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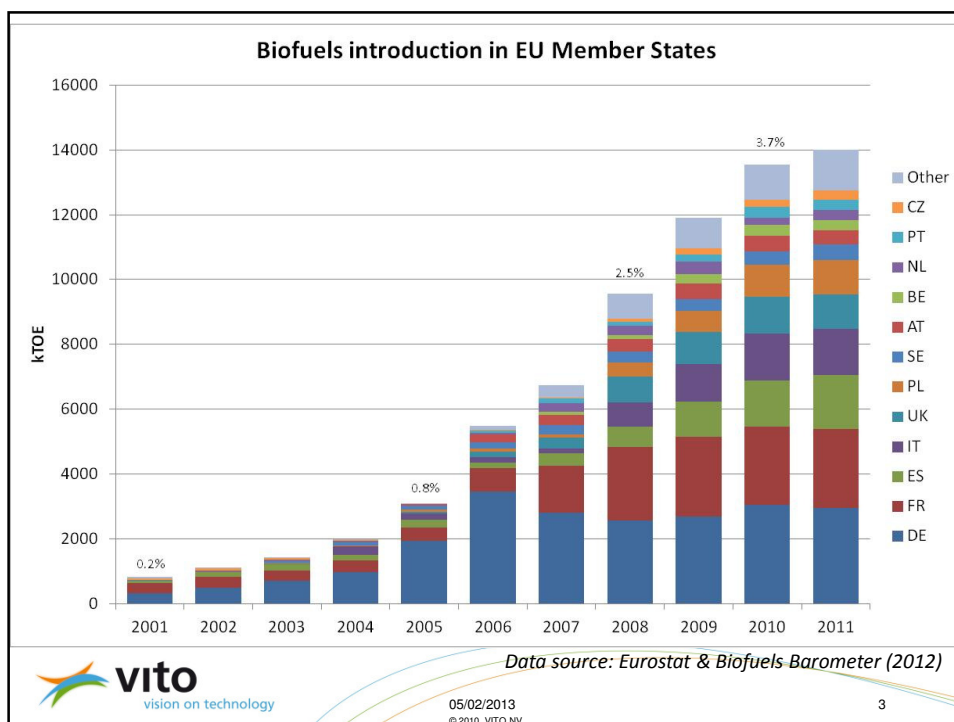
## European Biofuels Policy

Luc Pelkmans, VITO

*"Socio-economic impacts of Biofuels and Bio-products"*  
*Final conference of the Global-Bio-Pact Project*  
*Brussels, 29-30 January 2013*

## Main EC biofuel policies from 2003

- » Biofuels directive (2003/30/EC)
  - » Reference values: 2% share in 2005, **5.75% in 2010**
  - » Yearly reporting from 2004
- » Energy taxation directive (2003/96/EC)
  - » Possibility of tax reduction for biofuels, no overcompensation
- » Fuel quality directive (1998/70/EC, amended by 2003/17/EC)
  - » 5% ethanol / 15% ETBE allowed in petrol fuel
- » FAME standard & revision diesel standard EN590
  - » 5% biodiesel (FAME - EN 14214) allowed in diesel fuel



## Implemented policies

Stage	Measure	Application
Feedstock	<b>Support to agriculture</b> (energy crop subsidy / set aside land)	EU, CZ
Production	RD&D funding	EU + country level
	Loans and subsidies for biofuel production facilities	FR, DE, PL, ES, SWE,...
	<b>Producer tax incentives for biofuel production</b>	CZ, LV, USA (B99)
	<b>Authorised quota system</b> for biofuel producers, related to tax reduction	FR, IT, BE
Distribution	Standards (biofuel & normal fuel)	AT, DE, FR, SWE, IT, EU (2003)
	<b>Tax differential (tax reduction for biofuels)</b>	DE, FR, AT, ES, SE, ... EU (Energy Taxation Dir.)
	<b>Obligations for fuel distributors</b>	AT, FR, SL, DE, NL, UK, ...
	<b>Obligations for filling stations</b>	SWE, BR
	Loans and subsidies for filling stations	DE
Market	Funding of demonstrations	EU + country level
	Procurement methods (green proc., common procurement)	SWE, FR, USA
	<b>User incentives</b> (tax incentives biofuel vehicles, free parking, exemption of congestion charge or other road tax, ...)	SWE

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ELOBIO, 2008

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## Major market issues & media exposure in 2007 – 2008

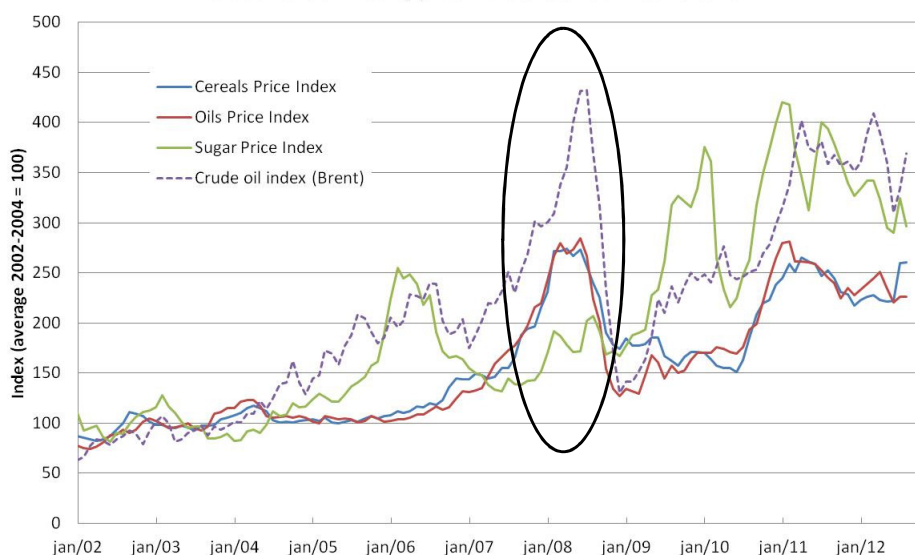
- » Increase of commodity prices ('speculation bubble')
  - *Biofuels blamed as the main cause for high prices of grain, bread, pasta, tortillas, beer, ...*
- » "Food vs fuel" discussion
  - *"fuel for the rich to the expense of food for the poor?"*
- » Unsustainable agricultural practises in developing countries
  - *Biofuels linked to*
    - *deforestation (rain forest)*
    - *biodiversity loss*
    - *land grabbing*



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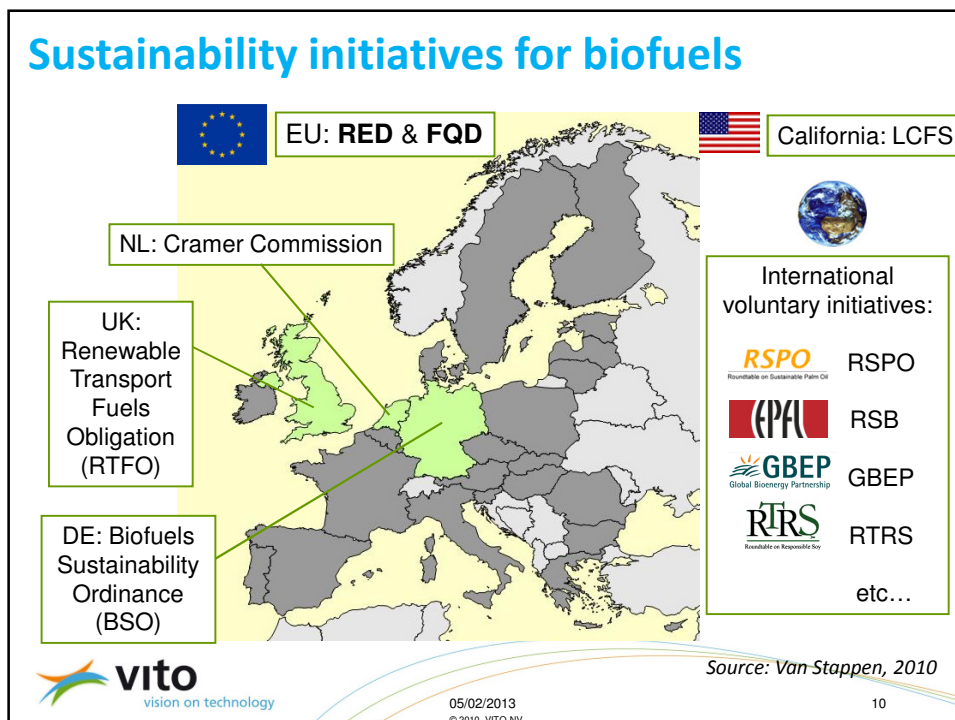
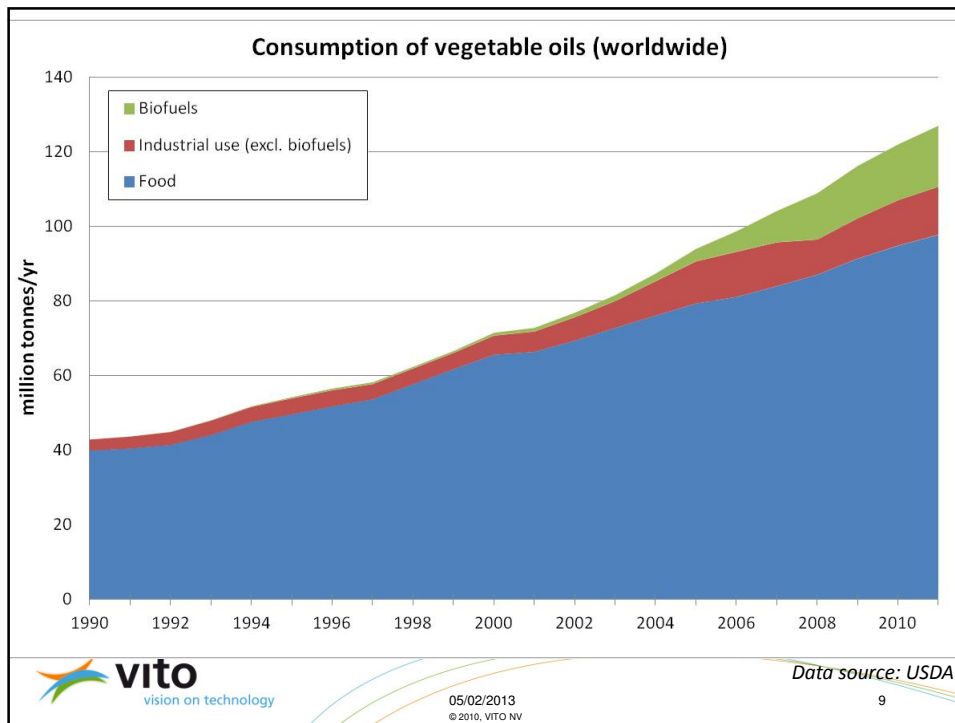
Evolution of commodity price indices between 2002 and 2012



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Data source: FAO (commodities) & EIA (crude oil)

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## Renewable Energy Directive (2009/28/EC)

- » Part of the EU climate and energy package
- » Directive to achieve 20% renewable energy in the EU in 2020
  - » Target differs by Member State
  - » MS need to present action plans (NREAP)
- » Specific target: 10% renewable energy in transport (for all MS)
  - » This includes biofuels, electricity in transport (renewable part) and hydrogen (renewable part)
  - » Multiple counting for biofuels from waste, residues, cellulose
- » Link with amended **Fuel Quality Directive (2009/30/EC)**
  - » By 2020 fuel suppliers should reduce the greenhouse gas intensity of their fuel (CO<sub>2</sub>eq per MJ fuel) by 6% compared to 2010
  - » Important role for biofuels

## RED Sustainability requirements

- » Sustainability criteria **for biofuels and bioliquids**:
  - » to be counted for national targets;
  - » to count towards renewable energy obligations;
  - » To be eligible for financial support.
- » Requirements:
  - » GHG saving of at least 35% (50%-60% from 2017/18) compared to fossil fuel
  - » Not from converted high carbon stock land (*ref. Jan 2008*)
    - » Continuously forested areas, wetlands, peatlands
  - » No raw material from land with high biodiversity value
    - » Primary forest, nature protection areas, highly biodiverse grasslands
  - » Good agricultural practises (EU)

## RED Sustainability requirements

- » Verification of compliance with the sustainability criteria for biofuels and bioliquids:
  - » **Mass balance** system
  - » Member states ensure that economic operators submit reliable information (independent audits),
  - » Member states **cannot impose additional criteria**,
  - » The EC may recognize **voluntary** national or international **schemes** containing accurate data for fulfilling (part of) the sustainability criteria,
    - » Valid for 5 years

## Voluntary schemes for biofuels

Currently approved:

[http://ec.europa.eu/energy/renewables/biofuels/sustainability\\_schemes\\_en.htm](http://ec.europa.eu/energy/renewables/biofuels/sustainability_schemes_en.htm)

ISCC	DE	Ensus	EtOH
Bonsucro EU	<i>Sugar cane</i>	Red Tractor	<i>Agri crops</i>
RTRS EU RED	<i>Soy</i>	SQC	<i>Scot. crops</i>
RSB EU RED		Red Cert	DE
2BSvs	FR	NTA 8080	NL
RBSA	<i>Abengoa</i>	RSPO RED	<i>Palm oil</i>
Greenergy	<i>BR EtOH</i>		

## EC reporting *(as announced in RED)*



- » Every two years report *(starting Dec 2012)* on *(both for third countries and Member States)*
  - » measures taken for soil, water and air protection,
  - » impact on social sustainability,
  - » availability of foodstuffs at affordable prices,
  - » land-use rights,
  - » For significant exporters of biofuels raw materials to the EU
    - » Implementation of Conventions of International Labour Organisation,
    - » Implementation of Protocol on Biosafety & Convention on International Trade in Endangered Species of Wild Fauna and Flora.
- » Biofuels Baseline 2008 report *(published end 2011)*
- » Communication on iLUC by end 2010

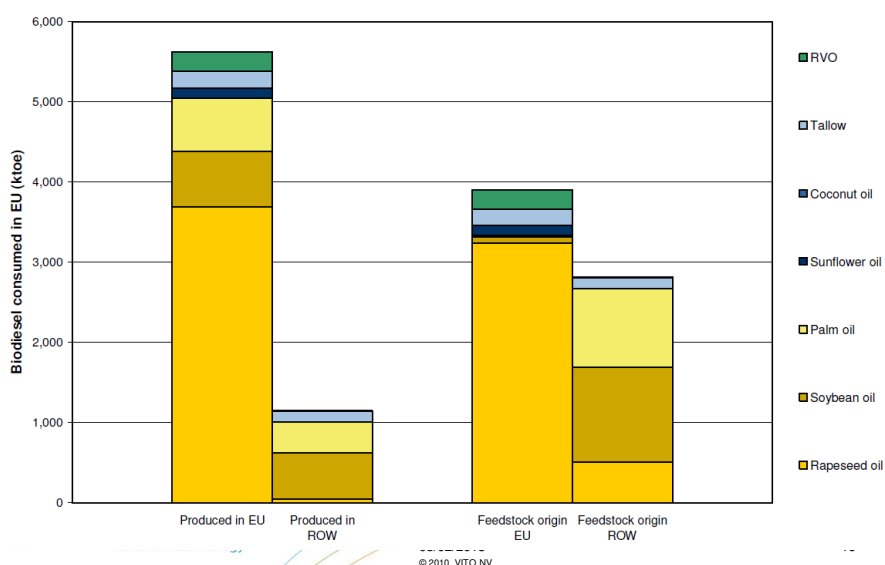


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## “Biofuels Baseline 2008”

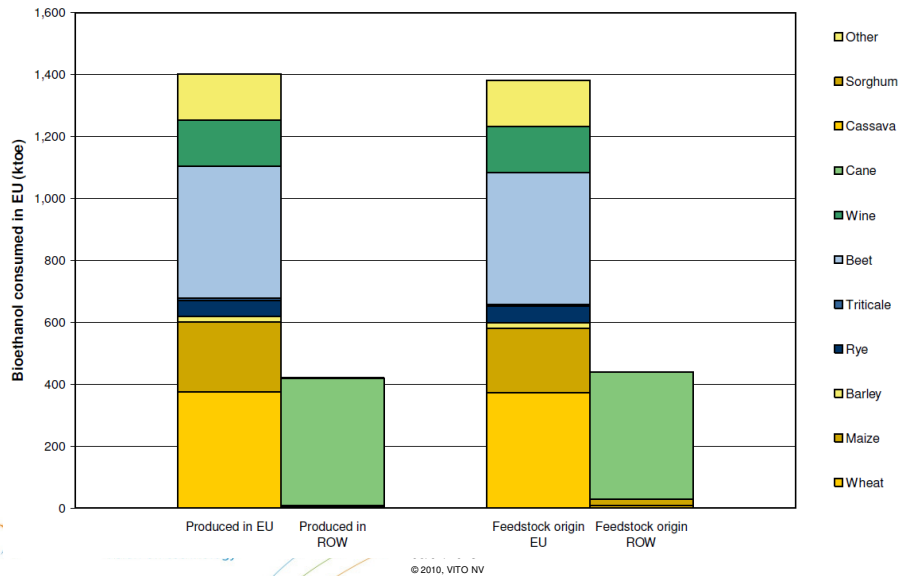
EU biodiesel feedstock origin in 2008 (ktoe) *(Ecofys, 2011)*





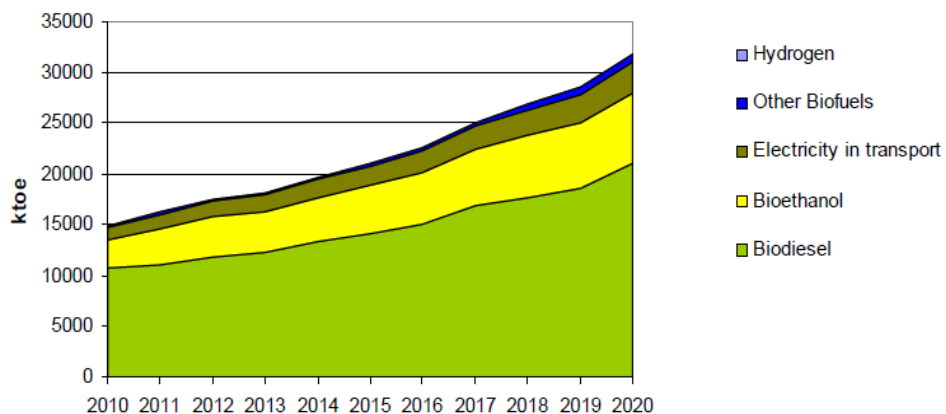
## “Biofuels Baseline 2008”

EU bio-ethanol feedstock origin in 2008 (*Ecofys, 2011*)



## Projected evolution according to NREAPs

EU development of renewable energy in transport



Source: EC COM(2011)031, based on NREAP analysis

## Indirect land use change (iLUC)

- » Major discussions in the past years on iLUC, in relation to the expected growth of biodiesel & bio-ethanol for EU markets
- » Different studies & publications (Searchinger, ...) on the impact of iLUC
  - » Global modelling for very complex interactions
  - » IFPRI study (subcontract for EC)
- » EC decision on how to deal with iLUC was delayed
  - Uncertainty for the market
  - Recent proposal to amend the RED & FQD (see further)



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## iLUC modelling

Distribution of LUC emissions according to IFPRI (2011), in CO<sub>2</sub>-eq/MJ\* biofuels  
\*Current fossil reference = 83.8 CO<sub>2</sub>-eq/MJ

	5 percentile	Median	95 percentile
<b>Additional Mandate</b>	<b>24.4</b>	<b>38.8</b>	<b>50.4</b>
Wheat	8.3	13.8	18.4
Maize	6	10.1	13.2
Sugar Beet	0.8	7.2	12.6
Sugar Cane	6.5	15.4	26.5
Soybean	38.4	56.3	73.9
Sunflower	30.6	53.5	72
Rapeseed	28.2	54.9	80.7
Palm Fruit	47.1	54	60.3

Source: MIRAGE-Biof Simulations

Tough story for biodiesel



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## COM(2012)595 (Oct 2012): proposal to amend the RED and FQD

- » In relation to iLUC & potential impact on food prices
- » Proposal:
  - » Contribution of food-crop based biofuels limited to 5% (*~current contribution*)
  - » Stimulate non-land using & advanced biofuels (multiple counting)
  - » Min. 60% GHG reduction for new installations from June 2014 (in stead of 2018)
  - » Reporting with 'iLUC' factors
  - » From 2021 possibly iLUC factors in GHG calculation (on the basis of EC report in 2017)

## Conclusions

- » Strong market growth between 2005 and 2009
  - MS policies triggered by the Biofuels Directive (2003/30)
  - Same period as strong US biofuel growth (corn based)
  - Increase in commodity prices, correlated with crude oil prices (*2007-2008 speculation bubble*)
- » EU biofuel policy affects worldwide markets of commodities
- » RED (2009/28/EC) includes sustainability criteria and regular reporting of impacts to face sustainability concerns
- » Proposal for iLUC mitigation may have important impact on market development

## Thank you for listening!

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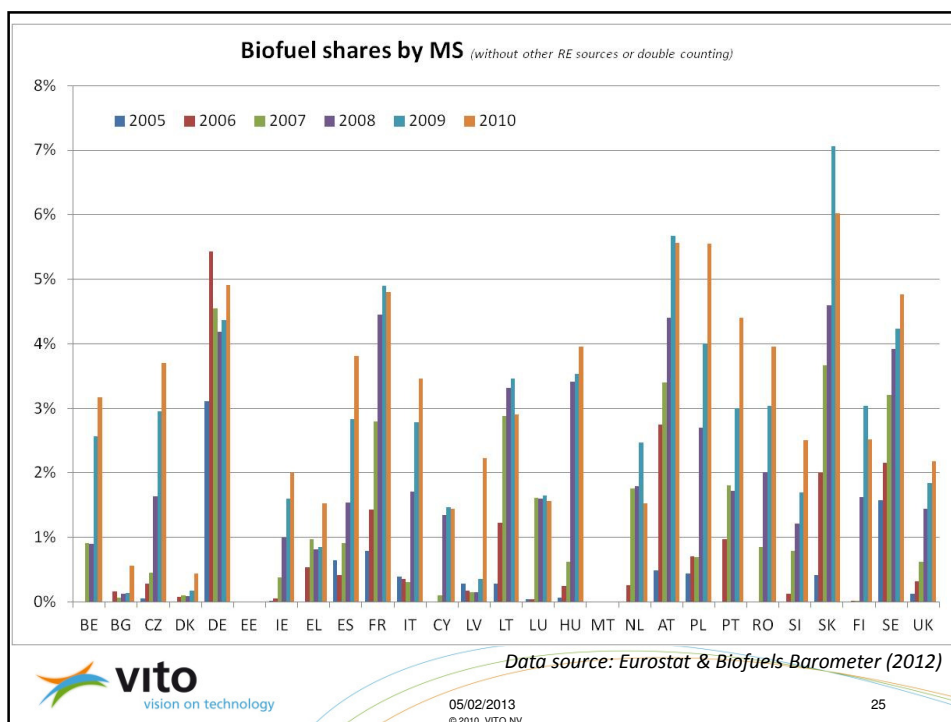
[www.vito.be](http://www.vito.be)

[www.bioenergytrade.org](http://www.bioenergytrade.org)

[www.elobio.eu](http://www.elobio.eu)



*Spare slides*



## “Biofuels Baseline 2008”

EU biodiesel feedstock origin in 2008 (ktoe) (*Ecofys, 2011*)

	Rapeseed / oil	Soybean oil	Palm oil	Sunflower oil	Tallow	RVO	Total
EU	3,233	82	14	124	212	235	3,900
Canada	122	18			4	6	149
Ukraine	252	10					261
USA	13	528			133		673
Argentina	4	238					242
Brazil		342					343
Indonesia			624				624
Malaysia			414				414
Other	111	52					164
<b>Total</b>	<b>3,734</b>	<b>1,269</b>	<b>1,053</b>	<b>124</b>	<b>348</b>	<b>241</b>	<b>6,770</b>

## “Biofuels Baseline 2008”

EU bio-ethanol feedstock origin in 2008 (*Ecofys, 2011*)

	Wheat	Maize	Barley	Rye	Triticale	Sugar beet	Wine	Sugar cane	Other	Total
EU	373	207	20	51	7	427	148		149	1,381
USA	2									3
Norway	2									2
Ukraine	1	1								3
Argentina		12						5		17
Brazil		6						289		296
Pakistan								33		33
Bolivia								19		19
El Salvador								13		13
Peru								13		13
Egypt								14		14
Guatemala								11		11
Costa Rica								10		10
South Africa								2		2
Other	2							1		4
<b>Total</b>	<b>381</b>	<b>228</b>	<b>20</b>	<b>51</b>	<b>7</b>	<b>428</b>	<b>148</b>	<b>411</b>	<b>149</b>	<b>1,822</b>