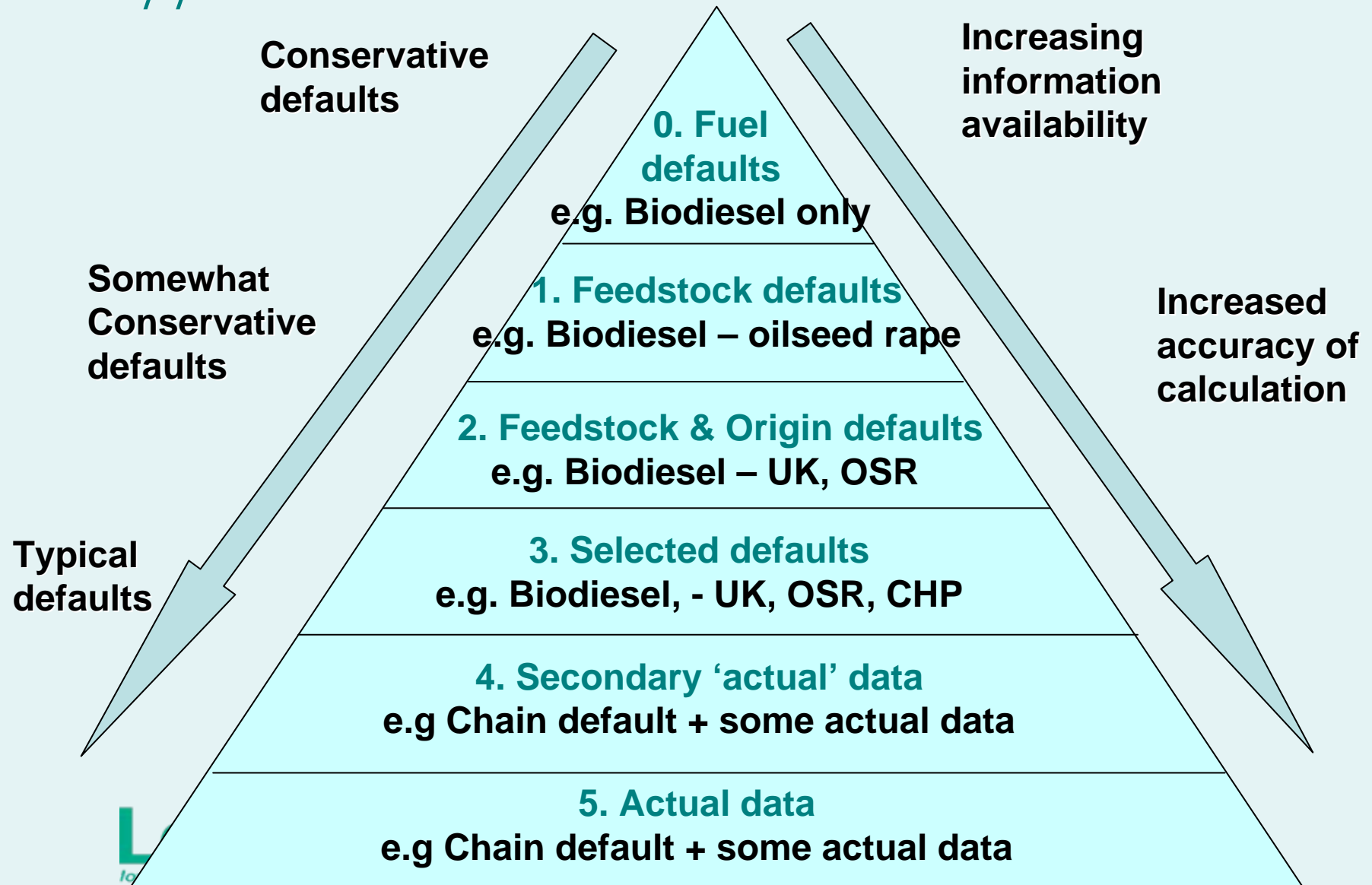
- ❑ Reports must be supplied on all fuels for which RTFCs are claimed
- ❑ Monthly reports confidential – annual aggregate reports published
- ❑ Comparative reports of company performance produced by the RFA
- ❑ No exclusions of feedstock/fuel & “Not known” reports permissible
- ❑ Independent verification of reports & claims
- ❑ Annual targets for company performance (initially no penalty for failing to achieve)

Company targets	2008-2009	2009-2010	2010-2011
Percentage of feedstock meeting the ‘Qualifying’ Environmental Standard	30%	50%	80%
GHG saving	40%	45%	50%
Data provision	50%	70%	90%

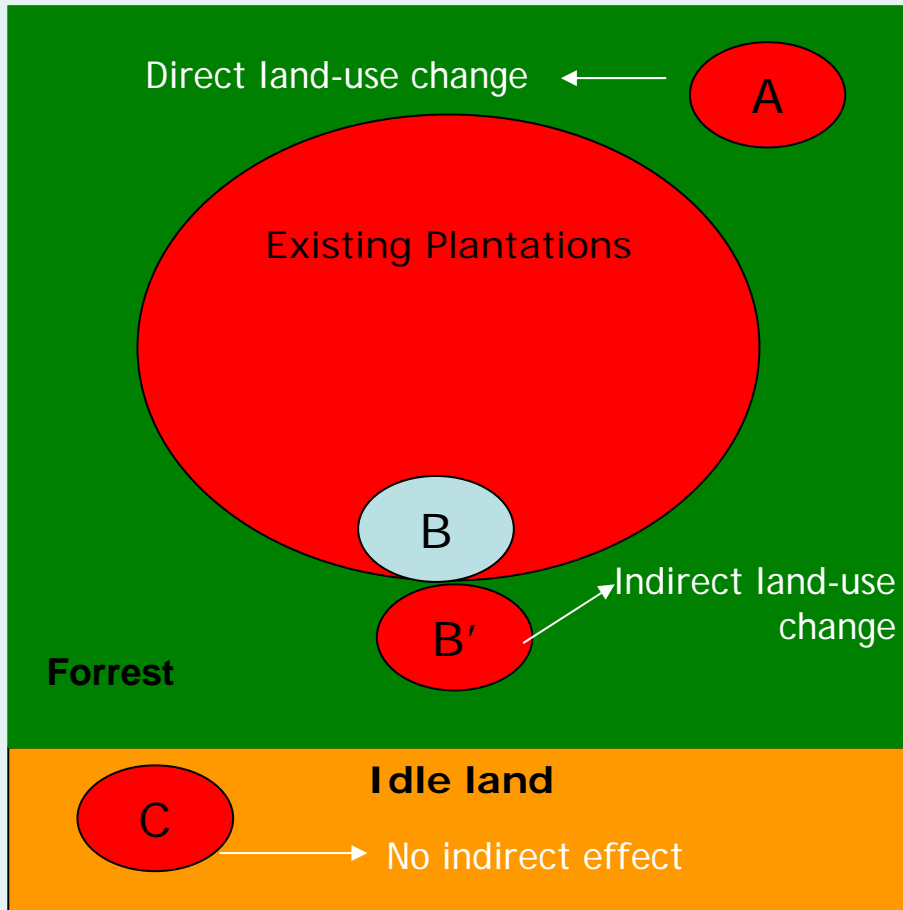
RTFO reporting on the sustainability of biofuel is based on existing voluntary standards

Environmental/ social principle	SAN/ RA	RSPO	Basel	LEAF	ACCS	EUREP GAP IFA	FSC	SAI	IFOAM	Pro- terra		
Conservation of Carbon	Qualifying standard					Red	Yellow	Red	Orange	Orange		
Conservation of Biodiversity						Red	Red	Orange	Orange			
Soil conservation						Green	Red	Orange	Orange			
Sustainable water use						Green	Red	Orange	Orange			
Air quality						Orange	Red	Green	Orange			
Workers rights						Orange	Red	Green	Orange	Green	Orange	Orange
Land rights						Orange	Red	Red	Green	Red	Orange	Orange

Tiered default values and real data used to report carbon intensity - a flexible and practical approach



Indirect effects on land use and food prices have emerged as a key concern and future influence on biofuel targets



High-blend biofuel use in HGVs and LDVs can offer significant GHG savings as long as wider sustainability is assured

	5% biofuel blend in passenger cars (biodiesel)	B30 in full HGV + LDV fleet	B30 in 50% of HGV + LDV fleet	5% biofuel blend in all road transport applications
Biodiesel 40% GHG saving	0.4mt C	1.5mt C	0.8mt C	0.7mt C

The use of B30 within the existing HGV and LDV fleet offers potential GHG-savings of up to 1.5million tonnes, greater than the 1million tonnes currently forecast for delivery within the RTFO

Source data: DfT Statistics (2003)

Total Co2eq emissions from total road transport sector: 32.5 million tonnes. Passenger cars account for 19.8 million tonnes, HGVs incl buses 8.2 million tonnes, LDVs 4.4 million and other 0.1mt.

Which blends can be used in vehicles? (i)

- ❑ EN590 (diesel) and EN228 (gasoline) enable up to a 5% biofuel component
- ❑ Manufacturers therefore warranty vehicles for fuels with up to 5% volumetric blend

Company	Blend level (up to)	Comments
Iveco	B30	Maintenance requirements specified including oil change periods and sealing ring for fuel filler cap
PSA Peugeot Citroen	B30 for captive fleets	Also up to E10 for gasoline vehicles
DAF	B5-B100	Alternative fuels and possible mixtures of diesel fuel for the DAF LF45 up to and including the XF series are allowed according to specific conditions. B100 has additional requirements
Scania (diesel engines)	B100	Biodiesel meets EN14214; Oil change intervals shorter + other maintenance requirements; Not recommended for vehicles with particle filter

Which blends can be used in vehicles? (ii)

Company	Blend level	Comments
Mercedes		Specify truck ranges and engines, fuel spec and maintenance requirements. The use of FAME in busses must be approved by EvoBus
Man	B100	“Diesel truck engines can be operated with RME or FAME only if a number of technical Attributes are taken into account”. Specify truck Ranges, fuel spec and maintenance requirements
Renault Trucks	B30 for Euro 3, 4 and 5	Biodiesel element conforms to EN14214 Half periodicity of oil change intervals

Most manufacturers assume no warranty for damage resulting from the use of poor quality FAME or failure to observe specifications for operation with FAME.

Key messages

- ❑ Biofuels can deliver GHG savings and form part of a package of measures to address emissions from transport
- ❑ Sustainability risks are real and potentially outweigh the benefits of some biofuels
- ❑ Sustainability assurance is critical but it not able to solve all the problems that are presented – a role for national governments is essential
- ❑ The UK approach for mandatory C&S reporting is a ‘stepping stone’ towards a carbon-based obligation but evolution of the scheme must account for wider sustainability issues
- ❑ Current fuel quality standards and vehicle manufacturer warranties approve the biofuel component within the fuel to 5% by volume
 - A number of heavy duty vehicle manufacturers have provided warranties for high level blends up to B100 provided EN14214 is met and specific maintenance guidelines are followed
- ❑ High level blends offer the potential to deliver further reductions in GHG emissions from the transport sector
 - Uptake for high blends potentially greater in depot based or restricted route fleets

Any Questions?

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