

European Biofuel Policies

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Energy research Centre of the Netherlands

Mission: *'ECN develops high-level knowledge and technology for the transition to a sustainable energy system.'*

Founded in 1955, 650 employees, 80 M€/y turn-over, 8 Business Units

ECN Policy Studies

Mission: *'We contribute to making the energy system more sustainable by carrying out independent policy research and studies for governments, industries and non governmental organisations.'*

Main biofuel projects:

- VIEWLS 'Clear Views on Clean Fuels' (2003-05) www.viewls.org
- REFUEL: EU biofuels roadmap to 2030 (2006-07) www.refuel.eu
- ProBIOS: Promotion of Biofuels for Sustainable Development in South and Southeast Asia (2005-07) www.probios.org
- Impact Assessment Biofuel Directive (2006) for EC/DG-TREN



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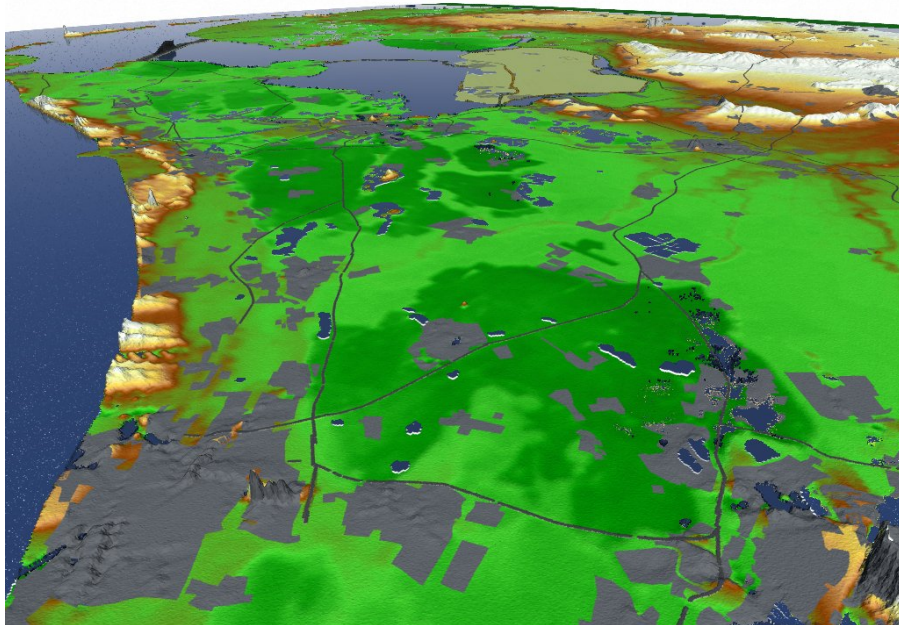


EU motivation for biofuels (1)

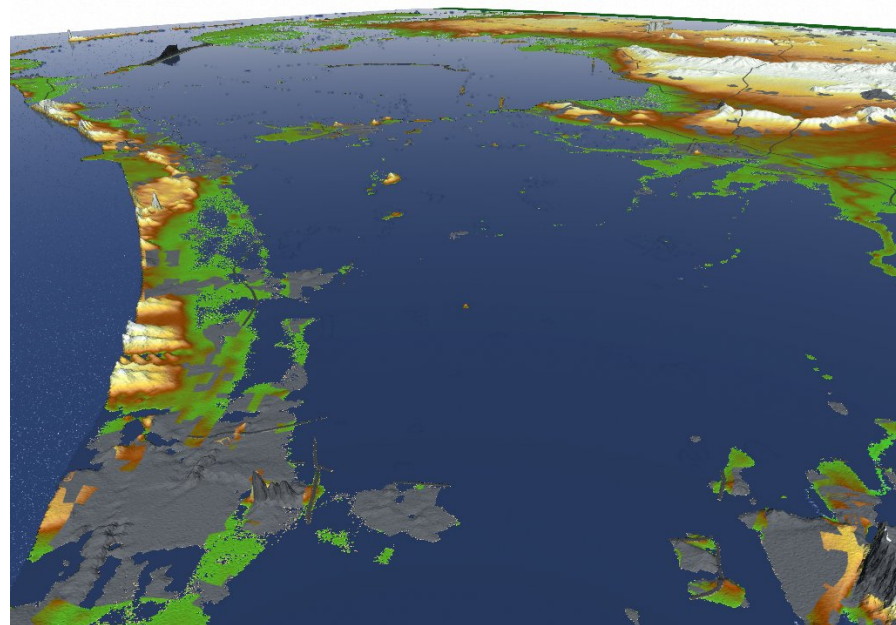
1. Global warming: reduction of greenhouse gas emissions

- commitment to the Kyoto protocol
- transport accounts for 21% of the EU's GHG emissions
- GHG emissions in the transport sector show, by far, the largest increase

The Netherlands today...



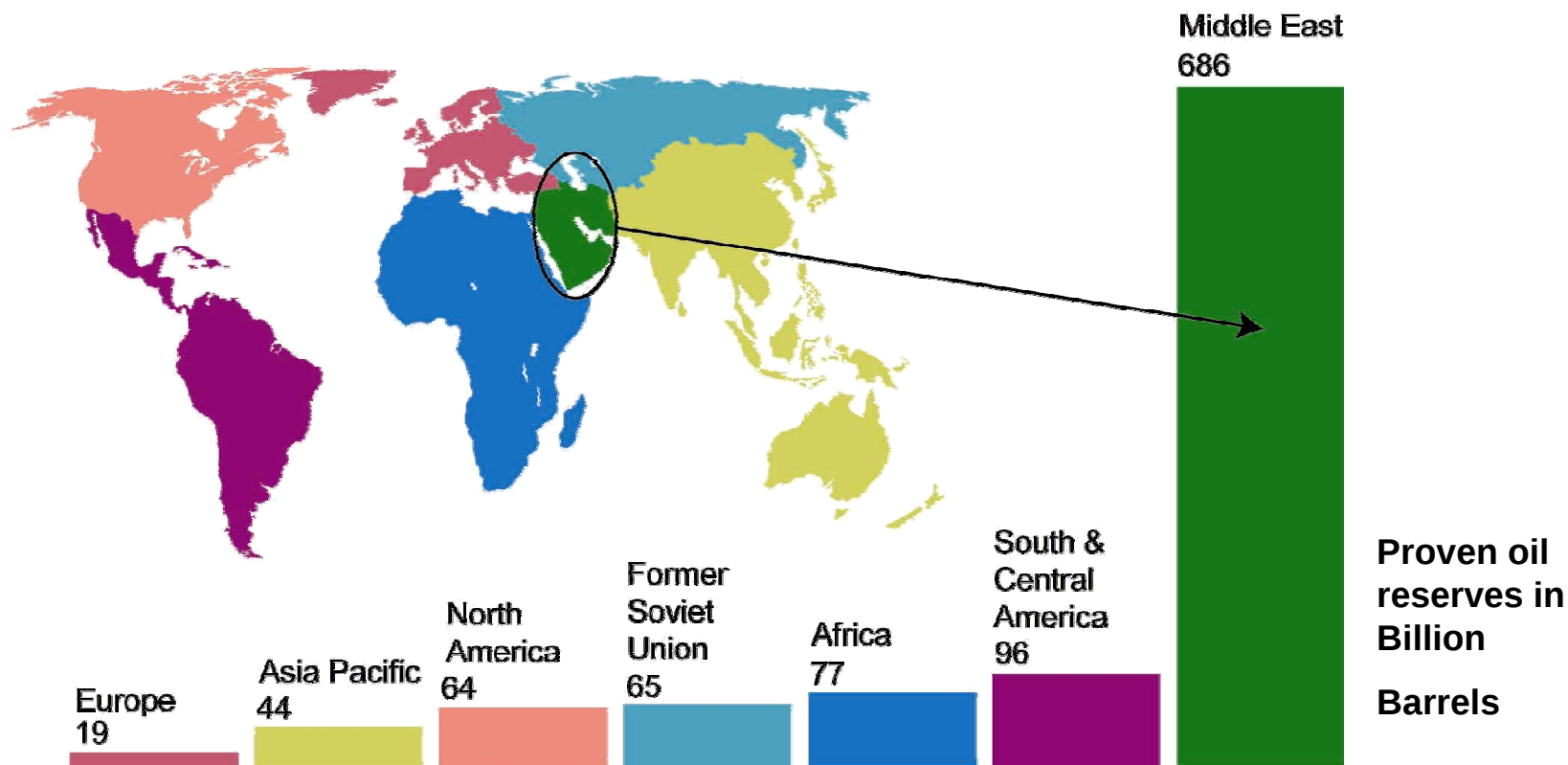
The Netherlands in ...?



EU motivation for biofuels (2)

2. Security of supply

- decrease dependency on oil
- decrease dependency on Middle-East

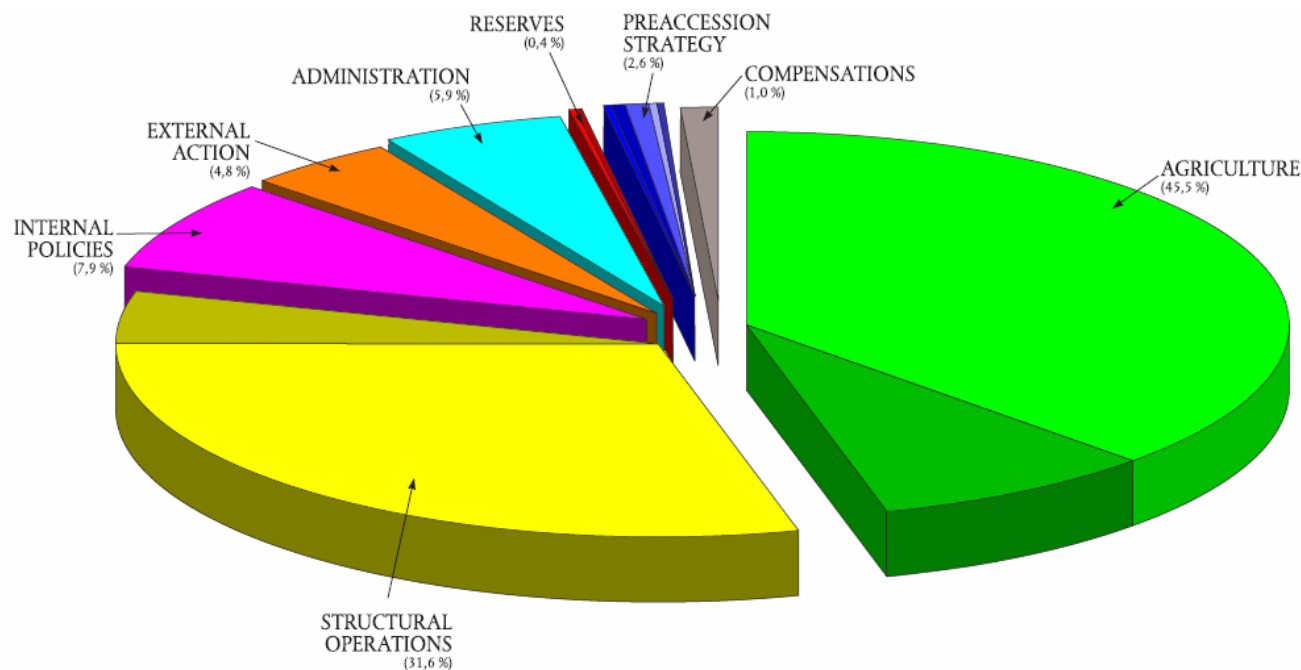


EU motivation for biofuels (3)

3. Agricultural development

- overproduction of food: reform Common Agricultural Policy (CAP)
- new markets for agricultural products & rural development

EU budget 2006: € 121 billion, 45.5% for agriculture & rural development



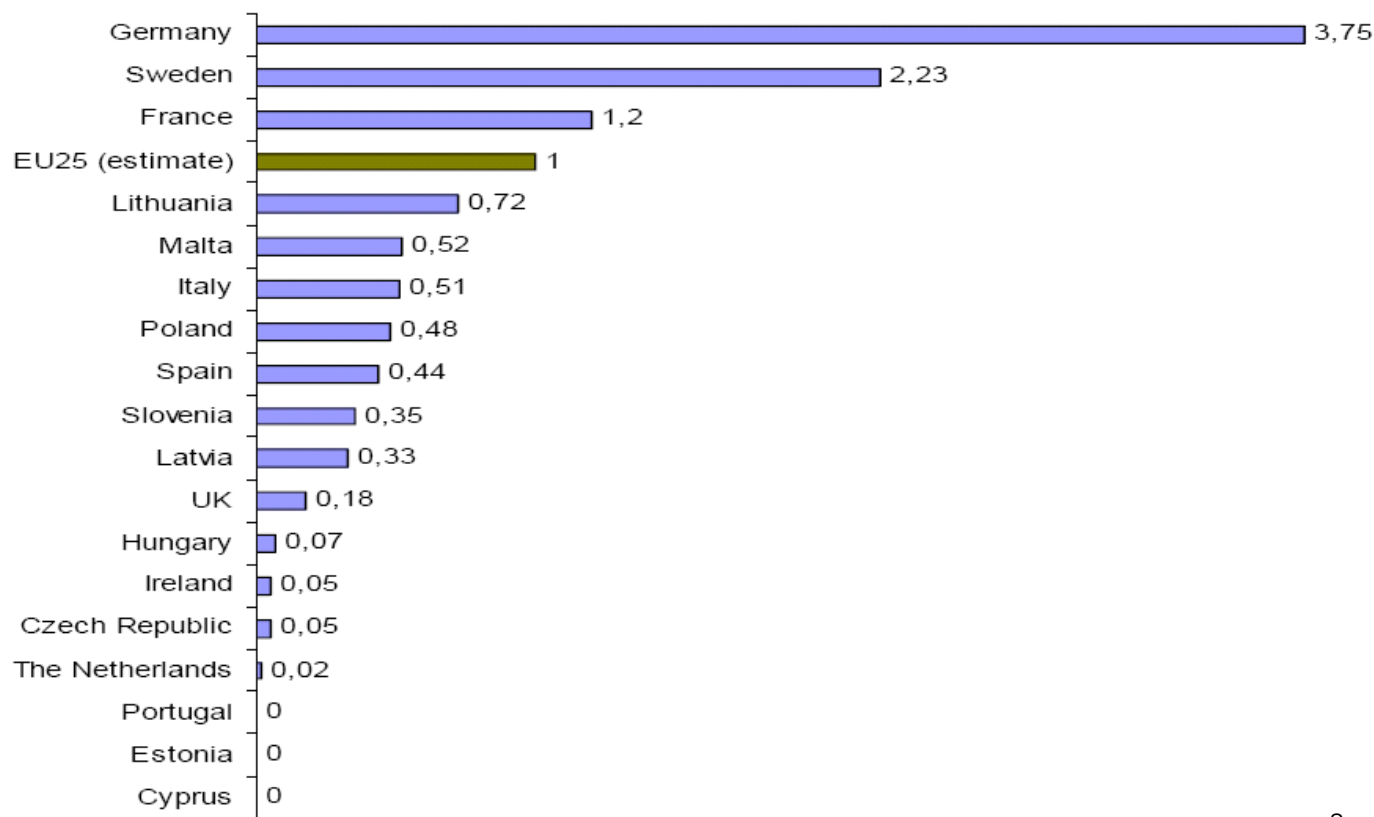
EU Policy



- 1990's: EU proposals on tax exemption for biofuels failed
- 2003: EU Biofuel Directive (2003/30/EC)
 - 2 % biofuels in 2005
 - 5,75 % biofuels in 2010
 - not mandatory, deviations should be motivated
 - evaluation due end 2006, mandatory targets considered
- no EU support scheme except for production of energy crops:
 - 1992 reform Common Agricultural Policy (CAP) : introducing set-aside land (obligation for 5-15% of land to leave fallow or use for non-food purposes)
 - 2003 direct energy crop payment € 45 per hectare

Where are we?

Market share of biofuels in EU member states, 2005 (energy content, %)



Source: K. Prins, EC/DG-TREN

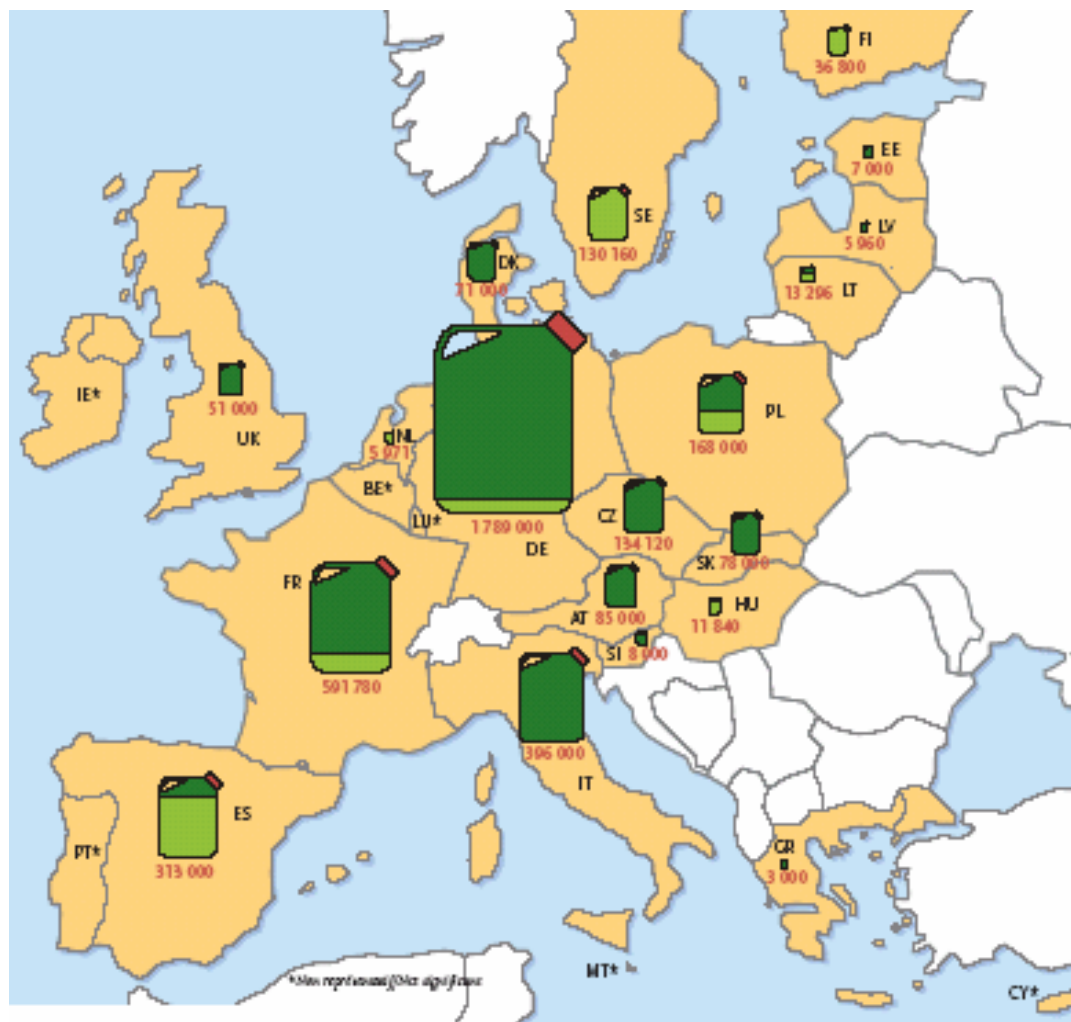
Not yet included: Austria (0.93%), Luxembourg (0.02%), Belgium (0.00%), Denmark, Finland, Greece, and Slovakia (no data)

2005 European biofuel production


Biodiesel
production


Bioethanol
production

Additional imports
of bioethanol from
South America to
Sweden and UK.



Source: EurObserv'ER

Initial development

- Austria: R&D (biodiesel) after first oil crisis, continued in 1980's, commercialisation early 1990's. Several biodiesel technology companies.
- France: research in 1980's, development programme with all stakeholders (farmers, car companies, oil companies) in 1990's.
1992 EU CAP reform caused stimulating biofuel policies.
- Germany: 1990's 'farmers lobbying body' convinced car manufacturers. Greens in the government in 1998 caused stimulating biofuel policies.
- Sweden: bioenergy use since first oil crisis, huge expansion in the 1980's replacing oil for heating and in forest industries. 1991 three-party energy agreement: large support for bioethanol negotiated by 'farmers party'. Green taxation starting 2002.



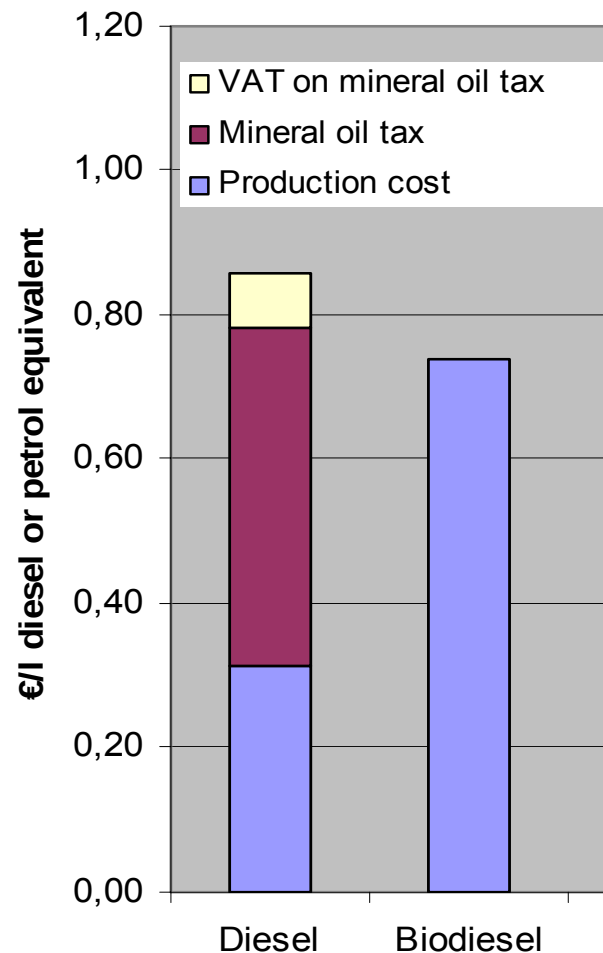
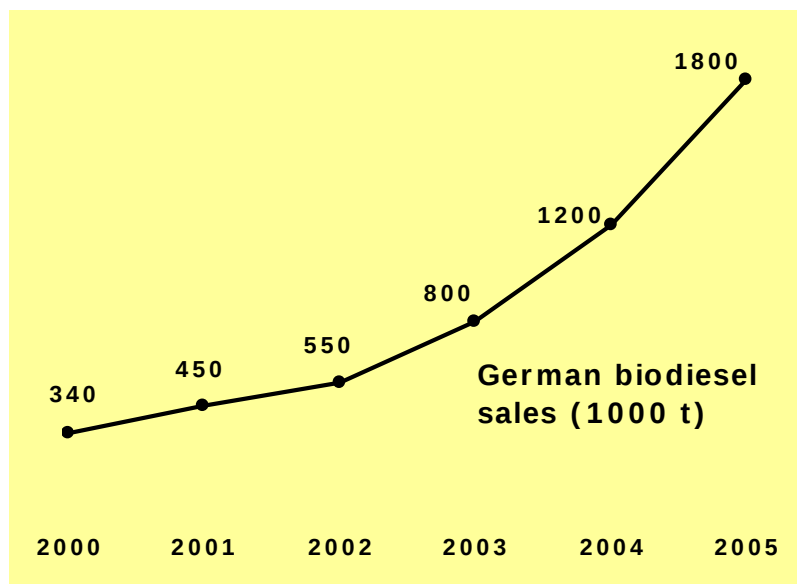
Success factors

- Initiators: active market actors / lobbying groups
 - farmers, agro-industry, (politicians), ...
- Research and implementation consortia
 - covering different parts of the fuel chain
 - involving private sector
- End-user market
 - guarantee for end-users: fuel quality standards, quality control
 - involvement of car industry (pure biofuels) and/or oil industry (blends)
- Policy
 - clear, consistent for a longer period of time
 - financial compensation abridging the gap with fossil fuels
 - range of policy instruments, rather than single measure
 - blends and pure fuels
 - domestic production and imports



German biofuel policy

- pure biofuels were already exempt from tax
- 1999-2002 increasing ecotax for diesel and petrol
- 2004 tax exemption also for blends
- 2005 3,75% biofuels, policy becoming too expensive and unpredictable for state budget



Source:
UFOP

German biofuel policy (cont.)

2007 New policy framework:
from tax exemption to obligation quota

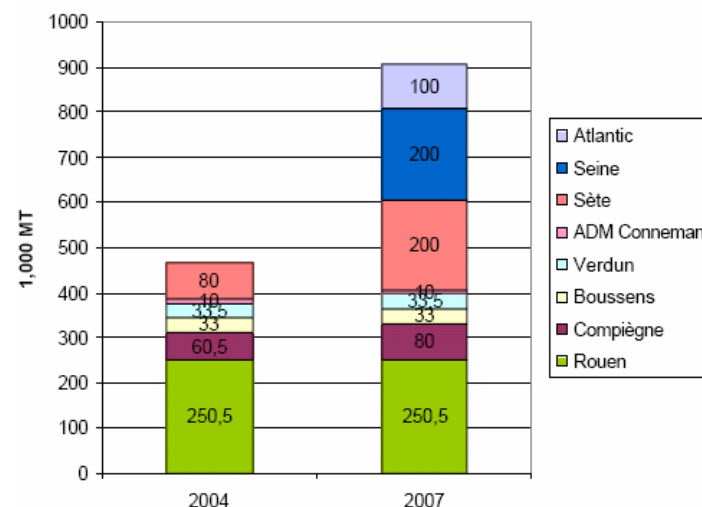
- Obligation for fuel suppliers: from 2007 for blending, from 2009 also total biofuels
- Quota can be traded between suppliers
- Sanctions € 0.60-0.90 per liter biofuel
- Tax exemption for blends abolished
- Tax exemption for pure biofuels gradually reduced: full taxation in 2012
- Biofuels have to meet the quality standards to apply for tax exemption / obligation quota

Year	Total biofuels	Blended in diesel	Blended in petrol
2005	3.75%	2.00%	0.60%
▲ Actual Policy ▼			
2007	-	4.40%	1.20%
2008	-		2.00%
2009	6.25%		2.80%
2010	6.75%		3.60%
2011	7.00%		
2012	7.25%		
2013	7.50%		
2014	7.75%		
2015	8.00%		

Biofuel policy instruments

- agricultural production support (EU level)
- investment subsidies (to be approved by EU)
- subsidies for clean vehicles, free parking
- government/public transportation vehicle fleets
- tax exemptions (with option of tender system)
- obligations

Authorized Biodiesel Production in France



tax exemptions

- effective in early market
- risk of high state budget costs
- overcompensating low-cost producers
- uncertainty of achieving targets

obligations

- not effective in emerging market
- (slight) increase in costs for consumers
- more cost-effective in achieving targets
- more certainty in achieving targets
- limited experience

EU Strategy for Biofuels (Feb 2006)

To prepare for large-scale use of biofuels

Main actions

- stimulating demand
review Directive, stimulate high-blend vehicles
- capturing environmental benefits
ensure sustainability
- developing the production and distribution
rural development programmes
- expanding feedstock supplies
agricultural policy, campaign to inform farmers
- enhance trade opportunities
balanced import approach
- supporting developing countries
develop a coherent Biofuels Assistance Package
- supporting R&D *mainly for 2nd generation biofuels*



Public Consultation Biofuels Directive

- launched to assist the EC's progress report on the Biofuel Directive
- 150 elaborate replies: industry, governments, NGOs, citizens

Outcome

- objective of the Directive still valid, NGOs are skeptical: only if part of integrated energy policy
- 2010 target will not be achieved under current policies and measures
- current system of targets should be changed:
 - inclusion of mandatory targets
 - inclusion of sustainability criteria
 - better harmonisation of targets and measures to create a common market (not supported by Member States)
- targets beyond 2010 required
- concerns by industries competing for same biomass resources

2007 EU Policy Package



- Sustainability, Security of supply & Competitiveness
- at least 20% GHG emissions reduction by 2020
- improving energy efficiency with 20% by 2020
- 20% renewable energy in 2020

Biofuels

- *'only way to reduce oil dependence in transport in next 15 years'*
- *'14% could be expected by 2020'*
- *'need for a minimum and coordinated development of biofuels'*
- *'Legally binding target for Member States combined with freedom to choose the best renewables mix for their own circumstances'*
- proposed binding minimum target for MS: 10% by 2020
- National Action Plans by MS: clear long-term path to meet the targets
- 2007 Renewables legislative package will include specific measures

Thank you

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<http://www.renewable-energy-policy.info/>



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(Report for Network of Excellence Bioenergy)

<http://www.ecn.nl/library/reports/2005/c05042.html>

‘European biofuel policy in retrospect’ (Report for ProBIOS)

<http://www.ecn.nl/library/reports/2006/c06016.html>

‘Biofuels for transport in Europe: Lessons from Germany and the UK’
Energy Policy, Volume 35, Issue 4 (April 2007), pages 2256-2267