

Q&A: Reducing transport fuel emissions

Implementing the Fuel Quality Directive (Article 7a)

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Why does the EU want to reduce greenhouse gas emissions from fuels?

The big picture is that in March 2011, the European Commission's White Paper on transport committed to a 70% cut in carbon emissions from transport compared with 2008, and a 20% cut by 2030.¹ Transport is the only sector that has seen its emissions increase over the past two decades. Under business-as-usual projections transport GHG emissions are expected to grow by 74% by 2050² (from the 1990 level).

As well as improving the efficiency of vehicles, it is also necessary to reduce the emissions that result from the extraction, production, processing and distribution of the fuels themselves. As there are wide variations between different sources of fuels in terms of the energy used and emissions associated with their extraction and production, the policy is a smart way of promoting the cleanest fuels over dirty ones.

What does Article 7a of the Fuel Quality Directive (FQD) do?

Earlier versions of the EU's fuel quality law were designed to reduce health-damaging pollutants such as sulphur. Article 7a of the revised FQD, agreed in 2008-9, for the first time obliges suppliers to reduce the lifecycle greenhouse gas 'intensity' of transport fuel by 6% by 2020 compared with 2010. The directive also obliges suppliers to report information, from 2011, on the greenhouse gas intensity of the fuel they have supplied, to authorities designated by the member states of the EU.

The 6% reduction can be achieved through the use of biofuels, renewable electricity and a reduction in the flaring and venting of gases at the extraction stage of fossil fuel feedstocks.

What is the Commission proposal from October 2011 all about?

When EU laws are passed, many important details are left to be decided upon in a process called 'comitology'. Due to its technical and opaque nature, this process can lead to decisions with major implications being taken without much external scrutiny. The October 2011 comitology proposal from the European Commission is necessary to enable implementation of Article 7a. It establishes a methodology for the calculation of the GHG intensity of fossil fuels and the electricity used in electric vehicles as well as the baseline from which GHG reductions should be measured.

What are 'default values'?

The agreed baseline is based on calculations by the oil industry's 'CONCAWE' body. The oil industry estimate that, on average, producing one megajoule of energy for transport fuel causes 88.3 grammes of CO₂.

According to the Commission's proposal, different fuels and sources of fuel (or 'feedstocks' as they are known) get different 'default values' for their carbon intensity.

The default value for petrol made from conventional crude oil in the proposal is 87.5 g CO₂/MJ. Petrol made from natural bitumen (i.e. tar sands) = 107 g CO₂/MJ; shale oil = 131.3 g CO₂/MJ; coal-to-liquid = 172 g CO₂/MJ; gas-to-liquid = 97 g CO₂/MJ.

What if a producer can do better than the default value, do they still get a 'dirty' label?

No. The proposal also contains an option to report *actual* rather than default values for those

¹ European Commission, COM(2011) 144 final – White Paper: Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system

² Skinner, I., et al. (2010). EU Transport GHG: routes to 2050? – Towards the decarbonisation of the EU's transport sector by 2050

fuels that have higher default values than conventional oil. The purpose of this is to reward cleaner production processes, so for example tar sands projects with carbon emissions better than the default value can use this option.

The proposal also includes incentives to reduce harmful emissions from flaring and venting of gases during the oil extraction process (very common in Nigerian oil fields for example). Companies that invest in practices that limit flaring and venting after the FQD enters into force can count this to their GHG reduction target.

This differentiation enables to account more accurately for the greenhouse gas impact of these different feedstocks on the achievement of the 6% greenhouse gas savings target set out in Article 7a.

What revisions are planned?

The current proposal envisages a review of the proposed methodology by 31 December 2015 at the latest. The review will address the effectiveness of incentivising GHG reductions and the impact on the refining sector and the supply of petroleum feedstocks to the EU. The accuracy and reliability of reporting will also be reviewed. The proposals also include the possibility of allowing additional default values for higher GHG intensity conventional sources, once the data has been established and if it is proven to be scientifically warranted. Furthermore, the review will allow existing default values to be adjusted in line with the latest scientific and technical information.

What will it take for the October 2011 implementing measures proposal to become law?

The procedure for the adoption of these measures is the so-called 'comitology with scrutiny'. This means that the proposal has to be adopted by a qualified majority vote in a committee of technical experts of EU member states. After the adoption, the European Parliament has three months to exercise scrutiny, which means that they can approve or veto the proposal in its entirety by qualified majority. The Parliament cannot propose amendments. Previous engagement shows that there is a wide cross-party support in the European Parliament for the proposal with differentiated GHG values for high carbon fuels, including tar sands and shale oil.

Is Canadian oil being unfairly targeted?

No. The proposal does not discriminate between feedstocks on the basis of geographical locations.

The specific default value for tar sands is not just in place for Canadian products, but for all fuels that are produced from tar sands anywhere in the world. Other countries with vast tar sand deposits include Venezuela, Russia and the US. Conventional oil from Canada will get the same default value as conventional oil from the US, Russia or any other place.

Why do tar sands get a separate default value?

An important reason that tar sands get a specific default value now is that they are produced from a different feedstock, so-called natural bitumen. Producing petrol and diesel from this feedstock requires much more energy than producing it from conventional crude oil, which in turn means that the carbon intensity of the final product is higher than that produced from conventional crude. In the Directive, natural bitumen is defined in a technology neutral way, based on its density and viscosity.

What are the Commission's figures for tar sands based on?

The value of 107 g CO₂/MJ is based on the industry average for tar sands production that could be processed in EU refineries. The figure comes from a peer-reviewed study that was financed by the European Commission and written by Professor A. Brandt from Stanford University. A similar study was also done to determine the carbon intensity of shale oil. The figures from both studies were also discussed at the stakeholders meeting organised by the Commission's Climate department. The figures were not challenged.

The study found that tar sands are 23% more GHG intensive than the average for conventional crude currently used in the EU. This is a suitable value to assign. A recent review of 13 scientific studies³ found tar sands fuels to be 18 to 49% more GHG intensive than the proposed EU default value for conventional oil.

³ NRDC (2010). GHG Emission Factors for High Carbon Intensity Crude Oils
http://docs.nrdc.org/energy/ene_10070101.asp

According to the Stanford University study, “GHG emissions from oil sands production is significantly different enough from conventional oil emissions that regulatory frameworks should address this discrepancy with pathway-specific emissions factors that distinguish between oil sands and conventional oil processes.”

Has the EU chosen to ignore other high carbon sources, such as Nigerian and Russian oil produced with lots of gas flaring?

No. While environmental NGOs would like to see stricter rules, the proposal does actually reward reductions in flaring and venting. It does so by awarding credits to producers that reduce flaring and venting. These credits can be used for compliance towards the 6% GHG reduction target. The verification has to be done at a project level.

In fact, the GHG intensity of tar sands is consistently higher in comparison with conventional oil. This means that this higher GHG intensity stems from natural characteristics of this feedstock and is not due to inappropriate management practices that are used when extracting oil with flaring.

According to the ICCT: “In general, production of oil from tar sands results in higher GHG emissions than from conventional crude, even from fields that flare natural gas”.⁴

In a global market, won't tar sands just end up being sold to countries outside Europe?

This proposal, if implemented, will give a signal to fuel suppliers that the market value of their products depends on their carbon intensity. Fuels with higher carbon intensity can still be exported to other countries such as China, but at a lower price, which will make it less attractive to produce compared with low carbon fuels.

This is not the first time the EU has set quality standards for products entering its market. It did so previously for lead in petrol, and for sulphur in petrol and diesel, for example. These measures also led to a price differential between cleaner and dirtier fuels, making it more attractive to make cleaner fuels and less attractive to make dirtier fuels. Setting standards for carbon footprints will work in a

similar way. It will also lead to price differentials based on carbon footprints, and hence higher production of low carbon fuels and lower production of high carbon fuels.

California also has a low carbon fuel standard that works in a similar way. Other regions around the world are likely to follow, as they have on other fuel quality issues.

Will other sources of fuel just become more expensive with no environmental benefits?

The proposal will make attainment of the 6% GHG target of Article 7a cheaper, not more costly.

First, this proposal opens up an additional avenue for compliance. If all petrol and diesel from fossil sources is treated the same, compliance can probably only be achieved through blending in biofuels or supplying low carbon electricity. Offering lower-carbon fossil fuel and opportunities to count the reductions of flaring towards the target becomes an option too with this law.

Second, it is logically impossible to claim that the proposal will lead to large price differentials between low and high carbon fuels on the one hand, and that such large price differentials will have no environmental impact on the other hand.

The exact price differential is difficult to predict but it will be the mechanism of price differentials between low and high carbon fuels that will spur investment in low carbon fuel and deter investment in high carbon fuel.

Could Canada bring a case at the World Trade Organization for discriminatory trade practices?

Canada would be unlikely to win a case at the WTO. Tar sands would most likely not be considered “like products” to conventional crudes and therefore no unlawful discrimination exists under Article I and III of GATT.

Even if this hurdle can be overcome, the Canadian government bears the burden of showing that tar sands receive less favourable treatment vis-à-vis conventional crudes under Article III of GATT. Moreover, the European Union has proceeded in good faith, backed by the best available scientific evidence, and the reporting measures are rational and justifiable.

⁴http://www.theicct.org/pubs/ICCT_crudeoil_Europe_Dec2010.pdf

Therefore, to the extent any discrimination is found to exist, the reporting measures are permissible under the Article XX(g) of GATT, which allows countries to adopt trade-restrictive measures relating to the conservation of exhaustible natural resources.

Will all this just add too much regulatory complexity?

Reporting is already required under the FQD and is necessary to determine the carbon intensity of the transport fuel provided by fuel supplier. The proposal represents a well-structured and common-sense approach that relies on information readily available to suppliers: the feedstock source. It also provides flexible mechanisms for calculating carbon intensity using default values or an actual value if suppliers prefer to show their fuel performs better.

The Commission ensured that the administrative burden is minimal, as they will only require the annual reporting of the imported mix. Establishing a certification system or reporting batch-by-batch will not be necessary for the purposes of this legislation. Furthermore, several more ambitious reporting systems already exist, i.e. in Canada and the US. For example, US producers already report to their national authorities the API gravity, the country of origin, and feedstock stream (market) name. In Canada production of unconventional oil (i.e. tar sands) and conventional oil extraction is reported separately, as it takes place in with different production methods.⁵

⁵ For more about the administrative issues, see our separate technical briefing: www.transportenvironment.org/Publications/prep_hand_out/lid/655