# A New Fuel Quality Directive: A new instrument for large-scale agrofuel expansion

## What is the Fuel Quality Directive?

The most recent EU Fuel Quality Directive was passed in 1998, with some subsequent amendments. This sets minimum specifications for petrol and diesel fuels and controls air pollutants from transport emissions, but it does not cover greenhouse gas emissions.

At the end of January 2007, Stavros Dimas, on behalf of the European Commission, published a new draft Fuel Quality Directive which will amend the original one. This draft has three separate aims:

- It introduces a new "greenhouse gas reduction target" for transport fuels. This means that all transport fuels, whether fossil fuels or biofuels, will be given a figure for their life-cycle greenhouse gas emissions. Mandatory accounting of life-cycle emissions will be introduced from 2009. Greenhouse gas emissions will have to be 10% lower in 2020 than in 2010, with either annual or biannual reductions of 1% of 2% respectively. This is similar to new legislation in California (the Low-Carbon Fuel Standard), except that draft Fuel Quality Directive will not support the use of electricity from renewable sources for trains or hybrid cars.

- It changes the legislation on fuel specification and air pollution in order to allow for 10% ethanol blends.

- It reduces maximum permitted emissions of air pollutants and in particular of sulphur.

***The Fuel Quality does not set any targets for reducing overall greenhouse gas emissions in the transport sector. It does nothing to improve the fuel efficiency of cars and it does not aim to reduce fuel use.***

In the press release issued when the draft Directive was published, Stavros Dimas said that this will "open the way for a major expansion in the use of biofuels, especially second generation biofuels".

**Distinguishing between different types of biofuel targets**

***Volume targets:***
A 10% volume target means that, out of 100 million gallons of petrol and diesel, 10 million gallons will be replaced with ethanol and biodiesel.

***Energy content targets:***
Energy content targets are higher than volume targets because it takes more ethanol and biodiesel to get the same energy as from petrol and diesel. Ethanol has 66% of the energy content of petrol, and biodiesel has 90% of the energy content of diesel. This means that, for petrol, at least 13.3 million gallons of ethanol will be needed for every 100 million gallons of fuel in order to meet a 10% energy content target. For diesel, at least 11 million gallons of diesel will be needed for every 100 million gallons of fuel to meet the same target. A 10% energy content target is expected to be in the new Biofuel Directive which will be published in December 2007.

It is possible that an even larger volume of biofuel may be needed to technically meet an energy content target.

***Greenhouse gas reduction targets:***
Greenhouse gas reduction targets, if they are to be met by biofuels, will be higher than either volume or energy content targets. This is because biofuels cannot be classed as achieving 100% greenhouse gas reductions. The original draft of the Fuel Quality Directive suggests that those targets were to be calculated on a volume basis, but an amendment tabled by the parliamentary rapporteur, Dorette Corbey, calls for the target to be calculated per unit of energy. If biofuels were, on average, classed as having 50% less greenhouse gas emissions than fossil fuels, then a 10% target would be calculated as follows (provided it was to be totally met from biofuels):

For 100 million gallons of petrol, at least26.6 million gallons of ethanol would be needed (13.3 million x 2).
For 100 million gallons of diesel, at least 22 million gallons of biodiesel would be needed (11 million x 2).

The assumption that biofuels will be classed as, on average, having 50% less greenhouse gas emissions than fossil fuels is an arbitrary one. If they were classed as contributing to greenhouse gas savings of more than 50%, then a lower volume would be required to meet the 10% target. If they were classed as achieving less than 50% greenhouse gas reductions then a greater volume would be needed. If they were classed as reducing greenhouse gas emissions by 10% then a volume equivalent to all fossil fuel consumption for the EU road transport sector would be required!

Note that this assumes that the 10% target would be entirely met by biofuels, something which the Fuel Quality Directive does not specify. In theory, part of the target could be met by reducing emissions from the production and refining of oil. On the other hand, a shift to more polluting forms of fossil fuels would put an even greater onus on biofuels. It is therefore impossible to calculate the volume of biofuels required under the Fuel Quality Directive.

## What is the context of the Fuel Quality Directive?

At present, the main legislation which promotes rapid expansion in agrofuel use in Europe is the 2003 Biofuel for Transport Directive, which sets an indicative target of 5.75% biofuel use by 2010.

<u>The Biomass Action Plan and the Fuel Quality Directive</u>

In 2005, a Biomass Action plan was agreed by the European Commission (tinyurl.com/38m3nm). It states that the EU should increase the proportion of energy derived from biomass from 69 mtoe in 2003 (or 4% of primary energy consumption) to at least 150 mtoe in 2010. It covers biomass for heat and power as well as biofuels for liquid. The Biomass Action plan calls for national biofuel targets, biofuels obligations, and for 'minimum sustainability standards'. It states: "The Commission is examining the scope for the use of alternative fuels, including biofuels, to count towards $CO_2$ reduction targets for light duty vehicles as part of its review of how to move towards the Community objective of average emissions of 120 g/km". This means that new cars will have to be less fuel efficient than they would need to be if biofuels were not counted towards the CO2 reduction target for cars. The Biomass Action Plan also calls on the EU to "examine how biofuel use can count towards the $CO_2$ emission reduction targets for car fleets", and it states that a new Fuel Quality Directive is needed to allow for higher ethanol blends as well as the use of biodiesel from more different sources. This provides the basis for both the draft Fuel Quality Directive and for a new draft Biofuel Directive, which has not yet been published.

The European Commission has continued to advance this aggressive strategy for biofuel expansion despite being fully aware that there would be "substantial CO2 losses if grassland is ploughed up or forest cleared. These losses can be expected to outweigh CO2 gains from biofuels for many years.", that the planned (and now implemented) abolition of set-asides will harm biodiversity and increase soil erosion in Europe, that water use would increase and that more pesticides and herbicides would be used, particularly for first generation biofuels (tinyurl.com/2xszcl). They were also aware that "growing demand for biofuel feedstocks is likely to seriously increase environmental pressures in some producer countries outside the EU". The same document makes it clear that both a new Biofuel Directive and a revised Fuel Quality Directive will be important instruments for implementing the Biomass Action Plan and for increasing agrofuel use, and that methods should be developed to ensure that agrofuels could be counted towards the EU's commitments under the Kyoto Protocol.

The conclusions of the Biomass Action Plan were adopted by the European Council in June 2006 (tinyurl.com/3xxf2t). The European Council reiterates the need to "examine how the total life cycle of biofuel use can count towards the CO2 emission reduction targets under a global perspective" and to "explore the issue of simple and cost-effective measures to guarantee that biofuels are produced in a sustainable way, inter alia certification, in respect of environmental, social and technical standards, and applying to internal production as well as imported biofuels; in doing so, no technical trade barriers should be created".

At the same time as the Biomass Action Plan was written, the European Commission appointed the Biofuels Research Advisory Council, made up largely of industry representatives, to develop a strategy for increasing agrofuel use in transport (tinyurl.com/22nrwr). Their report strongly supports the measures now contained in the draft Fuel Quality Directive: "High quality of the fuel is an important enabler to comply with stringent emission regulations….In parallel, energy consumption / emission of greenhouse gases should be reduced significantly due to legislation, incentives and increased cost-effectiveness of the transportation means. Reducing greenhouse gases (in particular carbon dioxide) in the transport sector is one of the most important drivers to promote biofuels."

***This means that both the Fuel Quality Directive and the Biofuel Directive are part of an integrated approach demanded by the industries represented on the Biofuels Research Advisory Council, including oil companies, agri-business, the biotech industry and car manufacturers, and by the European Commission – they are complimentary, not rival pieces of legislation.***

<u>Two new and complementary directives to promote agrofuel use in transport</u>

The measures contained in the draft Fuel Quality Directive are part of a range of instruments demanded by the agrofuel industry and lobby. The draft directive was published on 31st January. In March, the EU heads of states decided in favour of a mandatory 10% biofuel target, subject to biofuels being 'sourced sustainably' and to second generation biofuels becoming available. A separate Biofuel Directive is due to be published in December and this is expected to contain a 10% biofuel target by energy content. The European Commission carried out a formal 'consultation' on 'sustainability guarantees' earlier this year, however they did not consult with communities or grassroots organisations in the global South, formally invited only industry, government agencies and Europe-based larger NGOs to respond, and refused to acknowledge that nearly 5,000 individual from North and South has sent standard responses opposing the biofuel target on principle.

Time-table

According to the EU website Euractiv, the Fuel Quality Directive is expected to be debated in the European Council on 30th October, to be voted on in the European Parliament's Environment Committee on 22nd November and to be voted on in the European Parliament plenary on 15th January. It is, however, quite possible that the time-table will be delayed and that agreement will not be reached by mid-January. The Biofuel Directive, on the other hand, will not be published until December and will not be adopted for another year or longer. Also in December, legislation on 'renewable energy' in other sectors will be published by the European Commission, which will include bioenergy for heat and power.

## How will the agrofuel industry benefit from the new Fuel Quality Directive?

The agrofuel industry will benefit from the Fuel Quality Directive in three important ways:

Firstly, as we shall see below, the greenhouse gas reduction target is largely an agrofuel target and will greatly increase demand for biofuels, as the European Commission have made clear.

Secondly, new fuel quality regulations will allow for higher ethanol blends.

And thirdly, developing a methodology (however flawed) for assessing life-cycle emissions from agrofuels is essential if agrofuels are to be counted towards EU countries' commitments under the Kyoto Protocol and any successor agreement.

There is a fourth potentially major benefit for the automobile and agrofuel industry: The EU is currently reviewing the EU Emissions Trading Scheme. At the moment, this only applies to the energy and industry sector. With regards to those sectors, trading is the main mechanism to reduce greenhouse gas regulations (albeit a deeply flawed and ineffective one), whereas, in the transport sector, the European Commission are looking at fuel efficiency regulations, which are opposed by the automobile industry, with plans already having been watered down on the grounds that some of the savings can come from biofuels (tinyurl.com/2k3xz6). Again, this would not be possible without the greenhouse gas life-cycle emission monitoring which the new Fuel Quality Directive will set up. The EU has already agreed to include aviation from 2011 and there is a high chance that road transport will be included after 2012 (tinyurl.com/27y8m9), something the UK government in particular is promoting (tinyurl.com/223vlm). ***Without the life-cycle assessment methodology and the greenhouse gas emission standards created by the Fuel Quality Directive, it would be very difficult, if not impossible to integrate the transport sector into carbon trading.***

## Are the so-called 'greenhouse gas reduction targets' in this Directive biofuel targets – or could they be met in other ways?

The European Commission as well as the Parliamentary Rapporteur, Dorette Corby MEP, have made it very clear that the Directive will result in major biofuel expansion. The greenhouse gas reduction targets will relate only to assumed life-cycle emissions for a given quantity of fuel – this is not about reducing emissions in the transport sector.

If oil and gas supplies were to remain unchanged between now and 2020, then there might be some scope for reducing life-cycle greenhouse gas emissions from fossil fuels overall by improving the energy efficiency of the production and refining processes. The scope for savings, however would be limited. ***Unless there is a significant decrease in fuel use, however, life-cycle greenhouse gas emissions from fossil fuels used for transport are likely to increase in future. If this happens,***

***then biofuels would have to make up an ever larger share of the mix under the draft Fossil fuel Directive.***

**Which fossil fuels release most carbon dioxide when burnt?**

Natural gas releases less carbon dioxide per unit of energy than oil and oil releases less carbon dioxide than coal. Conventional oil is substantially less carbon and energy intensive than unconventional oil, such as tar sands or oil shales. Coal-to-liquids (synfuels) are currently the most carbon-intensive of all liquid fossil fuels. So far, synfuels cannot compete with oil, although in South Africa, existing synfuel refineries appear to be commercially viable without continuing state subsidies (though subsidies helped to set up the refineries).

What will the long-term trends in greenhouse gas emissions from liquid fossil fuels be?

It is impossible to predict future oil supplies and the likely balance between conventional and unconventional fossil fuels between now and 2020, because there is no verified evidence about current oil reserves, and because progress in coal-to-liquids technology cannot be predicted. It is also uncertain how much oil can extracted from oil sands in future years (tinyurl.com/22wfzc). However the use of highly polluting 'unconventional oil' linked to very high carbon dioxide emissions is increasing. Unconventional oil includes heavy oil (as found in Venezuela), tar sands (as exploited in Canada), oil shale, bitumen and deep-water reserves, which are more than 1,000 feet under the seabed.

There are two very clear global trends:

Firstly, ***net energy gains from liquid transport fuels are in decline*** and certain to decline further. Around 1900, it took one unit of energy to gain 100 units of energy from oil. Today, it takes around 20 units of energy for the same amount of energy from oil. For oil sands, the figure is 5:1 (tinyurl.com/22wfzc). This is because the most easily accessible oil which required the least refining was accessed first – new oil reserves tend to be harder to access, require more energy to get the oil out, and often more energy to refine into transport fuel. More and more energy is needed to produce each barrel of oil. Even if consumer demand for fuel was to remain the same, the amount of energy needed to satisfy it will therefore increase. Greater energy remains coupled to greater carbon dioxide emissions.

Secondly, throughout the 1980s and 1990s, the amount of carbon dioxide emitted per unit of energy remained static at the global level, but declined in the 'developed nations'. Carbon dioxide levels were rising at a rate of 1.1% per year, driven exclusively by growth in GDP. Since 2000, however, global carbon dioxide emissions from burning fossil fuels have been rising at more than 3% per year. Part of this rapid increase is linked to "***a cessation or reversal of earlier declining trends in the energy intensity of GDP (e) and the carbon intensity of energy***" (tinyurl.com/ywcfqr). This means that carbon dioxide emissions per unit of energy were declining until about 2000 and are now rising again. This reflects a global shift from gas to coal as an energy source.

Both trends are highly likely to continue between now and 2020.

What is the scope for reducing emissions from oil refineries and production?

Refineries are responsible for about 10% of life-cycle greenhouse gas emissions from oil. European oil refineries have been improving their energy efficiency by about 1% per year on average. Some refineries have cut their carbon dioxide emissions more substantially, however, by switching from

coal and in particular from oil to natural gas (tinyurl.com/26nmfd). Throughout the industry/energy sector, however, there is now a shift from gas to coal, linked to global gas supply constraints. If this wider trend cannot be reversed, then it would make little difference to overall emissions whether oil refineries were to use a greater share of the overall gas supplies – this might simply displace coal use to another sector.

The oil industry warns that stricter rules on sulphur emissions, also contained in the draft Fuel Quality Directive, will result in greater energy use and carbon dioxide emissions from the refining process. This is backed up by the International Energy Authority (tinyurl.com/yumw2q). However, rules on 'cleaner fuels' will continue a trend which, in the past, has still allowed for 1% annual energy efficiency gains, i.e. it will only make a limited contribution.

In March 2007, a well-to-wheels assessment was published by the Joint Research Council, Eucar (a European car manufacturers' association) and Concawe (a European oil industry association) (http://tinyurl.com/27xpb4). According to this assessment, carbon dioxide emissions from oil production vary between 2.8 and 3.9g CO2eq/MJ, depending on conditions in different production areas and oil wells. The most easily accessible oil would have the lowest CO2 emissions during production.

***There may be limited scope for reducing carbon dioxide emissions from refineries, however global constraints on gas supplies could lead to increased emissions if refineries switch from gas to oil or even coal as a power source.***

Could the new Fuel Quality Directive end gas flaring?

Globally, there has been a shift away from gas flaring and towards capture of methane for energy use and, in some cases, re-injection into reservoirs. However, there are notable exceptions, the main one being in Nigeria, where 2.5 billion cubic feet of gas per day were flared during oil production in 2005 (tinyurl.com/2fftkw). Gas flaring releases large amounts of carbon dioxide and methane, which is 23 times as powerful a greenhouse gas over the course of a century. Gas flaring in Nigeria has contributed more to global warming than all other sources in sub-Saharan Africa combined – and it has devastating impacts on human health, communities and the Nigerian environment. It is not only environmental NGOs who have demanded an immediate end to gas flaring – the Nigerian courts have ruled it to be illegal. The Nigerian government have promised to enforce a ban on gas flaring from 2008 (tinyurl.com/yoeu75). NGOs including Friends of the Earth have been calling for corporate accountability legislation in the EU and member states. ***It should not take greenhouse gas reduction targets to incentivise companies to abide by the law, and companies should be compelled to end gas flaring well before the new Fuel Quality Directive comes into effect.***

Can other alternative fuel sources meet at least part of the target?

**Electricity** for hybrid cars which comes from renewable sources will not count towards the greenhouse gas reduction targets.

**Hydrogen** may be counted towards the target if an amendment by Dorette Corbey is adopted. However, hydrogen itself is not an energy source, and could result in higher or lower life-cycle carbon dioxide emissions compared to oil, depending on which energy source is chosen. Greenhouse gas reductions would be possible if hydrogen from natural gas were to replace oil. This, however would require major investment into production, storage and distribution of hydrogen. There are no investment plans on the scale required in Europe. The European Commission have proposed research funding of just 470 million euros, which is the equivalent of

665 million dollars, (tinyurl.com/343muj). By comparison, one estimate of the cost of setting up the infrastructure for supporting 200 million hydrogen cars is more than $1 trillion, or $5,000 per car (tinyurl.com/yqtgds).

**Natural gas (LPG and CNG)** will count under the target. Compressed natural gas and liquefied petroleum gas, however, have well-to-wheels emissions which are slightly lower than those of petrol but at best the same as those of diesel (tinyurl.com/ywecc5). This means that greenhouse gas reductions from a greater uptake of those fuel sources will be minimal. Italy is the only European country with a substantial number of LPG cars.

**Biogas from waste:** Biogas, just like LPG and CNG, can only be used in specially adapted cars. Biogas production is currently substantially more expensive than biodiesel or ethanol production. Biogas from manure, sewage and municipal waste would deliver greenhouse gas savings, but the capital cost of producing biogas for transport fuel is very high and investors are favouring ethanol and biodiesel over biogas. According to the above-quoted report by the Joint Research Council, Eucar and Concawe, "the availability for making transport fuel is much less than the availability for energy use".

***The potential of alternative fuels (not agrofuels) to contribute to the greenhouse gas reduction target appears to be very limited. There is no significant source of truly 'low carbon fuels'.***

## Will the Fuel Quality Directive ensure that only environmentally sustainable biofuels with a positive greenhouse gas balance are used?

This is the stated aim of the draft Directive. However, there is strong evidence that meeting those aims will be impossible, regardless of whether proposed amendments to allow the European Parliament to determine the basic methodology are adopted.

No mechanism for 'sustainability guarantees' has been proposed which

- has been developed with the involvement and support of people and communities who will be directly affected by agrofuel production, mainly in the global South;
- can deal with the indirect impacts of agrofuel production on land use and, thus on ecosystems and the climate and on communities;
- will stop imports of agrofuels from any source, however unsustainable;
- will be both effective and to be compatible with the World Trade Organisation rules and bilateral/multilateral free trade agreements.

For a full discussion about the inherent flaws in the proposals for 'sustainability standards', see the Discussion Paper by Corporate Europe Observatory, the Transnational Institute and Grupo de Reflexion Rural (tinyurl.com/2qntwy).

One of the amendments proposed by Dorette Corbey MEP would ensure that not just certification by voluntary stakeholder forums, but also 'bilateral agreements' between governments should suffice for 'proving' that biofuels have been sustainably produced. The 'sustainability safeguard' proposals are clearly not based on any analysis of their effectiveness as policy instruments, nor have they the support of the people and communities whose livelihoods will be most directly affected by biofuel expansion.

There is equally strong evidence that greenhouse gas standards for agrofuels are meaningless and not based on full systemic scientific assessment. Life-cycle greenhouse gas emissions are calculated according to micro-studies, which ignore all indirect impacts, and which also ignore the possibility of accelerating feedbacks from ecosystem destruction – i.e. the possibility that ecosystems (such as the Amazon rainforest) can collapse completely once it has been damaged beyond a certain point. There is little scientific consensus about calculating emissions even in micro-studies. Whilst all life-cycle assessments of rapeseed biodiesel have suggested a positive greenhouse gas balance, a recent study by Paul Crutzen et al (tinyurl.com/2s5lur) suggests that nitrous oxide emissions have been underestimated and that rapeseed biodiesel has up to 70% more greenhouse gas emissions than fossil fuel diesel. For a full discussion about the problems with 'greenhouse gas standards', see the recent paper by Biofuelwatch (tinyurl.com/3aoumo).

The draft methodology on carbon reporting under the Renewable Transport Fuel Obligation in the UK (tinyurl.com/22pn7m) shows how unrealistic default values for life-cycle greenhouse gas emissions can be: Biodiesel from Indonesian palm oil, for example is presumed to have lower life-cycle greenhouse gas emissions than any biofuels produced in the UK – even though palm oil expansion is happening fastest in Indonesian peatlands and drainage of South-east Asia's peatlands leads to the emission of around 60 to 100 tonnes of CO2 per ha/ year, according to researchers at Wetlands International (tinyurl.com/28fhpe).

Most importantly, though, there is no evidence that any substantial EU target for agrofuel use could be met in a sustainable, climate-friendly way. The amount of sustainable agrofuels which actually reduce greenhouse gas emissions once indirect impacts are taken into account is likely to be small. And, as Renton Righelato and Dominick Spracklen show in their recent article "Carbon Mitigation by Biofuels or by Saving and Restoring Forests" (Science, Vol 316, 17th August 2007, p.902), any possible greenhouse gas savings from using land for agrofuels are smaller than those which could be obtained by allowing natural vegetation, and in particular natural forests, to recover on the same land.

## How can the transport sector contribute towards overall greenhouse gas reductions?

The transport sector accounts for 21% of greenhouse gas emissions in the EU and emissions in this sector have been growing faster than in any other sector in Europe. As discussed above, there is no realistic prospect of curbing emissions through 'low-carbon fuels'. In theory, sustainable renewable electricity for hybrid cars or electric trains could reduce greenhouse gas emissions, however emission savings would be greater if the same renewable energy was used to replace coal for heat and power generation. In any case, those energy sources are not supported by the Fuel Quality Directive.

Emission reductions will have to come from reductions in fuel use. Neither the European Commission nor the biofuel industry have expressed any intention to curb fuel use: The European Commission's "Energy and Transport Outlook to 2030" states that EU transport fuel use is expected to grow by 31.6% between 2000 and 2030, a figure which includes expected major improvements in fuel efficiency (tinyurl.com/2qocxh). Even if it was possible to reduce life-cycle emissions from transport fuels by 10% by 2020, greenhouse gas emissions from the sector would still be rising, according to the European Commission's projections. The expectation of continued growth in transport demand is reiterated in a 2006 European Commission working document (tinyurl.com/2xszcl) and also in the Final Report of the Biofuels Research Advisory Council (tinyurl.com/22nrwr).

***The Fuel Quality Directive is thus part of an EU transport strategy which expects greenhouse gas emissions from transport to continue growing until at least 2030. At the same time, it will result in very significant additional emissions through the production of agrofuels, i.e. through the destruction of ecosystems which are carbon sinks, and through an increase in global nitrous oxide concentrations.***

Strict mandatory fuel efficiency standards, mandatory enforced speed limits and government policies to reduce traffic levels and in particular private car use and aviation are the only ways of reducing greenhouse gas emissions from the transport sector, and none of those are part of the EU strategy (except that weak mandatory fuel efficiency standards from 2012 have been proposed).

## Conclusions:

1. The Fuel Quality Directive is part of a wider strategy to significantly increase the use of agrofuels as well as other types of agroenergy, laid down in the Biomass Action Plan. It is complementary to the expected new Biofuel Directive.

2. The main impact of the Fuel Quality Directive will be increased demand for agrofuels, both by allowing for higher ethanol blends and by creating a greenhouse gas target which will primarily be a biofuel target.

3. There are no reasons to believe that greenhouse gas emissions from fossil fuels can technically be reduced between now and 2020, because of the long-term underlying trends towards lower net energy gains and more carbon dioxide emissions per unit of energy.

4. There are no substantial sources of 'low-carbon fuels'.

5. There is no evidence that, once indirect impacts, including land use change and indirect nitrous oxide emissions are considered, large-scale agrofuels can reduce greenhouse greenhouse gas emissions. There is strong evidence that they will significantly increase such emissions and thus accelerate global warming.

5. The Fuel Quality Directive is part of a wider EU transport strategy which foresees an overall growth in greenhouse gas emissions from that sector between now and 2030. It thus cannot be considered as a credible attempt at climate change mitigation. Worse than the use of agrofuels will be greatly boosted and is likely to significantly increase global greenhouse gas emissions.

6. If calls to include the transport sector and thus agrofuels into the EU Emissions Trading Scheme after 2012 succeed, then the measures contained in the Fuel Quality Directive (in particular the standard life-cycle greenhouse gas emission assessments) would be essential.

# Q&As:

***Q: Is the draft Fuel Quality Directive a 'rival' to the Biofuel Directive, drafted by the Environment Commissioner, one which aims to move EU policy towards a stronger focus on reducing greenhouse gas emissions?***

A: No, a European Commission document from 2006 makes it clear that both directives are an integral part of implementing the Biomass Action Plan and achieving a large-scale increase in agrofuel use in Europe. They are complementary.

***Q: The Fuel Quality Directive puts the emphasis on reducing greenhouse gas emissions from transport, whereas the Biofuel Directive is expected to simply set a fixed target for biofuels. Should this be welcomed?***

A: No, all the evidence suggests that agrofuels overall accelerate global warming and that there is no scientific basis for calculating greenhouse gas reductions from agrofuels, particularly not if systemic studies were done which look at all direct and indirect impacts.

***Q: Would the biofuel industry not prefer a 10% target, rather than having to rely on greenhouse gas emission standards, which are promoted by the Fuel Quality Directive?***

No, the industry and the European Commission have consistently called for both. An explicit 10% biofuel target will send a strong signal to markets and investors and will encourage large-scale investment in new plantations and refineries across the world. A greenhouse gas reduction target, on the other hand, is essential for Europe to be able to count agrofuels towards Kyoto targets and for the biofuel industry and the transport sector to be integrated into the carbon markets. There are proposals for including the transport sector in the European Emissions Trading Scheme from 2012. The new Fuel Quality Directive will set up a full methodology for calculating the life-cycle greenhouse gas emissions of all transport fuels by 2011 at the latest, which will be essential if the transport sector, and biofuels in particular, are to become part of the EU-ETS.

***Q: Are greenhouse gas reduction targets for transport fuel a way of ensuring that the transport sector makes a contribution to reducing climate change emissions?***

No, because there has never been an intention to take the macro-life-cycle emissions from biofuel production into account, and because the new draft Fuel Quality Directive does nothing to reduce the demand for fuel. As the easily accessible, easy-to-refine 'sweet light crude oil' is declining, more energy is needed to get oil out of the ground and to refine it, and companies are moving into very polluting 'unconventional oil' sources such as oil shales and tar sands. This means that life-cycle emissions from transport fuels will rise overall. Many countries are looking to develop more efficient coal-to-liquids production which again will greatly boost carbon emissions.

The amount of agrofuels which would be needed to counter this trend over coming decades could make the destruction of most of the world's rainforests inevitable and would substantially increase global nitrous oxide levels. Maintaining today's fuel use for transport will make catastrophic global warming inevitable. Both a move to unconventional fossil fuels, as conventional oil declines, and a massive expansion of agrofuels at the expense of ecosystems are likely to trigger runaway global warming even faster. The only answer is a drastic reduction in fuel use.

(Note: The term 'runaway global warming' is used in the 'common language' sense, i.e. to describe self-reinforcing climate change, where warming itself will trigger further warming in a process which humans will not be able to stop. This would happen for example if temperatures rise enough to melt substantial amounts of methane hydrates, or if ecosystems were to die back on a large scale and release the carbon they store. The scientific term for this scenario is actually 'hysteresis', with scientists defining 'runaway global warming' as a 'Planet Venus' effect where temperatures continue to rise until all water has evaporated from the planet's surface.)

***Q: Some NGOs may call for the 10% greenhouse gas reduction target to be reduced so that biofuels will not have to make up too large a share. Can a lower target, together with certification, prevent negative impacts?***

Biofuels are already having a major impact on communities, food prices and food sovereignty, on global warming, deforestation, biodiversity, soil and water with a global market penetration of just

over 1%. Any suggestion that, say, a 3% or 5% market share could and would be met sustainably is not based on evidence.

Nobody can predict how much biofuel would be needed to meet any particular target in 2020. We could estimate how much biofuel would be needed to meet the 10% greenhouse gas reduction if oil supplies remained exactly what they are now between now and 2020. As they will not, nobody can predict what the oil markets will look like by 2020, so we just cannot predict what the life-cycle emissions for transport fuels will be in future and how many biofuels will be needed to reduce the total. If the current rush to more polluting fossil fuels continues (which is inevitable without major demand reductions and/or major new oil field discoveries), then even a small greenhouse gas reduction target could translate into a very large biofuel target.

***Q: If environmental NGOs were to oppose the Fuel Quality Directive, would they not be seen as being in alliance with the oil industry, since the European Oil Industry Association, Europia, also opposes it?***

A: Europia oppose the draft Fuel Quality Directive, though not a 10% target in a new Biofuel Directive, whilst the European Automobile Manufacturers Association (ACEA) welcomes the Fuel Quality Directive. Neither industry supports demand reduction or strict fuel efficiency standards. Opposing both the new Biofuel Directive and the Fuel Quality Directive whilst calling for regulations and policies which will significantly reduce fuel use in Europe is a very different position from that taken by the oil industry.