

## **Biomass and Biofuels in the Renewable Energy Directive**

**Almuth Ernsting, January 2009**

### **Summary: Main provisions**

1.  
By 2020, 20% of all energy used in the EU has to come from ‘renewable sources’<sup>1</sup>, including biomass, bioliquids and biogas. This translates into different targets for individual Member States. An ‘indicative trajectory’ is introduced, i.e. Member States have to show that they are increasing their use of ‘renewable energy’ over every two-year period. This comprises all types of energy use, though with a cap on the amount of aviation fuel which taken into account.
2.  
By 2020, each Member State must ensure that 10% of total road transport fuel comes from ‘renewable energy’, defined to include biofuels<sup>2</sup> and biogas, as well as hydrogen and electricity from ‘renewable energy’. The vast majority of this is expected to be met from biofuels. There are no sub-targets, no interim targets, and no provisions that the 10% target will be reviewed at any time.
3.  
A very small list of a few purely environmental ‘sustainability standards’ will apply to biofuels and biogas for transport and to liquid biofuels for heat and power. There are no social, not even basic human rights standards and most environmental aspects are also being ignored. There will be no genuine verification scheme. Instead, whether or not the small list of standards is complied with will be assessed on the basis of company information, or through voluntary certification schemes, or through the existence of bilateral and multilateral agreements. The European Commission will, by the end of 2009, report on whether they propose any ‘sustainability standards’ for solid biomass and biogas for heat and power. There is no obligation on them to propose any such standards.

### **Questions and Answers**

#### **How much of the 10% ‘renewable energy for transport’ target can we expect to be met by sources other than biofuels?**

A very small proportion, even though any electricity from ‘renewable energy’ used in cars (not trains) is multiplied by 2.5 when counting it towards the 10% target:

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<sup>1</sup> Throughout the briefing, the terms ‘renewable energy’ and ‘greenhouse gas savings’ are written into quotation marks to highlight the fact that some types of energy classed as ‘renewable’ by the EU is highly unsustainable and not truly renewable (such as agrofuels and agroenergy from large-scale monocultures), and that assumptions made by the EU about ‘greenhouse gas savings’ are very different from scientific evidence about true greenhouse gas emissions associated with agrofuel production.

<sup>2</sup> The term ‘biofuel’ rather than ‘agrofuel’ is used throughout the text because this is a summary and interpretation of legislation and this is the term used in the RED.

\* Biogas (which very often is also produced from large-scale monocultures, such as maize in Germany) can only be used in vehicles that can also run on natural gas. The highest proportion of cars that can run on natural gas or biogas can be found in Italy, and even there it is only 1% ([tinyurl.com/9me8yz](http://tinyurl.com/9me8yz)). Biogas production for heat and power is expanding rapidly, but there are currently no signs that it will play a major role in transport.

\* Hydrogen: Hydrogen cars would require very major investment in storage and supply stations, and there are no plans for such an investment, either by governments or by companies in the EU.

\* Electricity: Both plug-in hybrid cars and fully electric cars are currently absent from the EU market. Although some car manufacturers intend to produce such cars for Europe, there are no indications of any major shift away from combustion engines. Full electrification of trains would be possible, however even if that was to happen and if the proportion of rail in total transport was to rise steeply, renewable energy for trains is unlikely to account for more than 1% of the 10% target.

### **How much extra land will be needed to grow biomass as a result of the Renewable Energy Directive?**

This is impossible to say, except that meeting the legislation will require very large-scale land-use change.

There have been different attempts to estimate how much land will be needed to meet the 10% target. The European Environment Agency's Scientific Committee, for example, has stated that the target cannot be sustainably met in Europe, will require significant imports which, they warn, will be difficult or impossible to monitor with regards to 'sustainability' ([tinyurl.com/4sj4x9](http://tinyurl.com/4sj4x9)). However, the 10% target is just for transport. It is additional to the increasing share of biomass in the heat and power sector. The overall 20% target itself is not broken down and any type of 'renewable energy' can count towards it. However, biomass expansion for heat and power is strongly encouraged and Member States must report to the European Commission every two years, not just on overall progress in the use of renewable energy, but also on availability and use of biomass for energy.

The expansion of renewable energy – from 6.7% in 2005 to 20% in 2020 can be expected to lead to a very major expansion in bioenergy use for heat and power. At present, two-thirds of all 'renewable energy' in the EU comes from biomass and, between 1990 and 2005, biomass accounted for 80% of the increase in 'renewable energy' use ([tinyurl.com/6zerpd](http://tinyurl.com/6zerpd)). The second biggest source of 'renewable energy' in the EU-27 is large hydro power, accounting for two-thirds of 'renewable' electricity.

There has been no assessment of what a rapid scaling up of biomass uses for heat and power will mean on top of the 10% renewable energy target for transport.

### **Will the sustainable sourcing of biofuels be guaranteed?**

In short, no. Sustainability standards and additional reporting requirements are discussed in detail below. The sustainability standards are confined to a very small number of environmental criteria. There are no social criteria. Even biofuels directly

associated with serious human rights abuses can be classed as 'sustainable'. There is no requirement to protect soil, water or air, to safeguard agro-biodiversity or to protect ecosystems such as savannahs or secondary forests. Even the protection of peatlands has been watered down through a definition that appears to leave serious loopholes.

Moreover, there will be no meaningful verification scheme. 'Verification' will be based on self-reporting by companies, or on the existence of bilateral or multilateral agreements, or on voluntary certification schemes. Most biofuel refineries in Europe use mixed feedstock bought on the open market, yet there are no provisions for any fully independent auditing of the supply chain and none for auditing conditions on plantations.

### **Are there any guarantees that biofuels promoted under the RED will result in greenhouse gas savings?**

There will be no meaningful or effective guarantees. There is overwhelming evidence that virtually all biofuels are worse for the climate than the fossil fuels which they replace. This is backed up by peer reviewed studies which consider indirect as well as direct climate impacts. Joseph Fargione, lead author of one of those studied, published in Science states: "From a climate change perspective, current biofuels are worse than fossil fuels" because they cause high carbon emissions from land use change. This, according to Fargione, does not simply apply to some feedstocks: "All the biofuels we use now cause clearing of natural ecosystems for agriculture" ([tinyurl.com/6z8yzk](http://tinyurl.com/6z8yzk)). So how will the very large volumes of biofuels required under the RED meet the requirement that they must result in at least 35% 'greenhouse gas savings'?

Firstly, the EU will try and sign bilateral and multilateral agreements and, if those are signed, it can simply be assumed that all biofuels from certain countries result in at least 35% 'greenhouse gas savings', no matter where or how they are produced.

Secondly, as discussed under 'sustainability standards' above, all of the information on land-use change emissions will be provided by companies, without any external auditing, except for auditing by auditors chosen and paid for by the companies themselves. Companies which buy feedstock on the open market will have very minimum information in the first place.

Thirdly, indirect land use change emissions will be ignored, unless the Commission propose otherwise and even then they will be ignored until at least after 2012, and until 31.12.2017 for most biofuels refined in installations which opened before 31.12.2012. Furthermore, they will always be ignored where bilateral and multilateral agreements apply, although those are supposed to give 'consideration' to measures taken to address indirect impacts, without specifying what that should mean in practice. While indirect land-use change emissions will be completely or mainly ignored, presumed 'positive indirect impacts' from biofuel co-products<sup>3</sup> are taken into

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<sup>3</sup> Co-products would include dried distillers grain with solubles (DDGS) which is left over from ethanol production and which can be used for animal feed. It is presumed that using DDGS will replace, for example, soya and that therefore less soya will be produced and there will be less emissions from soya production as a result. Those presumed 'savings' will be

account. This “creative accountancy” makes apparent ‘greenhouse gas savings’ possible.

The default values used, which ignore land-use change emissions, were changed at the last minute, resulting in increased ‘greenhouse gas savings’ specifically for sugar beet (those were increased). There is no evidence that this was based on any new scientific findings or changes in agricultural practices.

### **Could additional European Commission proposals or reviews at any stage mitigate some of the serious impacts of biofuels under the RED?**

The European Commission successfully opposed many of the sustainability standards and other amendments put forward by the European Parliament’s ITRE Committee with a view to mitigating negative impacts of the 10% target. In future, no amendments will be possible except for very limited ones which only the European Commission is allowed to propose. The main ones are:

- possible sustainability criteria for solid biomass and for biogas for heat and power (proposals by 31.12.2009);
- possible new ‘sustainability standards’ relating to air, soil or water, but only if those are deemed to be compatible with the WTO and other trade agreements (proposals by 31.12.2012);
- possible measures to address (some) indirect land use change greenhouse gas emissions when calculating ‘greenhouse gas savings’ (proposals by 31.12.2010);
- possible changes to default values used for ‘greenhouse gas savings’ (based on reports by 31.12.2012 and two-yearly thereafter).

In 2014, the Commission will present a review which will address:

- a review of the minimum ‘greenhouse gas savings’ that should apply from 2017;
- a review of the cost-efficiency of different measures taken to implement the 2010 target;
- a review of the possibility of reaching the target while ensuring sustainability. This must include a review of the impact of the target on food availability and prices.

There are no obvious provisions for a review of the 10% target itself.

### **Can Member States do anything themselves to ensure that biofuels of biomass linked to environmental destruction, evictions, human rights abuses, etc. are not supported?**

As far as biofuel imports are concerned, Member States cannot go beyond the ‘standards’ of the RED, which exclude most environmental and all social sustainability aspects.<sup>4</sup> For solid biomass and for biogas for heat and power, the legislation does allow Member States to introduce their own policies, however if the European Commission introduces proposals for ‘sustainability standards’ for those types of bioenergy, the RED could be amended.

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attributed to biofuel production.

<sup>4</sup> See Article 15.6 and also the preamble to the RED, which states that Article 95 of the EC Treaty applies to articles 15, 16 and 17 of the RED.

**Does this mean that Member States which have drafted or passed legislation regarding the sourcing of biofuels or bioliquids for heat and power will be unable to implement them?**

Yes, once the RED comes into force, from 2010, such regulations could no longer be enforced, otherwise Member States would risk legal action in the European Court. This applies, for example, to the amended German Renewable Energy legislation (EEG) agreed in 2008.

**Can consumers use the reporting requirements under the RED to find out which companies sell biofuels that have been deemed to not comply with the very minimum ‘sustainability standards’ under the RED, or which companies use particular feedstocks, such as palm oil?**

No information relating to particular companies will be made available to the public. Only summary reports will be published.

**Are there any further ways in which the RED boosts biofuel or solid biomass use, in addition to the targets and the fact that Member States will have no power to regulate biofuel sourcing?**

Yes. Firstly, Member States will have a duty to ‘inform’ the public about the “environmental benefits” of all biofuels for transport which fall under the RED (Article 21). This means that governments will have to promote virtually all types of biofuels as ‘sustainable’ regardless of the extensive evidence (including scientific evidence) to the contrary.

Secondly, it is recommended (though not made compulsory) that Member States set up simplified planning procedures for all “renewable energy” projects (Article 22). This could make it considerably more difficult for people to oppose planning applications for biofuel refineries or biofuel power plants – such as palm oil CHP plants, many of which have met with local resistance in Germany, for example.

**Does the Renewable Energy Directive promote biofuels for aviation and/or shipping?**

The 10% biofuel target applies to “land transport” only. Aviation fuel and fuel used in shipping is taken into account when calculating Member States’ overall energy use, important for calculating the 20% ‘renewable energy’ target. The amount of aviation fuel considered is ‘capped’, which means that for states with a high aviation volume, the full aviation fuel will not be taken into account. Any quantity of biofuels used for aviation would count towards the 10%, which means it will be deducted from the 10% target which needs to be fulfilled by ‘land transport’. Any biofuel use for aviation and shipping would thus not be additional to the 10% target. (Article 3.4)

**Could peat-burning end up being supported to meet some of the 20% renewable energy target?**

During the RED negotiations, Finland put forward an amendment that peat should be classed as a renewable energy source. This was rejected. However, also rejected were two amendments proposed by the European Parliament's ITRE Committee, one to specifically exclude peat from that definition, another to ensure that only those types of energy defined as 'renewable' by the Intergovernmental Panel on Climate Change or by Eurostat (both of which exclude peat) should be used. We are currently awaiting advice on whether there may be a risk that some Member States could determine peat to fall under the definition of 'biomass', and we hope to update this paragraph shortly.

The European Commission still has the option of recommending to specifically exclude peat from the definition of 'biomass' when reporting on possible sustainability standards for solid biomass.

### **Are biofuels from waste and second-generation biofuels treated differently from others?**

Biofuels made from wastes, residues, and (so far non-existent) non-food second generation (i.e. solid biomass to liquid) biofuels count double towards the 10% target and Member States can give additional support to such biofuels if they are more expensive to produce. (Article 21)

### **Detailed briefing about sustainability standards and reporting requirements for biofuels under the Renewable Energy Directive**

The RED was first announced at the EU Spring Summit in 2007, with the "promise" that a 10% biofuel target would be reliant on the EU being able to ensure that the biofuels would be produced sustainably and that second-generation biofuels would become available. The European Parliament's ITRE Committee proposed a series of amendments to the original Commission proposal, to introduce a relatively comprehensive list of 'sustainability criteria', without, however, proposing how those could be credibly verified and implemented. Nearly all of those amendments were ultimately deleted.

The RED contains a very minimum list of 'standards' which exclude most aspects of environmental sustainability and all social aspects. It even allows biofuels directly linked to human rights abuses to be classed as 'sustainable'. Furthermore, even for those 'standards' there will be no robust verification system and instead 'proof' will be based on company information, on 'compliance' with a variety of voluntary certification agreement, and on bilateral and multilateral agreements. Standards currently only apply to biogas and biofuels for transport and liquid biofuels for heat and power (all referred to as 'biofuels' below, unless stated otherwise).

#### "Sustainability standards"

The standards apply to biofuels which count towards one of the RED targets, as well as to any biofuels subsidised by Member States. Biofuels which do not meet those standards can still be sold and used, they just cannot be subsidised and counted towards the 10% or 20% targets. For some types of biofuels from waste (other than

from agricultural, forestry, aquaculture of fisheries residues), only greenhouse gas reduction requirements apply.

The following standards apply to biofuels

- Greenhouse gas savings classed, under the RED, as being at least 35%. From 2017, a 50% reduction shall apply and, from 2018, a 60% reduction to biofuels refined at installations that opened in or after 2017. However, the increase in the threshold beyond 35% is subject to a review by the Commission in 2014 and to new proposals which they can submit.

- Biofuels sourced from the following 'high-biodiversity value' lands are excluded:

- a) primary forest and other native forest with no visible indications of human activities and no significant disturbances – this leaves biodiverse secondary forests and most forests which are being sustainably used by communities unprotected;
- b) areas legally designated for nature protection;
- c) areas recognised by IUCN, international agreements or intergovernmental organisations as being important for the protection of rare, threatened or endangered ecosystems or species, unless feedstock production does not interfere with nature protection. However, according to Article 17(3), the Commission has the discretion to decide which of the areas recognised as protected nature areas by international agreements or by the IUCN will fall under this provision, and there will be appeal mechanisms;
- d) highly biodiverse natural grassland, which maintains natural species composition, to be defined by the European Commission;
- e) highly biodiverse non-natural grassland which is species-rich and not degraded, unless harvesting is necessary to preserve grassland status, to be defined by the European Commission.

- Biofuels sourced from land classed as having had high carbon stock in January 2008 and which no longer has this status are excluded. This covers:

- a) Wetlands, defined as land that is waterlogged for a significant part of the year;
- b) Land which is more than one hectare in size with trees higher than 5 metres and canopy cover of more than 30%, unless trees, once fully grown, are expected to meet those requirements;
- c) Land which is more than one hectare in size with trees higher than 5 metres and canopy cover of 10-30%, unless it can be shown that greenhouse gas conditions would be fulfilled even if the land was converted. This legitimises the conversion of many areas of biodiverse wooded savannah.

- Biofuels sourced from land that was undrained peatland in January 2008, if biofuel production involves drainage. According to Wetlands International, this definition could lead to attempts to class 95% of South-east Asia's peatlands as being eligible for biofuel production under the RED because they have been partly, and often shallowly drained (for example by companies involved in illegal logging) – even though plantations require deeper drainage and thus major greenhouse gas emissions ([tinyurl.com/7xfu2z](http://tinyurl.com/7xfu2z)). On the other hand, the definition of wetlands can be said to apply to at least many shallowly drained peatlands.

- Biofuels sourced from the EU must meet environmental and agricultural requirements and standards laid down in previous Council Regulation.

Reporting requirement on wider sustainability aspects:

Companies shall report on measures taken to protect, soil, water and air, to restore degraded land, and to avoid excessive water consumption in water stressed areas. They shall also report on social standards. This is a mere reporting requirement and there is no obligation for any standards to be met.

Member states will provide a summary of the information to the public and to the Commission. No information about specific companies will be published.

Based on this information, the Commission shall report every two years, from 2012, on

- a) national measures taken in significant biofuel producer countries within and outside the EU regarding to ensure that the ‘sustainability standards’ are met;
- b) national measures taken to protect soil, water and air;
- b) social impacts, including food prices and availability, particularly in developing countries, on wider development issues and land rights issues;
- c) whether producer countries have ratified and implemented relevant ILO Conventions, the Cartagena Protocol on Biosafety and the CITES convention.

Those reports will solely relate to biofuels and biogas for transport and not cover biofuels for heat and power. For example, they must report on the impacts of palm oil for biodiesel, but not on the impacts of palm oil for power plants. Wider ‘indirect’ impacts do not have to be addressed, except for food availability and prices.

The Commission can recommend ‘corrective action’ for serious impacts, but does not have to do so.

Verification that standards are being met:

Compatibility with ‘sustainability standards’ will be ‘verified’ through audited company reports, through bilateral or multilateral agreements or through compliance with voluntary certification schemes.

- a) Audited company reports:

Companies must submit information about the sourcing of their biofuels and compliance with ‘sustainability standards’ to Member States. On request, they must make available the data which they used for this. Member States must require companies to show that the information is independently audited. This means that ‘verification’ will rely on companies completing forms, choosing and paying their own auditors.



Companies will use a mass balance system, which means that biofuel feedstock from different sources can be mixed and companies will give a percentage of how much feeds sustainability standards.

Member states can ask the Commission to examine whether biofuels from a particular source meet the 'sustainability standards', or the Commission can decide to do so. Parliament cannot request this.

b) Bilateral and multilateral agreements:

The EU aims to conclude bilateral and multilateral agreements with provisions on sustainability criteria with other countries. Such agreements can last for up to five years, although they can be revoked earlier by the EU. Once such an agreement is signed, the Commission can decide that all feedstock from the countries concerned will be presumed to meet all 'sustainability criteria', including the requirement for biofuels to be assessed as meeting minimum 'greenhouse gas savings'. Companies no longer have to report on feedstocks from such countries meeting 'sustainability standards'. Such agreements must include 'transparent and independent auditing' though it is not clear what this would entail and who should carry it out.

'Consideration' must be given to protecting areas such as watersheds and land at particular risk of erosion, to protect water, soil and air, to address indirect land use change, restore degraded lands and to avoid excessive water use in water-stressed areas, and to social impacts. What 'giving consideration' means is not defined and there is no requirement to prove that biofuel production does not cause serious social and environmental impacts in a country.

c) Voluntary certification schemes:

The Commission can decide that voluntary certification schemes are sufficient to verify that sustainability criteria (other than the 'greenhouse gas savings' requirement) are being met. The same general provisions apply as for bilateral and multilateral agreements.

Greenhouse gas calculations:

The method for calculating 'greenhouse gas savings' depends on whether there are carbon emissions from direct land-use change.

EU Member States will draw up lists of areas where they state that there would be no carbon emissions from conversion to biofuels. For biofuels from outside the EU, companies need to report on whether there are such emissions, unless there is a bilateral or multilateral agreement, in which case it is simply presumed that the requirement to 'save' at least 35% of greenhouse gas emissions is met for all types of feedstock (even soya biodiesel, which is given a 'default value' of less than 35%).

The Commission may draw up a list of areas in non-EU countries where no emissions from land-use change are expected.

If there are emissions from land use change and if there is no bilateral or multilateral agreement, then companies need to calculate the greenhouse gas emissions associated with their biofuels. The RED gives a rough methodology for those calculations and

the Commission will draw up the methodology for calculating emissions from land-use change, based on the IPCC. Emissions from land-use change are divided by 20, i.e. they are counted over a period of twenty years.

Otherwise, companies can rely on a list of 'default values' which is contained in the RED and which attributes 'greenhouse gas savings' to different types of biofuel feedstock. Those default values were drawn up by the Joint Research Centre, Eucar (representing European car manufacturers) and Concawe (representing the oil industry in Europe), without any transparency about the methods used.

The only feedstock classed as not meeting the 35% 'greenhouse gas savings' requirement under the default values is soya biodiesel. Apart from soya biodiesel, all listed types of feedstock can achieve a default value which is higher than 35%, though, in some cases, this will depend on the type of fuel used in refining and, in the case of palm oil mills, on methane capture. On the other hand, companies can choose to use the more complicated methodology to calculate 'greenhouse gas savings' for their biofuels even if default values are given. Soya biodiesel could thus still be classed as meeting the 'greenhouse gas savings' requirement.

The default values may be changed on recommendation by the Commission. By the end of 2010, the Commission will submit a report about the greenhouse gas impact of indirect land use change and ways of minimising it. They may put forward proposals for including indirect land use change in the methodology for calculating greenhouse gas emissions, but they do not have to do so. Even if some indirect land use change emissions were taken into account, this would only apply after 2012 at the earliest, and then only for installations which opened before 31.12.2012, regardless of whether they increase their capacity after that date. For older installations, it would only apply from 2018, except in cases where the 'greenhouse gas savings' (excluding any indirect emissions) are classed as being at least 45%. Like other greenhouse gas emission calculations, indirect land use change calculations may be ignored completely if bilateral or multilateral agreements apply, although those agreements are supposed to give 'consideration' to measures taken to address indirect impacts, without specifying what that should mean in practice. While indirect land-use change emissions will be completely or mainly ignored, presumed 'positive indirect impacts' from biofuel co-products<sup>5</sup> are taken into account. This "creative accountancy" makes apparent 'greenhouse gas savings' possible.

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