In the last issue of Biofuels International eBIO took a closer look at the recently-adopted directive on fuel quality standards (FQD). In this issue the focus will be on the other very important law for the biofuel industry: the Renewable Energy Directive (RED).

The Renewable Energy Directive: Europe's way to promote biofuels

Both the RED and the FQD were adopted in December 2008 as part of a package of six laws on energy and climate. But it is the RED, in particular the section on biofuels, that has caused long, intensive, emotional public debates.

Major cornerstones of the RED are on the one hand the reduction of GHG emissions and on the other hand the security of supply. On top of that the promotion of renewable energy production in Europe triggers technological developments and creates employment, both of which are badly needed in times of crises.

The Directive is a comprehensive framework bringing together all sectors, which have so far been covered by different directives.[1] As the most important piece of legislation to promote renewables, the RED replaces the Biofuels Directive from 2003, which set an indicative target for the use of biofuels of 5.75% by energy in 2010.

A binding target

In January this year the European Commission – the executive branch of the EU –proposed a binding 10% target for renewable energy in transport by 2020.

As the inclusion of this target followed the political will of the European Heads of States who spoke in favour of a 10% biofuels target in March 2007, the fierce political discussions about this very target have taken many by surprise.

Unlike in 2003 when the Biofuels Directive that is now in force was discussed, this time the majority of the European Parliament (EP) was loudly questioning the proposed target – spearheaded by a green Luxembourg MEP who happened to be responsible for steering the dossier through Parliament.

The target – so the argument of the biofuels opponents went – would promote biofuels whose impact on the environment was unclear, possibly doing more harm than good.

Therefore the Parliament tried to insert an intermediate target for 2015 of only 5% combined with fixed sub shares for electric vehicles and hydrogen cars. The Commission and the Council, however, stayed convinced of the positive contribution of biofuels to both energy security and reducing greenhouse gas (GHG) emissions and supported the 10% target throughout the discussions.

Finally, also the EP recognised the importance of renewable fuels for the EU's energy and climate strategy and accepted the binding minimum target of 10% be it under additional conditions mainly in the area of sustainability criteria, monitoring and reporting requirements.

Article 3 paragraph 4 of the new Directive now reads as follows: *'Each member state shall ensure that the share of energy from renewable sources in all forms of transport in 2020 is at least 10% of final consumption of energy in transport in that member state'.*

However, there are two provisions that are somewhat worrying as they potentially lower the share of the target for biofuels. The first one applies to the calculation of this target. While all types of renewable energy used in all forms of transport shall be taken into account for the fulfillment of the 10% target (numerator), the total amount of energy consumed in transport (denominator) is only based on land transport (including petrol, diesel, biofuels and electricity consumption). This means that a bio-based jet-fuel would count towards the 10% target whereas the kerosene consumption of the aviation sector is excluded from the calculation of the overall energy consumption baseline.

The second provision is the explicit introduction of a calculation method for the contribution of renewable electricity in electric cars and more precisely the fact that member states may choose to use either the average share of renewable electricity for the EU or the share of renewable electricity in their own country as a baseline.

Conventional wisdom suggests they will pick the higher one across the board, which logically again reduces the share for biofuels – in case the countries' renewable electricity use is lower than the EU average. Furthermore, renewable electricity consumed by electric cars will – due to the higher energy yield of electric engines – be considered to be 2.5 times the energy content of the renewable electricity input.

Incentive for advanced biofuels

In March 2007 the European Heads of States formulated three conditions for the 10% target to be binding,[2] one of them being the commercial availability of second generation

biofuels. During the discussions politicians considered reserving a sub-share of the 10% target for these advanced biofuels.

The Parliament which has been favouring this possibility argued that this would reduce any possible negative effects of conventional food crops using biofuels production.

The Commission and the Council however preferred to leave the fulfillment of the 10% target up to the market depending on which technologies would be available by 2020. Nevertheless everyone involved understands the need for a strong support instrument to speed up commercialisation of second generation biofuels.

Therefore a double counting mechanism has been introduced in Article 21 § 2 of the RED as follows: *'For the purposes of demonstrating compliance with national renewable energy obligations placed on operators and the target for the use of energy from renewable sources in all forms of transport referred to in Article 3(3), the contribution made by biofuels produced from wastes, residues, non-food cellulosic material, and ligno-cellulosic material shall be considered to be twice that made by other biofuels'.*

Sustainability

Biofuel production needs to be sustainable. Therefore the Directive only allows sustainable biofuels and bioliquids[3] to count towards the fulfillment of the 10% target and renewable energy obligations. In addition only sustainable biofuels are eligible for financial support.

The RED draws up a detailed set of criteria biofuels need to comply with in order to be accepted as sustainable; these relate to:

- A minimum GHG saving
- Defined areas which cannot be used to produce biofuels (no-go-areas)
- Social standards

To avoid any disputes at WTO level, sustainability criteria apply equally to biofuels produced inside or outside the EU.

GHG emission savings: One element of the sustainability scheme is the GHG saving requirement. Biofuels will need to save 35% GHG emissions compared to fossil fuels.

This threshold will increase to 50% in 2017 for existing plants whereas new installations that come on-stream in 2017 and onwards will need to achieve a 60% saving.

The GHG emission saving from the use of biofuels must be calculated on the basis of the methodology provided for in the Directive. The biofuels are then compared to the fossil fuels whose value shall be the latest available actual average emissions from the fossil part of petrol and diesel consumed in the Community. However, as long as such accurate data are not available, the value used shall be 83.8 gCO2eq/MJ.

An exemption (grandfather) is granted for biofuels produced by existing installations, which means plants that were in operation in January 2008. Those biofuels do not need to comply with the GHG saving criterion until 1 April 2013. The GHG saving requirement will be binding as soon as the member states will have transposed the RED, which they need to do within 18 months after the EU Directive was published in the EU Official Journal (expected April 2009). The exact date of compliance will thus vary and cannot be foreseen precisely.

No-go-areas: The Directive identifies some categories of land which are excluded for biofuels feedstock production. First of all this is land with high biodiversity value. This includes primary forest and other wooded land, areas designated by law or by the relevant competent authority for nature protection purposes, areas for the protection of rare, threatened or endangered ecosystems or species, highly biodiverse natural grassland or highly biodiverse non natural grassland.

The land on which the raw material has been grown must not have had one of these above-mentioned statuses in or after January 2008. Secondly, land with high carbon stock land. This is defined as wetlands, continuously forested areas or land spanning more than 1 hectare with trees higher than 5 metres and a canopy cover of between 10% and 30%. Cut off date for this provision is January 2008, which means that the status of the land must not change after this date. If at the time the raw material was obtained, the land had the same status as it had in January 2008, the criterion counts as fulfilled. Finally, land that was peatland in January 2008, unless it is proven that the cultivation and harvesting of this raw material does not involve drainage of previously undrained soil.

Social standards: The Commission must report whether non-EU countries have ratified and implemented eight ILO conventions and propose corrective action if appropriate. Again, so that the Community is not accused of introducing non-tariff barriers in its legislation these social standards also apply to EU countries.[4]

Proof needed

Sustainability has to be proven. To this end all economic operators (most likely the fuel distributors) need to provide independently audited information that will prove that sustainable raw material or biofuel was used. The European Commission has just started work on the detailed information that is required but in any case every certificate has to be based on the mass balance system. Only the certification schemes, as well as those for measuring GHG saving, approved by the European Commission have legal value. The European Community can also conclude sustainability agreements with non-EU countries and decide that those agreements prove that the biofuel has been produced sustainably.

The rules on the calculation of the GHG saving are the most technical part of the criteria. To demonstrate the saving of their biofuel producers can either refer to default values listed in Annex V of the Directive or provide actual data using a methodology given in Annex V § C.[5]

Reporting requirements

The new law includes several reporting requirements from the European Commission and one report from the member states every two years. The two most important Commission reports are due in 2010 and 2014 respectively.

Indirect land use change 2010: This issue has been the bone of contention about which bitter political battles have been fought. While the Parliament asked for an immediate inclusion of the indirect land use effect into the GHG calculation method, the Commission and Council preferred to play safe and await a proper methodology.

Both parties finally agreed that the Commission has to submit a report to the European Parliament and to the Council reviewing the impact of indirect land use change on GHG emissions by 31 December 2010 at the latest. This report has to address ways to minimise the GHG emission impact. It is up to the European Commission to propose a concrete methodology for emissions from carbon stock changes caused by indirect land use changes. In any case such a methodology needs to reflect the best available scientific evidence.

Certainty for investments was considered very important for the member states so some safeguards were built in. With respect to installations that produced biofuels before the end of 2013, the effects of ILUC will not be to their disadvantage until the end of 2017, if those installations otherwise meet the sustainability criteria. However, those biofuels must

achieve a GHG saving of at least 45%. This provision will apply to the production capacities that have been in place by the end of 2012. The European Parliament and the Council then have until 2012 to decide on the proposals submitted by the Commission.

Review 2014: This report has to review the GHG saving threshold for 2017. The report also needs to review several conditions related to the 10% target such as cost-efficiency of the measures taken, level of sustainability, impact on foodstuffs and food prices, commercial availability of electric, hybrid and hydrogen powered vehicles. Contrary to what the EP rapporteur wanted the target itself is not part of the review.

The next steps

The new Directives will enter into force on the 20th day following its publication in the EU Official Journal. It is expected that this publication will take place at end of April. Member states need to transpose the new laws into national law within 18 months after publication for the RED.

For those that have read the RED there are more likely to be questions than clear answers. As often, the devil is in the detail. The European Commission is aware of the complexity and has decided that a first priority is to publish a communication that can be seen as an explanatory note to the law.

A second priority issue is the study on ILUC. The outcome of this will much depend on what will happen in the US. The Community Joint Research Centre has already taken the first steps to study the modeling of ILUC. Results on scientific evidence can be expected by the end of this year. Then the Commission will study what policy measures are needed, if any.

A third priority is to make the certification scheme operational. This requires a clear understanding of what kind of information needs to be supplied by economic operators and what is needed for a reliable auditing of future schemes. The European Commission has just issued a tender to obtain expert support on elaborating several sustainability criteria.

Implementation rules on certification can be expected by the end of this year. Meanwhile many have already discovered the sustainability need as a valuable source of new business opportunities: be it as a marketing tool to promote their products – even if the certificate cannot be rubberstamped by the Commission – or as a profitable field to develop certification methods and issue certificates. It is, however, important to understand that all those certificates must be accepted by the Commission as being in line with the sustainability criteria laid down in the Directive and the information requirements still to be set. If not they will not have legal value. Despite this fact some buyers already now demand certain information related to sustainability from bioethanol producers. Strictly speaking, there is not yet any legal basis for such a requirement.

With this new Directive the European Union provides an impetus for increased use of biofuels and thus enters the next era of its biofuel history. This year will be dominated by work on establishing implementation rules and guidelines. From 2010 onwards the EU biofuels market will experience a major system change. ●

More information

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1 Biofuels Directive (EC/2003/70), Directive 2001/77/EC on the promotion of electricity from renewable energy sources in the internal electricity market
2 The other 2 conditions are biofuels that need to be sustainable and a revision of the FQD in order to allow for higher blends.
3 The sustainability requirements in the RED apply to biofuels and bioliquids in the same manner. In the following reference is only made to biofuels for the sake of simplicity.
4 Obviously to apply these social conditions to EU Member States is beyond comprehension. After all these conventions are already enshrined in the EU Treaty.
5 'default value' means a value derived from a typical value by the application of pre determined factors and that may, in circumstances specified in this Directive, be used in place of an actual value. The Directive also introduces the concept of "typical value" which means an estimate of the representative greenhouse gas emissions saving for a particular biofuel production pathway.