



European Federation for  
TRANSPORT and ENVIRONMENT

## BACKGROUND BRIEFING

### The revised Fuel Quality Directive

December 2008

## A drive for cleaner transport fuels

This short briefing aims to give an overview of the environmental implications of the revised Fuel Quality Directive. An informal agreement was reached on the directive on 25 November following 'trialogue' discussions between the Commission, European Parliament and representatives of member states. The agreement is still subject to formal votes in both the Parliament and the Council.

### GHG emissions reductions

#### Scope

The law applies to all energy supplied to road transport, inland waterway transport, non-road mobile machinery, and diesel for trains. Energy for electricity used by trains is excluded. Fuel suppliers will be obliged to annually report on the carbon intensity of their fuels and the energy supplied for road transport. The baseline for GHG reductions will be defined on the basis of life cycle emissions in the year 2010. By that time the carbon intensity of fuels sold in the EU may change.

#### Legally binding 6% lifecycle GHG reduction

##### Principles

The Parliament and the Council have agreed on a 6% mandatory lifecycle GHG reduction target for fuel suppliers by 2020 (article 7a of the directive) as well as intermediate targets of 2% by 31 December 2014 and 4% by 31 December 2017. Greenhouse gases include CO<sub>2</sub>, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

Lifecycle greenhouse gases of fuels include gases emitted during exploration, refining, distribution and combustion of the fuels. Combustion CO<sub>2</sub> emissions (about 85% of current lifecycle emissions), cannot be influenced by the supplier. The law implies that the remaining 15% need to be cut to 9% - roughly a 40% cut in non-combustion emissions. Fuel suppliers can choose how to achieve this:

- through using different crudes (cutting out tar sands and coal to liquid which require enormous amounts of energy to extract and process, ...)
- through cleaning up exploration (less flaring, venting, ...)
- through better refineries (more efficient, co-firing with biomass, ...); or
- through supplying biofuels or other alternative fuels such as LPG (Liquefied Petroleum Gas) or CNG (Compressed Natural Gas).

The baseline year is 2010 – essentially every reduction that is done to that date does not count, only improvements between 2010 and 2020 are relevant.

##### *What does it mean in practice?*

Biofuels will deliver a part of the 6%. How much is not clear. This depends on the amount of 'sustainable' biofuel we will have in the baseline year (2010) and the average climate performance of these biofuels in 2020. The issue of biofuel ghg reductions still hangs in the balance primarily because it is not yet clear how indirect land use change (ILUC) will affect the GHG savings of biofuels.

Assuming 1% 'sustainable' biofuels in 2010, 10% 'sustainable' biofuels in 2020 with an average GHG saving of 50% in 2020, a 4.5% saving would come from biofuels. CNG and LPG will not do much, so 1.5% would need to be 'filled' by the oil industry. Note that this calculation relies heavily on assumptions.

##### *Review*

Despite its legally-binding character, the 6% target will be reviewed in 2014, taking into account consistency between this target and the 10% transport target in the Renewable Energy Directive. The reason for this is uncertainty regarding GHG savings of biofuels due to the eventual inclusion of methodology to calculate the impacts of ILUC.

### Non-binding 4% GHG reductions

#### Principles

An additional, non-binding, 4% GHG reduction should come from other measures, namely 2% from electric vehicles or Carbon Capture and Sequestration (CCS) and 2% from Clean Development Mechanism (CDM) credits in the fuel supply sector, which effectively means global flaring and venting reductions.

##### *What does it mean in practice?*

Gas flaring or the burning of natural gas wastes a valuable clean energy resource and emits carbon dioxide. The gas flared annually is equivalent to 30 per cent of the European Union's gas consumption. For the past 20 years, overall global flaring has been increasing despite initiatives to stop it.<sup>1</sup>

<sup>1</sup> The latest World Bank Global Gas Flaring Reduction (GGFR) data showed that based on satellite monitoring the global amount

The potential for flaring and venting reductions is huge. If world wide reductions in flaring and venting relating to oil products would be counted towards the obligation, the annual potential for savings would be about 100 MT CO<sub>2</sub>eq, which is an equivalent to the 10% GHG reduction target in article 7a. The 2% target, as suggested in the FQD, provides an incentive for oil companies to reduce flaring and win the twin benefits of complying with FQD and the EU Emissions Trading Scheme, under which they have to reduce their emissions.

The potential of electrification for reaching the FQD target will depend largely on the way electricity will be accounted for. Methodology for this will be defined at a later stage and will have to be consistent with the Renewables Directive.

#### *Review*

The 4% additional targets will also be subject to a review in 2012 and they might become mandatory at the later stage, depending on the evaluated potential of different technologies.

## Ethanol waiver

### *Principles*

Member States with low ambient summer temperatures (Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Sweden and the United Kingdom) may permit during the summer period the sale of petrol with a maximum vapour pressure of 70 kPa. Other Member States may apply ethanol waiver of 60 kPa plus maximum 8 kPa.

In order to be granted one of these derogations, a Member State will have to apply to the Commission that will evaluate environmental and health consequences of higher vapour pressure, in particular the impact on compliance with EU air quality legislation.

### *What does it mean in practice?*

Higher vapour pressure limits result in higher release of volatile organic compounds (VOCs), which are major contributors to ground level ozone formation. The original legislative proposal implied that ethanol will be responsible for additional diseases and fatalities relating to ozone, and represented a politically dangerous trade-off between biofuels and air quality. The trade-off was unnecessary because low- RVP alternatives to ethanol exist (i.e. by converting ethanol to ETBE). It is also discriminatory, because the waiver is to be given only to ethanol and not to other potential low-RVP alternatives from biological sources, and is in stark contrast to the well-established policy principle of technology neutrality.

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of flared gas has risen from 155 billion cubic metres (bcm) in 2005 to 162 bcm in 2006. Most of the global estimates up to now are based on 150 bcm or 400 million tons (MT) of CO<sub>2</sub> in annual emissions (GGFR 2008).

Moreover, many countries do not reach their obligations for ozone concentration as specified in the Air Quality Directive. In the latest EEA report on ozone pollution in the summer of 2007 it is stated that the directive's long-term objective to protect human health (maximum ozone concentration of 120 microgram/m<sup>3</sup> over 8-hours) was exceeded in the EU and other European countries. The target value for human health protection was also exceeded in a significant part of Europe (Technical report No 5/2008, EEA).

With the safeguards relating to air quality now attached to the ethanol waiver, only Member States that meet their air quality standards will be able to apply this waiver. However, many things will depend on how the evaluation of Member States' applications will be conducted by the Commission.

## Sulphur reduction obligations

Sulphur limits are set at a very low level of 10 ppm. This is a step in the right direction and of primary importance for exhaust aftertreatment technology for NO<sub>x</sub> and particles.

## Methylcyclopentadienyl manganese tricarbonyl additives (MMTs)

### *Principles*

Metallic additives were sadly not prohibited for the EU market, although this was the preferred option of the European Parliament and the majority of Member States. The reason for the last-minute decision against the ban, were concerns from the Commission that the EU might get involved into a WTO trade dispute. The final agreement limits MMTs to 6 mg Mn per litre from 1 January 2011 and to 2 mg from 2014. Furthermore, the Commission will have to conduct a risk assessment of the use of metallic additives for health and environment, while Member States will have to develop labelling for fuels that contain MMTs.

### *What does it mean in practice?*

The use of metallic additives is not a very important issue in the EU, because only a few countries still use them. However, fuel quality standards adopted in the EU always send an important signal to the rest of the world. An EU ban of MMTs would send an important signal to Asian countries, where advanced fuel quality monitoring systems are not widely available, which makes monitoring the level of metallic additives difficult.

## Further information:

T&E Website:

[www.transportenvironment.org/pages/low-carbon-fuels/](http://www.transportenvironment.org/pages/low-carbon-fuels/)

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