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Oregon Stakeholder workshop, Carbon & Sustainability reporting

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RTFO, C&S

- Background
- Scope
- Opportunities
- Way forward



- Policy discussion focussed on carbon
- Always worried about sustainability
 - Some sources of biomass are actually carbon positive
- Consultation documents issued
 - Obligation point
 - Certificate registration/ trading/ redemption
 - Buy out funds

- Renewable Obligation

- On power generators
- “Tradable” CROC’s for biomass
- High dependence on traded imports
- Small no. of long term UK supply deals
- DTI signal to increase link to energy crops
- Ofgem role in supply chain assurance

- Renewable Transport Fuel Obligation

- On oil refineries/ importers
- “Tradable” FROC’s for biofuel
- Balance of trade issues
- Developing market dynamic
- EU Link to energy crops
- DfT role in supply chain assurance for C&S
- Future hard-wiring carbon
- Future hard-wiring sustainability?



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Sustainability - Environment

1. Conservation of carbon stocks
 - Protection of above-ground carbon
 - Protection of soil carbon
2. Conservation of biodiversity
 - Conservation of important ecosystems & species
 - Basic good biodiversity practices
3. Sustainable use of water resources
 - Efficient water use in water critical areas
 - Avoidance of diffuse water pollution
4. Maintenance of soil fertility
 - Protection of soil structure and avoidance of erosion
 - Maintain nutrient status
 - Good fertiliser practice
5. Good agricultural practice
 - Use of inputs complies with relevant legislation
 - Use of inputs justified by documented problem
 - Safe handling of materials
6. Waste management
 - Waste management complies with relevant legislation
 - Safe storage and segregation of waste



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Sustainability - Social

1. Freedom of association and right to collective bargaining
2. Working hours
3. Seasonal workers, contracts and undocumented workers
4. Child labour
5. Health and safety
6. Wages/compensation
7. Discrimination
8. Basic treatment and disciplinary practices
9. Forced labour
10. Land right issues



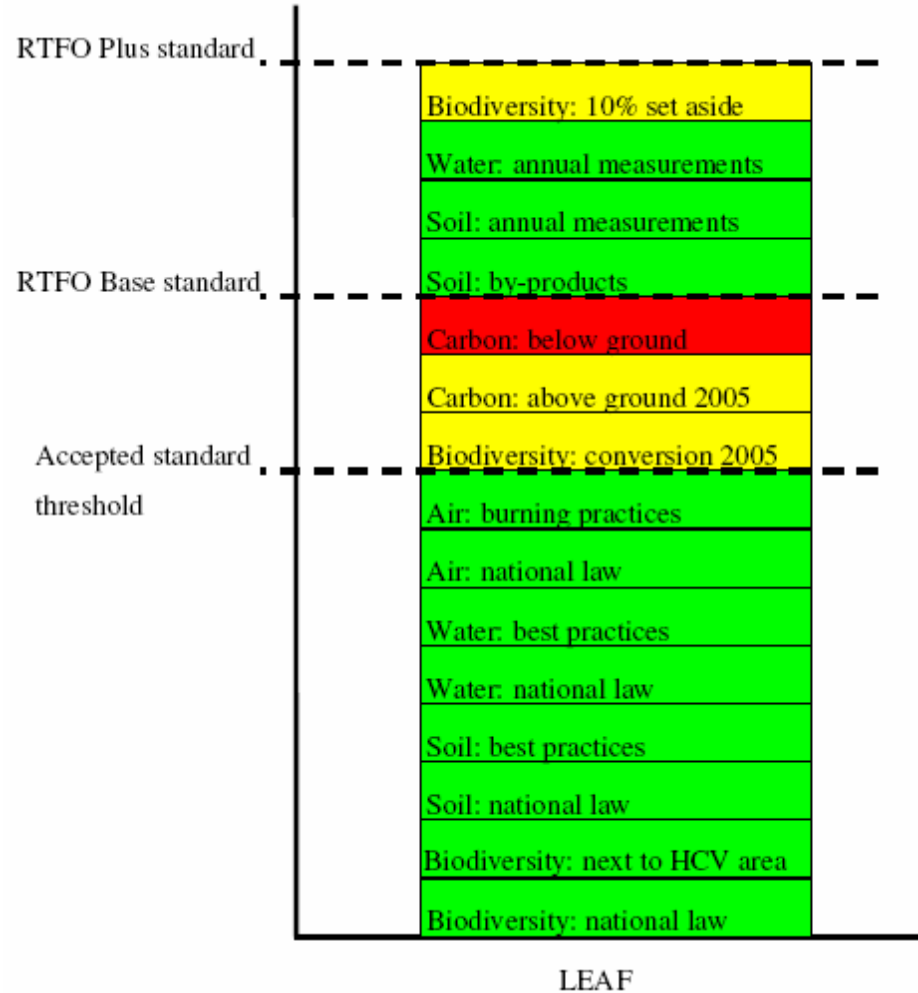
Sustainability mapping

	SAN/RA	RSPO	Basel	LEAF	ACCS	EurepGAP IFA	FSC
P1. Conserve Carbon	Y	P	P	Y	P	N	P
P2. Conserve Biodiversity	Y	Y	Y	Y	P	Y	Y
P3. Sustainable Water Use	Y	Y	Y	Y	P	P	P
P4. Soil fertility	Y	Y	Y	Y	Y	Y	P
P5. Good Ag Practice	Y	Y	Y	Y	Y	Y	Y
P6. Waste Management	Y	Y	Y	Y	P	P	P

- Mapping existing standards to criteria
- ACCS lags SAN/RA and RSPO and Basel
- LEAF works



- Range of compliance
 - Accepted
 - Base
 - Plus
- Impact on buyer choice





The Supply Chain Dynamic

Bio-mass to power

- Buyer position?
 - Asset integrity
 - Admiralty heritage
 - Risk averse
- Supplier response
 - Flat price sales
 - Entrepreneurial brokers
 - UK agriculture focus on cereals
 - Limited managed energy crop farming

Bio-mass to road fuel

- Buyer position?
 - Asset integrity
 - Global brands
 - Risk averse
- Supplier response
 - Flat price sales
 - Entrepreneurial developers
 - UK agriculture focus on cereals
 - Likely managed energy crop farming
 - Driven by Carbon

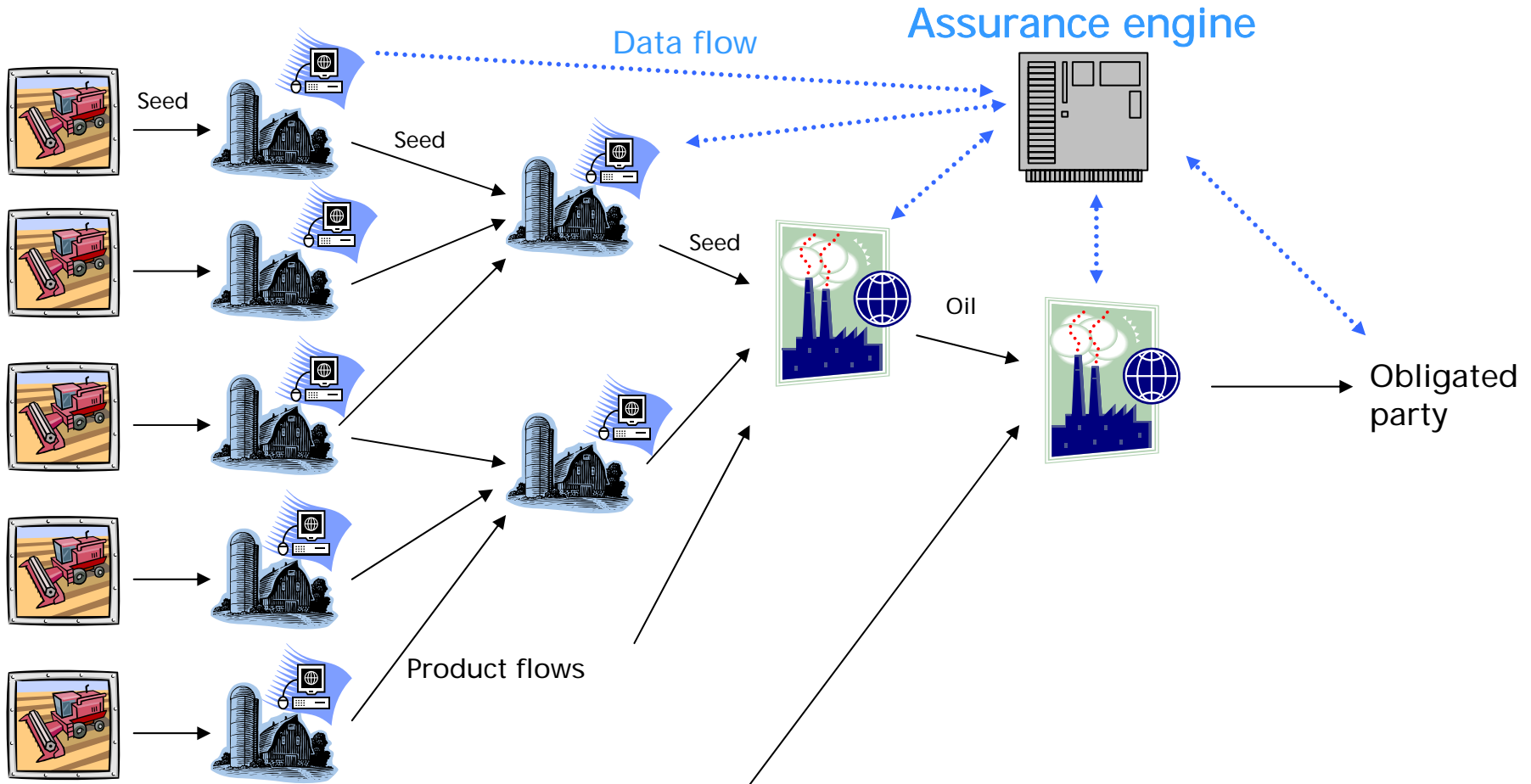
- Significantly reduced carbon footprint of transport
- Parallel market development
- Supply chain understanding

Fuel Sustainability		Fuel Factor (g CO ₂ e/kWh) (11.8gpa/0.9kWh)												
<p>CO₂ emissions (grams)</p>														
<p>Fuel cost (cost/index) for 12,000 miles <small>Assumes 100% conversion rate from petrol to gas for comparison. The figure represents only the conversion cost and does not include the cost of the fuel itself. The CO₂ cost is 120g/kWh.</small></p>		<p>C 120g/kWh</p>												
<p>VED for 12 months <small>Based on standard 100% conversion rate from petrol to gas for comparison.</small></p>		<p>£694</p>												
<p>Environmental Information</p> <p>A guide to fuel economy and CO₂ emissions which contains data for all new passenger car models in categories of up to 4000 cc engine capacity. In addition to the fuel economy (l/100 km) and CO₂ emissions (g/km) data, the guide also provides information on the car's performance (0-100 km/h and top speed) and the car's main greenhouse gas emissions (CO₂ in the main greenhouse gas responsible for global warming).</p>														
Make/Model:	Ford Focus 1.6 TDCi (118hp) (0.9kWh)	Engine Capacity (cc): 1600												
Fuel Type:	Diesel	Transmission:	5-speed manual											
<p>Fuel Consumption:</p> <table border="1"> <thead> <tr> <th>Drive cycle</th> <th>litres/100km</th> <th>g/km</th> </tr> </thead> <tbody> <tr> <td>Urban</td> <td>6.2</td> <td>145</td> </tr> <tr> <td>Extra urban</td> <td>4.0</td> <td>100</td> </tr> <tr> <td>Combined</td> <td>4.6</td> <td>110</td> </tr> </tbody> </table>			Drive cycle	litres/100km	g/km	Urban	6.2	145	Extra urban	4.0	100	Combined	4.6	110
Drive cycle	litres/100km	g/km												
Urban	6.2	145												
Extra urban	4.0	100												
Combined	4.6	110												
<p>Carbon dioxide emissions (g/km): 120g/km <small>Important note: Some specifications of this model may have lower CO₂ emissions than this. Check with your dealer.</small></p>														



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Supply chain assurance



- Different markets

- Fossil oil supply chain

- Vegetable oil supply chain



Requires understanding in order to develop value



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