



From rigorous LCA approach to implementable CO2 reporting scheme

The UK biofuel example

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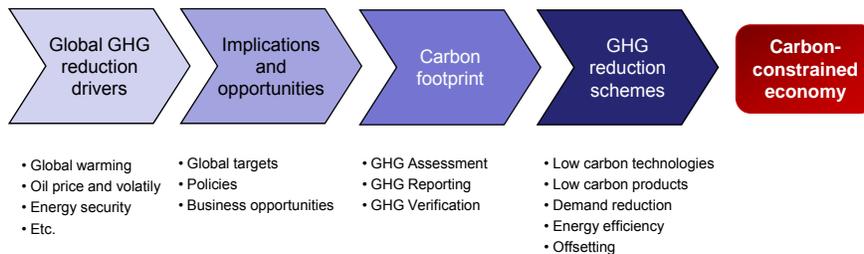
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Towards a low-carbon economy

- Global warming is increasingly regarded as one of the most important challenges facing our society.
- Governments around the world have responded by introducing policies which support lower carbon products (e.g. biofuels).
- In this regards, the global focus is today on the GHG-component of the overall environmental impact.

⇒ **need to specifically measure life-cycle GHG emissions.**



RTFO scheme – Mandatory GHG reporting for biofuels

- Within the Renewable Transport Fuel Obligation (RTFO), the UK needs to measure the actual GHG savings realised by the biofuels supplied in the UK.
- The actual GHG savings of biofuels varies widely. For policies to be effective in terms of GHG reduction, they must be directly linked to the actual GHG saving of the products they support.
 - Need for a carbon assessment tool able to differentiate between individual biofuels chains.
- Reporting and verification procedures implemented by large spectrum of users unfamiliar with LCA and footprinting methodologies.
 - Scheme needs to be as user-friendly as possible, while keeping scientific rigor.
- Biofuels can have bad environmental impact.
 - Scheme should also be able to account for these other aspects



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The RTFO reporting approach

- **Methodology requirements:** simple, robust, fair, exhaustive, evolutionary
- **Footprint approach** based on LCA methodology
- **System boundaries** - All significant GHG emissions which occur in the well to wheel supply chain of biofuels are taken into account.
 - Exclusions: minor contribution + indirect land use change
 - Avoided emissions can be taken into account
- **Allocations**
 - Various "allocation" methods are available - most appropriate is selected for each co-product, but consistency needed. Substitution approach preferred if applicable.
- **Default values** for all data required for each chain
 - Carbon intensity can be reported without any knowledge of actual fuel chain data
 - Different level of default (specific to global)
 - Conservative realistic approach -> incentive for the supplier to report specific data
- **User-friendly software tool**
- RTFO methodology served as a basis for similar schemes in Germany, the Netherlands and California.



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Sustainability requirements

- Policy goal is about GHG savings, but governments are also conscious that biofuels can have other negative environmental consequences.
- Comprehensive LCA approach far too complex for inclusion in a reporting tool
→ **Meta-standard approach for sustainability requirement**

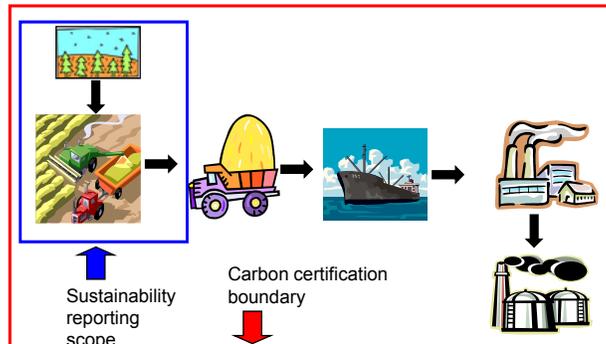
General Information						Sustainability Information				Carbon Information	
Batch number	Internal Batch number (optional)	Fuel type	Quantity of fuel (litres)	Biofuel Feedstock	Feedstock Origin	Standard	Env Level	Social Level	Land use on 30 Nov 2005	Carbon intensity incl LUC g CO ₂ e / MJ	Accuracy level
33001		Bioethanol	250,000	Wheat	UK	LEAF	QS	-	Cropland	61	2
33002		Bioethanol	100,000	Wheat	France	GlobalGAP SM	-	-	Grassland	122	2
33003		Bioethanol	250,000	Sugar beet	UK	ACCS	QS	-	Cropland	35	5
33004		Bioethanol	1,000,000	Sugar cane	Brazil	Meta-Standard	RTFO	RTFO	Cropland	24	2
33005		Bioethanol	500,000	Unknown	Unknown	Unknown	-	-	Unknown	61	0
33006		Biodiesel	1,000,000	Oilseed rape	UK	ACCS	RTFO	RTFO	Cropland	55	2
33007		Biodiesel	250,000	Oilseed rape	Unknown	Unknown	-	-	Unknown	55	2
33008		Biodiesel	500,000	Palm oil	Malaysia	RSPO	QS	QS	Cropland	45	2
33009		Biodiesel	500,000	Soy	Argentina	Basel	QS	QS	Grassland	177	2
33010		Biodiesel	250,000	UCO	UK	By-product	QS	QS	By-product	13	2
33011		Biomethane	150,000	Dry manure	UK	By-product	QS	QS	By-product	36	2



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The C&S reporting scheme for biofuels

- Footprinting alone is clearly not sufficient in the case of biofuels
- But a full LCA approach is clearly unrealistic within a reporting scheme
→ **The C&S approach represents an interesting practical trade-off**
- Similar approach in preparation for carbon labelling of goods in the UK.



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Thank you for your attention

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