

Sustainable Biofuels: Regulation of Biofuels: Renewable Energy

The use of biofuels is constantly expanding in the European Union ("EU"). Directive 2009/28/EC ("**Renewable Energy Directive**") regulates the use of biofuels in the EU by ensuring that **sustainable biofuels** only are used, which would generate net energy savings on **greenhouse gas** emissions ("**GHG**") thus avoiding a negative impact on biodiversity and land use.

In accordance with the **Renewable Energy Directive** on the **promotion of the use of energy from renewable sources**, the EU has to achieve the following mandatory targets of a 20% overall share of renewable energy in the EU; and each Member State a 10% share of renewable energy in the transport sector, by 2020.

The main purpose of mandatory national targets is to provide certainty for investors and to encourage continuous development of technologies which generate energy from all types of renewable sources. Deferring a decision about whether a target is mandatory until a future event takes place is thus not appropriate.

Under Directive 98/70/EC as amended ("**Fuel Quality Directive**"), the EU has to achieve a **six %** reduction in the **greenhouse gas intensity of fuels** used in road transport and non-road mobile machinery, by 2020.

The **Renewable Energy Directive** amends and repeals Directives 2001/77/EC and 2003/30/EC respectively.

Energy Savings and Efficiency

The aim of the **Renewable Energy Directive** is to ensure **energy savings** and increased **energy efficiency**:

The control of European energy consumption and the increased use of energy from renewable sources, together with energy savings and increased energy efficiency, constitute important parts of the package of measures needed to reduce greenhouse gas emissions and comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and with further Community and international greenhouse gas emission reduction commitments beyond 2012. Those factors also have an important part to play in promoting the security of energy supply, promoting technological development and innovation and providing opportunities for employment and regional development, especially in rural and isolated areas.

The improvement of **energy efficiency** is a key objective of the EU, and the aim is to achieve a **20% improvement in energy efficiency**, by 2020.

The need for energy efficiency in the transport sector is imperative because a mandatory percentage target for energy from renewable sources is likely to become increasingly difficult to achieve sustainably if overall demand for energy for transport continues to rise. The mandatory 10% target for transport to be achieved by all Member States should therefore be defined as that share of final energy consumed in transport which is to be achieved from renewable sources as a whole, and not from biofuels alone.

- **"Renewable energy obligation"** means a national support scheme requiring energy producers to include a given proportion of energy from renewable sources in their production, requiring energy suppliers to include a given proportion of energy from renewable sources in their supply, or requiring energy consumers to include a given proportion of energy from renewable sources in their consumption. This includes schemes under which such requirements may be fulfilled by using green certificates.
- **"Biomass"** means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste.
- **"Biofuels"** means liquid or gaseous fuel for transport produced from biomass.

Renewable Energy Sources

The development of energy from **renewable energy sources** is seen as a way of increasing energy efficiency:

In order to reduce greenhouse gas emissions within the Community and reduce its dependence on energy imports, the development of energy from renewable sources should be closely linked to increased energy efficiency.

Biogas Production

Biogas Production from manure, slurry and other animal and organic waste has several advantages:

The use of agricultural material such as manure, slurry and other animal and organic waste for biogas production has, in view of the high greenhouse gas emission saving potential, significant environmental advantages in terms of heat and power production and its use as biofuel. Biogas installations can, as a result of their decentralised nature and the regional investment structure, contribute significantly to sustainable development in rural areas and offer farmers new income opportunities.

Target Renewable Energy Potential and Energy Mix

The whole of the EU has a **20% target** and this is shared amongst Member States in what is described as a **fair and adequate allocation** in terms of each Member State's: (i) **starting point**; (ii) **potentials**; (iii) **existing levels of energy from renewable sources**; and (iv) **energy mix**.

The starting point, the renewable energy potential and the energy mix of each Member State vary. It is therefore necessary to translate the Community 20% target into individual targets for each Member State, with due regard to a fair and adequate allocation taking account of Member States' different starting points and potentials, including the existing level of energy from renewable sources and the energy mix. It is appropriate to do this by sharing the required total increase in the use of energy from renewable sources between Member States on the basis of an equal increase in each Member State's share weighted by their GDP, modulated to reflect their starting points, and by accounting in terms of gross final consumption of energy, with account being taken of Member States' past efforts with regard to the use of energy from renewable sources.

Target for Energy from Renewable Sources in Transport

There is a 10% target for energy from renewable sources in transport to be set at the same level for each Member State in order to ensure consistency in transport fuel specifications and availability.

- **"Energy from renewable sources"** mean energy from renewable non-fossil sources, namely wind, solar, aero thermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
- **"Aero-thermal energy"** means energy stored in the form of heat in the ambient air.
- **"Geothermal energy"** means energy stored in the form of heat beneath the surface of solid earth.

Sustainability Criteria

Article 17 of the **Renewable Energy Directive** sets out the **sustainability criteria** for **biofuels** and **bio-liquids**:

Irrespective of whether the raw materials were cultivated inside or outside the territory of the Community, energy from biofuels and bioliquids shall be taken into account ... only if they fulfil sustainability criteria:

- *Measuring compliance with the requirements of this Directive concerning national targets;*
- *Measuring compliance with renewable energy obligations;*
- *Eligibility for financial support for the consumption of biofuels and bioliquids.*

Greenhouse Gas Emission

The GHG emission saving from the use of biofuels and bio-liquids is at least 35%. From 1 January 2017, the GHG emission saving varies from 50 to 60% depending on how they are produced.

Under Article 18 of the **Renewable Energy Directive**, economic operators will have to show that certain sustainability criteria are fulfilled.

For that purpose economic operators will have to use a mass balance system which:

- (a) allows consignments of raw material or biofuel with differing sustainability characteristics to be mixed;*
- (b) requires information about the sustainability characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and*
- (c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture.*

Under Article 19 of the **Renewable Energy Directive**, the GHG emission saving from the use of biofuel and bio-liquids shall be calculated as follows:

(a) where a default value for greenhouse gas emission saving for the production pathway is laid down in part A or B of Annex V and where the e_l value for those biofuels or bioliquids calculated in accordance with point 7 of part C of Annex V is equal to or less than zero, by using that default value;

(b) by using an actual value calculated in accordance with the methodology laid down in part C of Annex V; or

(c) by using a value calculated as the sum of the factors of the formula referred to in point 1 of part C of Annex V, where disaggregated default values in part D or E of Annex V may be used for some factors, and actual values, calculated in accordance with the methodology laid down in part C of Annex V, for all other factors.

Compliance with National Renewable Obligations

Under Article 21 of the **Renewable Energy Directive**, 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, 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.

The national overall targets for the share of energy from renewable sources in gross final consumption of energy in 2020 - Share of energy from renewable sources in gross final consumption of energy, 2005 (S2005)/Target for share of energy from renewable sources in gross final consumption of energy, 2020 (S2020) are as follows:

Belgium | 2.2 % | 13 % |

Bulgaria | 9.4 % | 16 % |

Czech Republic | 6.1 % | 13 % |

Denmark | 17.0 % | 30 % |

Germany | 5.8 % | 18 % |

Estonia | 18.0 % | 25 % |

Ireland | 3.1 % | 16 % |

Greece | 6.9 % | 18 % |

Spain | 8.7 % | 20 % |

France | 10.3 % | 23 % |

Italy | 5.2 % | 17 % |

Cyprus | 2.9 % | 13 % |

Latvia | 32,6 % | 40 % |
Lithuania | 15.0 % | 23 % |
Luxembourg | 0.9 % | 11 % |
Hungary | 4.3 % | 13 % |
Malta | 0.0 % | 10 % |
Netherlands | 2.4 % | 14 % |
Austria | 23.3 % | 34 % |
Poland | 7.2 % | 15 % |
Portugal | 20.5 % | 31 % |
Romania | 17.8 % | 24 % |
Slovenia | 16.0 % | 25 % |
Slovak Republic | 6.7 % | 14 % |
Finland | 28.5 % | 38 % |
Sweden | 39.8 % | 49 % |
United Kingdom | 1.3 % | 15 % |

Conclusion

There are proposals in place to amend the **Renewable Energy Directive**.

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