

FACT SHEET NO.: Cat -No. / Subcat No. PERFORMED BY: NEA

A GENERAL INFORMATION		
A 1	Category	Efficiency standards & Flanking Measures
A 2	Subcategory	Standards - Environment
A 3	Transport policy measure (TPM)	Biofuels directive (Directive 2003/30/EC) - Introduction of a biofuels quota; bioethanol quota
A 4	Description of TPM	This Directive promotes the use of biofuels in the EU. The Directive stipulates that 5.75% of all transport fuels should be replaced by bio fuels in 2010 and up to 10% in 2020. The ECs general objective is that biofuel should be sustainable. In that sense the intention of the Directive is positive, but the TPM may have some negative side effects, depended upon its implementation. • On the positive side there is the development of biofuel as an alternative to fossil fuels. This will lead to less CO2 emission. Also, new technologies to produce biofuel are being developed. (see WorldBank, 2008, World Energy Council, 2010 & UNCTAD, 2008). • The main challenge is to develop biofuels which do not compete with the food chain. This concerns a negative side of the Directive. For example, Tabeau (2009) indicates that the Directive has an impact on the markets for cereals, oilseeds and sugar. The imports to Europe will grow more than twice. The study shows that domestic prices of biofuel crops and sugar is expected to rise by 25% and 19% respectively.
A 5	Implementation examples	General measure
A 6	Objectives of TPM	The directive stipulates that 5,75% of all transport fuels should be replaced with biofuels by 2010.
A 7	Key changes concerning:	
A 7.1	- Choice of transport mode / Multimodality:	No change
A 7.2	- Origin and/or destination of trip:	No change
A 7.3	- Trip frequency:	No change
A 7.4	- Choice of route:	No change
A 7.5	- Timing (day, hour):	No change
A 7.6	- Occupancy rate / Loading factor:	No change
A 7.7	- Energy efficiency / Energy usage:	Biofuel seems to be more fuel efficient, therefore less fuel is needed
A 8	Main source	Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels and other renewable fuels for transport.

B IMPACTS																																																			
B 1	OVERVIEW ON IMPACTS	<table border="1"> <thead> <tr> <th colspan="13">AFFECTED SEGMENTS</th> <th colspan="2">Geographical level</th> <th colspan="2">Source</th> </tr> <tr> <th colspan="5">Passengers</th> <th colspan="7">Transport operators</th> <th rowspan="2">Employees in transport</th> <th rowspan="2">Residents</th> <th rowspan="2">Economy</th> <th rowspan="2">Public bodies</th> <th rowspan="2">Society</th> <th rowspan="2">1st level</th> <th rowspan="2">2nd level</th> <th rowspan="2">Source of assessment</th> <th rowspan="2">Spatial level of source</th> </tr> <tr> <th>Road</th> <th>Rail</th> <th>Air</th> <th>Public transport</th> <th>Slow modes</th> <th>Road</th> <th>Rail</th> <th>IWW</th> <th>Air</th> <th>Maritime</th> <th>Public transport</th> </tr> </thead> </table>	AFFECTED SEGMENTS													Geographical level		Source		Passengers					Transport operators							Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source	Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport
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B 1.1	Summary	The BioFuels Directive aims at a 5.75% replacement of all fuels by bio fuels in 2010 and up to 10% in 2020. Biofuels have a positive and negative side. On the positive side there is the development of biofuel as an alternative to fossil fuels. Furthermore, CO2 emissions are expected to reduce. Also, new technologies to produce biofuel are being developed. (see WorldBank, 2008, World Energy Council, 2010 & UNCTAD, 2008). Also, there will be more transport for operators, which is positive from the perspective of the transport operators. The main challenge is to develop biofuels which do not compete with the food chain. This concerns a negative side of the Directive. It has some impacts on the food-supply chain. Tabeau et al (2009) show that the Directive has an impact on the markets of cereals, oilseeds and sugar. The domestic prices of biofuel crops and sugar is expected to rise by 25% and 19% respectively (see Tabeau, 2009)																																																	
B 1.2	Summary: Income groups	Lower income groups might be slightly affected by increasing food prices, though it is expected that this is a minor impacts																																																	
B 1.3	Summary: Age groups	No change																																																	
B 1.4	Summary: Disabled people	No change																																																	
B 1.5	Summary: Gender groups	In poor production countries gender inequalities seem to be reinforced according ActionAid. Women are more vulnerable to displacement from uncontrolled expansion of large-scale mono-crop agriculture, due to the fact that women traditionally grow crops for household consumption. Conversion of land might cause displacement of women's agricultural activities to increasingly marginal lands.																																																	
B 1.6	Summary: Ethnic groups	No change																																																	

B 2 TRAFFIC IMPACTS		
B 2.1	Travel or transport time	
B 2.2	Risk of congestion	
B 2.3	Vehicle mileage	
B 2.4	Service and comfort	
B 2.I	Overall impacts on social groups	No change
B 2.II	Implementation phase	No change
B 2.III	Operation phase	No change
B 2.IV	Summary / comments concerning the main impacts	As the volume of biofuel increases, the volume at sea will increase, as well as the imports into the EU. This may lead to extra traffic in ports, both on sea and land side. On the other hand if fossil fuel is replaced (partly) by biofuel, then this will lead to less transported volumes. In the end the two may level
B 2.V	Quantification of impacts	No change

B 3 ECONOMIC IMPACTS		
B 3.1	Transport costs	
B 3.2	Private income / commercial turn over	
B 3.3	Revenues in the transport sector	
B 3.4	Sectoral competitiveness	
B 3.5	Spatial competitiveness	
B 3.6	Housing expenditures	
B 3.7	Insurance costs	
B 3.8	Health service costs	
B 3.9	Public authorities & adm. burdens on businesses	
B 3.10	Public income (e.g.: taxes, charges)	
B 3.11	Third countries and international relations	
B 3.I	Overall impacts on social groups	
B 3.II	Implementation phase	
B 3.IV	Summary / comments concerning the main impacts	The introduction of biofuels is not without debate. Concerns are about food security, food prices, infringement of farmer rights, biodiversity and pollution in third countries. On the other hand, development of new technologies will help to overcome problems. The World Energy Council (2010) states that technology is a key factor to enhance both food and bio-energy production and increase the output without adverse economic and environmental implications.
B 3.V	Quantification of impacts	No further quantified impacts available

B 4	SOCIAL IMPACTS	AFFECTED SEGMENTS														Geographical level		Source			
		Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source
		Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport									
B 4.1	Health (incl. well-being)																				
B 4.2	Safety																				
B 4.3	Crime, terrorism and security																				
B 4.4	Accessibility of transport systems																				
B 4.5	Social inclusion, equality & opportunities																				
B 4.6	Standards and rights (related to job quality)																				
B 4.7	Employment and labour markets																				
B 4.8	Cultural heritage / culture																				
B 4.I	Overall impacts on social groups																				
B 4.II	Implementation phase																				
B 4.III	Operation phase																				
B 4.IV	Summary / comments concerning the main impacts	Especially in third countries negative social impacts (see reference Actionaid below).																			
B 4.V	Quantification of impacts	No quantified impacts available																			

B 5	ENVIRONMENTAL IMPACTS	AFFECTED SEGMENTS														Geographical level		Source			
		Passengers					Transport operators						Employees in transport	Residents	Economy	Public bodies	Society	1st level	2nd level	Source of assessment	Spatial level of source
		Road	Rail	Air	Public transport	Slow modes	Road	Rail	IWW	Air	Maritime	Public transport									
B 5.1	Air pollutants																				
B 5.2	Noise emissions																				
B 5.3	Visual quality of the landscape																				
B 5.4	Land use																				
B 5.5	Climate																				
B 5.6	Renewable or non-renewable resources	↗					↗														
B 5.I	Overall impacts on social groups																				
B 5.II	Implementation phase																				
B 5.III	Operation phase																				
B 5.IV	Summary / comments concerning the main impacts	<p>The environmental impacts concern CO2 emission. A Canadian study indicates that a substitution of 10% into gasoline means a 62% reduction in net greenhouse gas, on a per-litre base. The corn prices will rise by \$ 0,4-0,6 per bushel (see KD communications 2011).</p> <p>The use of biofuels concern mainly road transport.</p> <p>An often mentioned incentive for using biodiesel is its capacity to lower greenhouse gas emissions compared to those of fossil fuels. If this is true or not depends on many factors. Especially the effects from land use change have potential to cause even more emissions than what would be caused by using fossil fuels alone (see KD Communication)</p>																			
B 5.V	Quantification of impacts																				

C REFERENCES

C 1	Other TPMs of this subcategory	
C 2	References	<p>International</p> <p>[1] Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels and other renewable fuels for transport.</p> <p>[2] World Energy Council (2010) - Biofuels: Policies, Standards and Technologies. London: World Energy Council.</p> <p>[3] World Bank (2010) - Advanced Biofuel Technologies. Status and Barriers. Policy Research Working Paper 5411.</p> <p>[4] UNCTAD (2008) - Biofuel production technologies: status, prospects and implications for trade and development. New York/Geneva: UNCTAD.</p> <p>[5] Biofuels: Ethical issues - Nuffield Council on Bioethics (2011)</p> <p>[6] What are the Effects of Biofuels and Bioproducts on the Environment, Crop and Food Prices and World Hunger? - KD Communications (Karen Daynard) and Terry Daynard (2011)</p> <p>[7] Tabeau et al (2009) - Impact of the EU Biofuels Directive on the EU food supply chain. Paper prepared for presentation at the 113th EAEE Seminar 'A resilient European food industry and food chain in a challenging world', Chania, Greece, September 3-6, 2009.</p> <p>[8] ActionAid () Fuel for thought. Addressing the social impacts of EU biofuels policies. Brussels: Actionaid.</p>