

17 January 2013

Summary briefing

Report on sustainable alternatives for land-based biofuels in the European Union

Putting EU green transport policy back on track

European countries are ramping up biofuel use in an effort to meet their obligations under EU objectives to decarbonise energy in the transport sector. But green transport targets for 2020 in the renewable energy directive (RED) and fuel quality directive (FQD) have largely served to incentivise damaging technologies, in particular unsustainable “land-based biofuels” [1].

The RED requires EU countries to replace 10 percent of the energy used for road and rail transport from renewables, while the FQD requires fuel suppliers to reduce the carbon intensity of fuel by 6 percent by 2020.

Greenpeace, Transport & Environment, the European Environmental Bureau and BirdLife Europe have commissioned environmental research institute CE Delft to examine genuinely sustainable solutions for

the decarbonisation of Europe's transport energy sector. The report [2] examines a range of scenarios to meet the RED and FQD targets without or with significantly less land-based biofuels than currently in use, including conservative estimates of the potential of sustainable biofuels.

The report shows how EU transport energy policy could reduce its reliance on damaging biofuels. This alternative vision for the transport sector in 2020 would cut CO₂ by 205 million tonnes, compared to just over 60 million tonnes under a recent proposal [3] from the European Commission to adjust existing policy [4]. It would allow EU countries to meet their targets while avoiding the displacement of food production to new land, increased carbon emissions and continued habitat destruction caused by land-based biofuels.

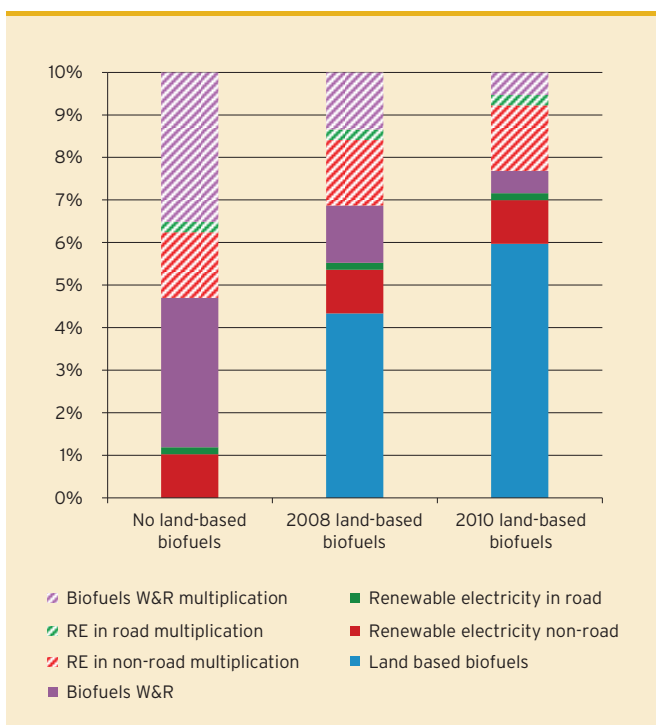
A pathway to greener transport includes:

- Energy savings in the transport sector of 15 percent by 2020, through measures such as improved vehicle efficiency and a shift of transport from road to rail. Reducing energy demand will also lower the amount of renewable energy required to fulfil the renewable transport target.
- The immediate accounting of indirect land use change emissions from biofuels under the EU's renewable energy directive and fuel quality directive.
- A robust cap limiting the use of land-based biofuels to current levels and a pathway towards near zero usage by 2020.
- An increase in the use of renewable electricity in road and rail transport to over 1 percent (152 petajoules) of overall demand by 2020.
- The consumption of about 3 percent of non-land-based, sustainable biofuels from waste and residues in 2020 (350 petajoules), consisting mainly of biomethane from agricultural waste and biodiesel from waste fats.
- In the production of oil-based transport fuels, a significant reduction of greenhouse gas emissions from oil and gas flaring and venting.

Alternative Scenarios

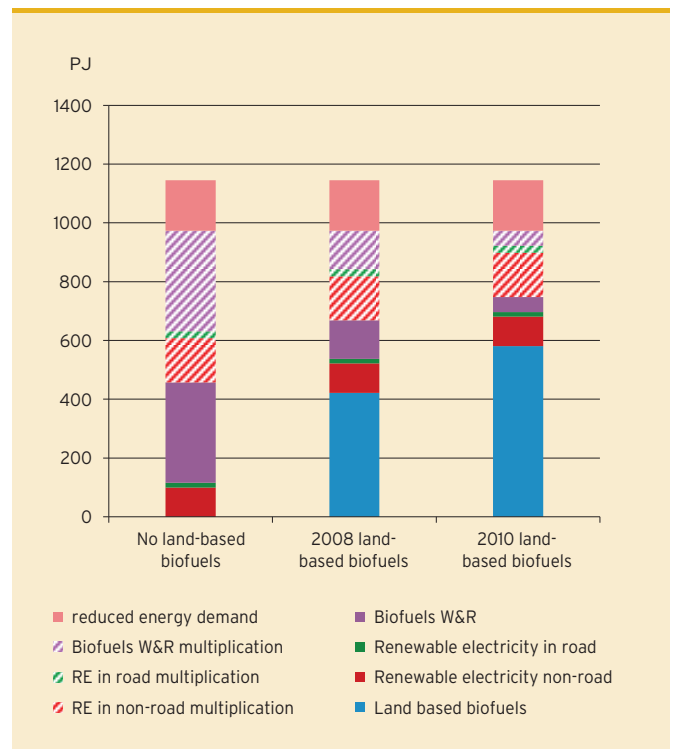
An energy scenario for the EU road and rail transport sector with close to zero land-based biofuels is possible and can contribute to a significant decarbonisation of the transport system in the EU. It includes an increase in energy efficiency, the speeding up of the electrification of the vehicle fleet and environmental safeguards are put in place for biofuels from waste and residues. This is the only scenario which completely avoids both direct and indirect land use changes from biofuels, and their negative environmental and social effects.

Renewable energy mix to meet the 10 percent RED target by 2020



Assuming an ambitious, but achievable 15 percent reduction of energy use in the road and rail transport sectors, the report explores the renewable energy mix options to meet the 10 percent RED target by 2020 and assesses the feasibility of these options. It compares three scenarios using the amount of land-based biofuels as a variable: i) no land-based biofuels, ii) 2008 consumption level of land-based biofuels, iii) 2010 consumption level of land-based biofuels. In line with the existing policy framework, biofuels from waste and residues are counted twice towards the RED target, and renewable electricity in road is counted two and a half times. The two and a half multiplication factor for renewable electricity in road is extended to non-road modes, such as rail, to ensure equal treatment.

What this means in terms of actual volumes of renewable energy and energy reduction needed



Contribution of the renewable energy mix towards the 6 percent FQD target

The contribution of the renewable energy options proposed in the report would reduce fuel carbon intensity by 3.1-4.3 percent. The remaining 1.7-2.9 percent, required to achieve the FQD target of 6 percent, would be delivered by other measures in the fossil fuel supply chain, such as reduced emissions from flaring and venting during oil production.

On the wrong track

The European Commission has acknowledged that unsustainable land-based biofuels often deliver only limited carbon savings and in some cases have an even higher carbon footprint compared to conventional fuels like petrol and diesel (see chart below). This is because the production of these biofuels requires vast amounts of agricultural land, thereby displacing food production. The process also contributes to habitat destruction such as deforestation and peatland clearance, resulting in increased carbon emissions. These negative impacts, known as indirect land use change (ILUC), have been confirmed by multiple studies commissioned by the Commission and several scientific institutions [5].

Large scale land conversion for biofuel production (both direct and indirect) also has a significant impact on biodiversity. A recent study by the EU's Joint Research

Centre [6] estimated that land use change due to biofuel demand created by EU biofuels policy will reduce biodiversity (animal and plant species) in converted areas by an average of about 85 percent. Other social impacts include land-grabbing, food price volatility and food insecurity in developing countries [7].

The European Commission's proposal to revise EU biofuel policy

In October 2012, the European Commission published its long-awaited proposal to address the ILUC impacts of biofuels. The proposal does not require governments or fuel suppliers to account for indirect emissions from biofuels but instead proposes a five percent "cap" on the amount of biofuels made from agricultural crops. However, this "cap" does not limit the consumption of biofuels in Europe, but merely limits the quantity that member states can count towards the RED transport target.

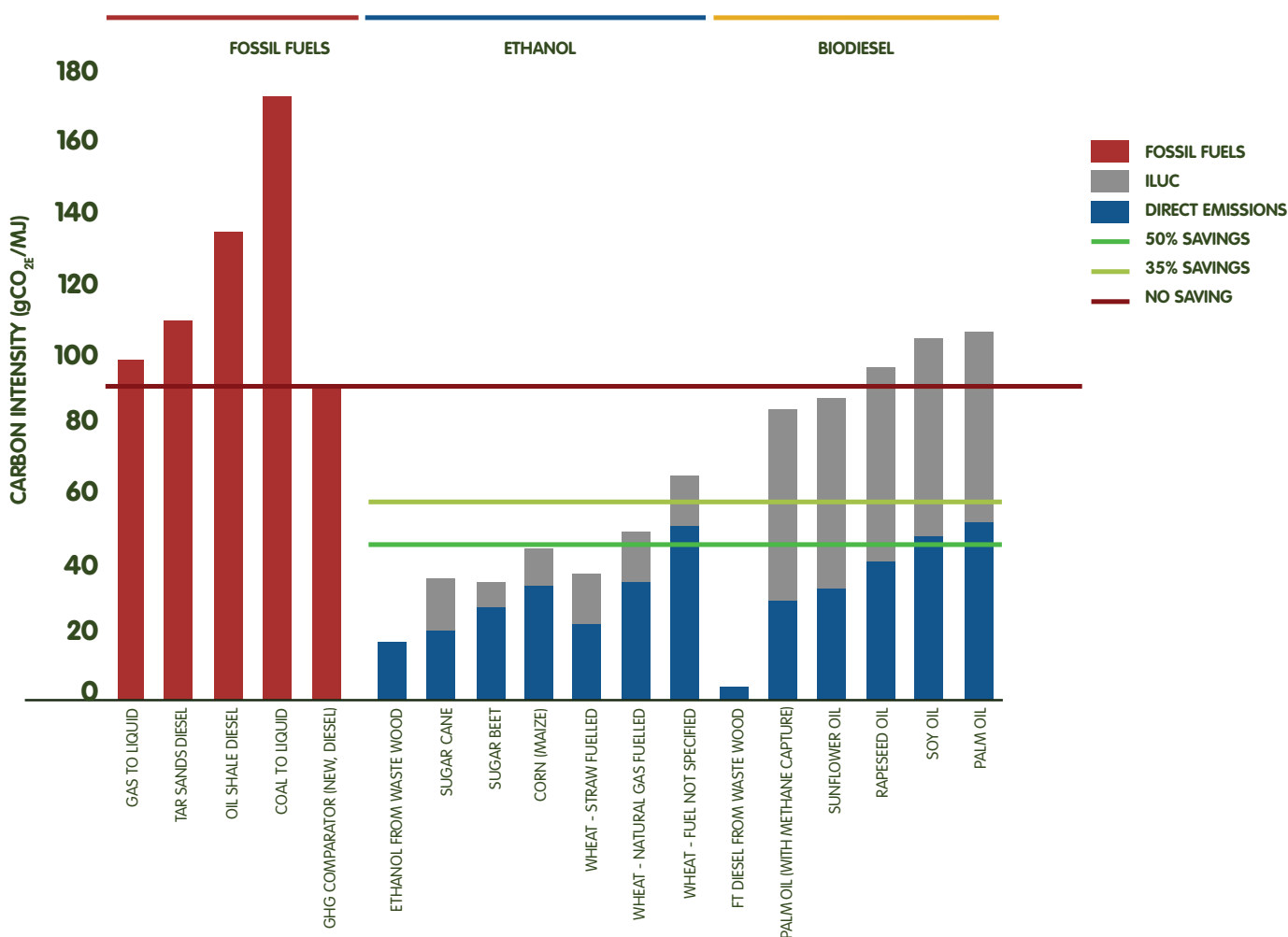
This means that in 2020, more than 5 percent of energy consumption in the road and rail transport system could come from unsustainable land-based biofuels without any guarantee that they actually reduce carbon emissions.

Another key element of the proposal is the quadruple counting of non-land-based biofuels (from waste and residues) towards the 10 percent RED target, meaning that one unit of biofuels from waste and residues will be counted four times towards the target instead of twice under the current system. This will increase carbon emission savings on paper only.

The way forward: change of policy strategy and focus

It is essential that the European Parliament and the Council of Ministers amend the Commission ILUC proposal and reject harmful land-based biofuels. Emissions from ILUC should be accounted for under both the RED and

Real CO₂ emissions from biofuels (with ILUC)



The fossil fuel values are taken from Article 7a of the fuel quality directive; the direct emission values are taken from Annex V of the renewable energy directive; the ILUC values are taken from: International Food Policy Research Institute (IFPRI), Assessing the land use change consequences of European biofuel policies, October 2011

FQD and strict sustainability safeguards should be established for biofuels from waste and residues.

The CE Delft report clearly illustrates that the RED and FQD targets will not be met sustainably without new and revised policies that will increase energy efficiency and speed up the uptake of renewable electricity and the development of sustainable fuel alternatives such as biofuels produced from waste and residues. In addition significant reduction of GHG emissions from oil and gas flaring and venting should be pursued. Of all the measures, energy efficiency is the most important way to

decarbonise transport swiftly, which is why it should be prioritised and pursued diligently.

Meanwhile, the EU and its member states should phase-out direct and indirect support for land-based biofuels and adopt a trajectory from current consumption levels towards near-zero use in order to prevent further environmental and social damage. The transport sections of the National Renewable Energy Action Plans for each EU country should be redrafted to focus on genuinely sustainable solutions for the decarbonisation of their transport energy sector.

Notes to editors:

- [1] Land-based biofuels are produced from crops or fruits that are grown on agricultural or silvicultural land, as opposed to biofuels produced from waste and residues.
- [2] CE Delft, December 2012. Sustainable Alternatives for Land-based Biofuels in the European Union: Assessment of options and development of a policy strategy. Authors: Bettina Kampman, Anouk van Grinsven and Harry Croezen. Report commissioned by Greenpeace, Transport & Environment, BirdLife Europe and European Environmental Bureau. Available at <http://www.greenpeace.org/eu-unit/en/Publications/2013/CE-Delft-Report/>, press release available at <http://www.greenpeace.org/eu-unit/en/News/2013/CE-Delft-PR/>.
- [3] http://ec.europa.eu/energy/renewables/biofuels/doc/biofuels/com_2012_0595_en.pdf
- [4] CE Delft, "A brief assessment of the proposed methodological changes for the RED and FQD", November 2012, available at www.greenpeace.org/eu-unit/en/Publications/CE-Delft-additional-memo
- [5] Available at http://ec.europa.eu/energy/renewables/studies/land_use_change_en.htm
- [6] JRC Technical Notes, Estimate of GHG emissions from global land use change scenarios, Appendix II, pages 31-32, http://iet.jrc.ec.europa.eu/sites/default/files/documents/scientific_publications/2011/technical_note_eu24817.pdf
- [7] FAO, IFAD and WFP (Joint statement 4 September 2012) Tackling the root causes of high food prices and hunger, <http://www.fao.org/news/story/en/item/155472/icode/>

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Press release: <http://www.greenpeace.org/eu-unit/en/Publications/2013/CE-Delft-Report/>

Report: <http://www.greenpeace.org/eu-unit/en/Publications/2013/CE-Delft-Report/>

Additional memo: <http://www.greenpeace.org/eu-unit/en/Publications/CE-Delft-additional-memo>

Briefing: <http://www.greenpeace.org/eu-unit/en/Publications/2013/CE-Delft-Briefing/>