Basic information

2008/0016(COD) COD - Ordinary legislative procedure (ex-codecision procedure) Directive	Procedure completed
Promotion of the use of energy from renewable sources. Renewable Energy Directive Repealing Directive 2001/77/EC 2000/0116(COD) Repealing Directive 2003/30/EC 2001/0265(COD) Repealed by 2016/0382(COD) Amended by 2012/0288(COD) **Subject** 3.60.05 Alternative and renewable energies 3.60.08 Energy efficiency	

Key players

European Parliament

Committee responsible	Rapporteur	Appointed
ITRE Industry, Research and Energy	TURMES Claude (Verts /ALE)	25/02/2008

Committee for opinion	Rapporteur for opinion	Appointed
INTA International Trade	GLATTFELDER Béla (PPE-DE)	25/03/2008
ECON Economic and Monetary Affairs	BAEVA Mariela Velichkova (ALDE)	11/03/2008
ENVI Environment, Public Health and Food Safety (Associated committee)	WIJKMAN Anders (PPE-DE)	05/03/2008
TRAN Transport and Tourism	AYALA SENDER Inés (PSE)	26/02/2008
REGI Regional Development	POHJAMO Samuli (ALDE)	26/03/2008
AGRI Agriculture and Rural Development	BOURZAI Bernadette (PSE)	25/02/2008

Committee for opinion on the legal basis	Rapporteur for opinion	Appointed

	JURI Legal Affairs	WALLIS Diana (ALDE)	19/12/2007

Council of the European Union

Council configuration	Meetings	Date
Justice and Home Affairs (JHA)	2936	2009-04-06
Transport, Telecommunications and Energy	2854	2008-02-28
Transport, Telecommunications and Energy	2913	2008-12-08
Transport, Telecommunications and Energy	2895	2008-10-09
Transport, Telecommunications and Energy	2875	2008-06-06
Environment	2856	2008-03-03
Environment	2898	2008-10-20
Environment	2912	2008-12-04
Environment	2784	2008-06-05

European Commission

Commission DG	Commissioner
Energy and Transport	PIEBALGS Andris

Key events

Date	Event	Reference	Summary
23/01/2008	Legislative proposal published	COM(2008)0019	Summary
19/02/2008	Committee referral announced in Parliament, 1st reading		
28/02/2008	Debate in Council		Summary
03/03/2008	Debate in Council		Summary
10/04/2008	Referral to associated committees announced in Parliament		
05/06/2008	Debate in Council		Summary
06/06/2008	Debate in Council		Summary
11/09/2008	Vote in committee, 1st reading		Summary
26/09/2008	Committee report tabled for plenary, 1st reading	A6-0369/2008	
09/10/2008	Amended budget adopted by Council		
20/10/2008	Debate in Council		Summary
04/12/2008	Debate in Council		
08/12/2008	Debate in Council		
16/12/2008	Debate in Parliament		
17/12/2008	Decision by Parliament, 1st reading	T6-0609/2008	Summary

17/12/2008	Results of vote in Parliament		
06/04/2009	Act adopted by Council after Parliament's 1st reading		
22/04/2009	End of procedure in Parliament		
23/04/2009	Final act signed		
05/06/2009	Final act published in Official Journal		

Technical information

Procedure reference	2008/0016(COD)
Procedure type	COD - Ordinary legislative procedure (ex-codecision procedure)
Procedure subtype	Legislation
Legislative instrument	Directive
Amendments and repeals	Repealing Directive 2001/77/EC 2000/0116(COD) Repealing Directive 2003/30/EC 2001/0265(COD) Repealed by 2016/0382(COD) Amended by 2012/0288(COD)
Legal basis	EC Treaty (after Amsterdam) EC 095 EC Treaty (after Amsterdam) EC 175-p1
Stage reached in procedure	Procedure completed
Committee dossier	ITRE/6/58782

Documentation gateway

European Parliament

Document type	Committee	Reference	Date	Summary
Committee draft report		PE405.949	13/05/2008	
Committee opinion	ECON	PE404.774	05/06/2008	
Amendments tabled in committee		PE407.890	18/06/2008	
Amendments tabled in committee		PE407.891	23/06/2008	
Amendments tabled in committee		PE409.383	24/06/2008	
Committee opinion	INTA	PE405.910	25/06/2008	
Committee opinion	TRAN	PE404.723	26/06/2008	
Committee opinion	AGRI	PE406.027	26/06/2008	
Amendments tabled in committee		PE409.384	26/06/2008	
Committee opinion	REGI	PE405.967	27/06/2008	
Specific opinion	JURI	PE409.437	27/06/2008	
Amendments tabled in committee		PE409.428	01/07/2008	
Amendments tabled in committee		PE409.429	02/07/2008	
Amendments tabled in committee		PE409.503	03/07/2008	

Committee opinion	ENVI	PE406.140	15/07/2008	
Committee report tabled for plenary, 1st reading/single reading		A6-0369/2008	26/09/2008	
Text adopted by Parliament, 1st reading/single reading		T6-0609/2008	17/12/2008	Summary

Council of the EU

Document type	Reference	Date	Summary
Draft final act	03736/2008/LEX	23/04/2009	

European Commission

Document type	Reference	Date	Summary
Legislative proposal	COM(2008)0019	23/01/2008	Summary
Document attached to the procedure	COM(2008)0030	23/01/2008	Summary
Document attached to the procedure	SEC(2008)0057	23/01/2008	
Document attached to the procedure	SEC(2008)0085	23/01/2008	
Commission response to text adopted in plenary	SP(2009)402	29/01/2009	
Follow-up document	COM(2010)0011	25/02/2010	Summary
Follow-up document	SEC(2010)0065	25/02/2010	
Follow-up document	SEC(2010)0066	25/02/2010	
Follow-up document	COM(2010)0427	10/08/2010	Summary
Follow-up document	COM(2010)0811	22/12/2010	Summary
Follow-up document	SEC(2011)0129	31/01/2011	Summary
Follow-up document	SEC(2011)0131	31/01/2011	Summary
Follow-up document	C(2012)1745	19/03/2012	
Follow-up document	COM(2013)0175	27/03/2013	Summary
Follow-up document	SWD(2013)0102	27/03/2013	
Follow-up document	COM(2015)0293	15/06/2015	Summary

Follow-up document	SWD(2015)0117	15/06/2015	
Follow-up document	COM(2017)0057	01/02/2017	Summary
Follow-up document	COM(2019)0225	09/04/2019	Summary
Follow-up document	COM(2020)0952	14/10/2020	

National parliaments

Document type	Parliament /Chamber	Reference	Date	Summary
Contribution	CZ_SENATE	COM(2013)0175	25/09/2013	
Contribution	CZ_CHAMBER	COM(2013)0175	25/06/2014	

Other institutions and bodies

Institution/body	Document type	Reference	Date	Summary
EESC	Economic and Social Committee: opinion, report	CES1511/2008	17/09/2008	
CofR	Committee of the Regions: opinion	CDR0160/2008	08/10/2008	

Additional information

Source	Document	Date
National parliaments	IPEX	
European Commission	EUR-Lex	

Final act

Directive 2009/0028
OJ L 140 05.06.2009, p. 0016 Summary

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 27/03/2013 - Follow-up document

The Renewable Energy Directive 2009/28/EC established a European framework for the promotion of renewable energy, setting mandatory national renewable energy targets for achieving a 20% share of renewable energy in the final energy consumption and a 10% share of energy from renewable sources in transport by 2020.

The purpose of this Report is to assess Member States' progress in the promotion and use of renewable energy along the trajectory towards the 2020 targets and to report on the sustainability of biofuels and bioliquids consumed in the EU and the impacts of this consumption in accordance with the Directive.

The report concludes that there has been a **generally solid initial start at EU level but with slower than expected removal of key barriers to renewable energy growth**, with additional efforts by particular Member States being necessary. It also concludes that:

- **deviations from national plans increase the regulatory risk faced by investors and barriers** that should, but have not yet been addressed through the implementation of the renewable energy Directive, remain to be overcome;
- at EU and Member States level, **further efforts are needed in terms of administrative simplification and clarity of planning and permitting procedures** and for infrastructure development and operation;
- further efforts are also needed regarding the **treatment and inclusion of renewable energy production within the electricity system**;
- the **general economic condition**s in the EU today, **together with disruptive changes to support schemes for renewable energy** (again, raising regulatory risk), suggest that further measures will be needed at Member State level in order to stay on the trajectory and for the targets to be achieved. Addressing such barriers will contribute significantly to the cost-effective deployment of renewable energy and the achievement of the EU's targets;
- **technology development and cost reductions are also critical**, and these will be explored in the Commission's forthcoming Communication on **energy technology and innovation**.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 15/06/2015 - Follow-up document

The Commission presents a progress report on renewable energy.

The Renewable Energy Directive, with the legally binding 20% EU target, 10% target for renewable energy use in transport and the binding national targets for 2020, forms an integral part of the EU energy policy.

In accordance with the requirements set out in the Directive, this report provides a mid-term assessment of the **progress of the EU and its Member States** towards the 2020 renewable energy targets, and includes:

- **an assessment of the feasibility of 10% renewable energy target for transport**, the sustainability of biofuels and bioliquids consumed in the EU and the impacts of this consumption;
- a preliminary assessment of the efficiency and effectiveness of the Directive in line with the requirements of Communication on Regulatory fitness and performance (REFIT programme).

1) Progress in deploying renewable energy: the report notes that with less than six years to go to the end of 2020, a **majority of the Member States are well on track** to meeting the renewable energy targets laid down in the Renewable Energy Directive.

For the EU as a whole, there are good prospects that the 2020 target will be reached. In 2013, the combined EU share of renewable energy reached 15%. The estimate **for 2014 indicates a 15.3% share**, which is above the trajectory for the EU as a whole. 26 Member States met their first 2011/2012 interim target and 25 Member States are expected to meet their 2013/2014 target. Some have already reached their 2020 targets.

The report sets out the following observations:

-***Heating and cooling***: renewable energy share in the heating and cooling sector was estimated to be **16.6% in 2014**. 22 Member States were on track and only 6 (Denmark, Ireland, France, the Netherlands, Portugal, Slovakia) did not meet their planned 2013 renewable energy deployment level in the heating and cooling sector

-***Electricity***: in 2013, renewable electricity generation accounted for almost **26% of total EU gross electricity generation.** About 10% of the total EU electricity is sourced from variable renewable electricity (such as wind and solar).

Hydropower plants generate by far the largest share of electricity from renewable energy sources, while their share of total renewable electricity generation shrank from 94% to 43% over the 1990-2013. **Wind power** generation more than tripled over the period 2005-2014 and it has become the second largest contributor to renewable electricity, overtaking biomass. Solar electricity generation has also increased rapidly and in 2013 accounted for 10% of all renewable electricity.

15 Member States (Belgium, Bulgaria, Germany, Estonia, Spain, Croatia, Italy, Cyprus,

Latvia, Lithuania, the Netherlands, Romania, Finland, Sweden and United Kingdom) were above their indicative trajectory shares for renewable electricity use in 2013.

-***Transport***: in this sector, the target for 2020 is to achieve 10% share of renewable energy, the bulk of which is still expected to come from biofuels. However, **the progress in the past five years towards this target has been slow** – with a projection of only 5.7% renewable energy in transport in 2014. The main reason for this was uncertainty caused by delay in finalisation of the policy to limit the risks of indirect land-use change, and insufficient progress in deployment of alternative, second-generation biofuels. A political agreement on limiting the impact from indirect land use change has meanwhile been reached.

The Commission considers that achieving 10% renewable energy target for transport by 2020 **is challenging, but remains feasible** and progress achieved in some Member States testifies to this. Sweden is the only Member State that has already reached its renewable energy target for transport with the 2013 share reaching 16.7%.

A **breakthrough in advanced biofuels**, and a comprehensive approach towards **decarbonisation of the transport sector**, including decisive steps towards increasing the share of renewable electricity in transport, remains key.

2) Creating an enabling environment: the report notes that for a number of Member States, reaching the targets may appear difficult not least due to the **steeper slope of the trajectory and persistent market barriers**. Despite steady progress until now, the achievement of the 2020 targets is still largely dependent on continuity of current policies in Member States and additional measures enabling deployment of renewable energy. For certain Member States this will require cooperation with other Member States. Other Member States will need to address non-cost barriers in order to boost development and deployment of renewables and allow their full integration in the energy market. The Commission suggests **intensifying efforts by making use of the cooperation mechanisms with other Member States as set out in the Directive.**

3) REFIT evaluation: the evaluation of the Renewable Energy Directive carried out in 2014 in the context of the REFIT programme, indicates that **the Directive is effective and achieves its objectives,** but its implementation **could be improved at Member States' level**. The REFIT evaluation also indicate that the effectiveness and efficiency of almost all the provisions of the Directive could be further enhanced by putting **a stable post-2020 policy framework in place.**

The Commission will continue to engage with the Member States and all stakeholders to ensure the deployment and integration of increasing shares of renewable energy in line with the EU 2020 renewable energy targets, and the view towards future achievement of 2030 energy and climate framework targets.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 28/02/2008

Following the Commission's presentation of the climate-energy package, the Council held a public policy debate, focusing on the proposal for a directive on the promotion of the use of energy from renewable sources.

In view of the nature of the climate-energy package, two horizontal questions focused on the ambition of the package as a whole and on sustainability criteria, and two questions were addressed to energy ministers focusing on renewable energy sources and on the trade in guarantees of origin.

The presidency summarised the debate along the following lines:

- Delegations welcome the climate-energy package in general as well as the proposal on the promotion of the use of energy from renewable sources. Early adoption of the instrument has been urged by several delegations;
- The national targets are considered to be very ambitious - some even think they are too ambitious - and, in order to achieve them, there is inter alia a need for (i) much flexibility on how to achieve them; (ii) increasing public support for renewable energies and; (iii) certainty with respect to the support schemes, including the guidelines on state aid for environmental protection. In this context, it is crucial to have some assurance that, after 2014, the successor to these guidelines will be equally supportive.
- The importance of the indicative trajectories for reaching the targets has been confirmed, but here also, flexibility seems to be necessary;
- Solidarity has been highlighted as another essential aspect;
- Balance is needed between competitiveness, security of supply and sustainability;
- The importance of trade in guarantees of origin has been underlined as a flexible instrument which should enable and not hinder Member States to reach their targets, as well as the continuation of current national support schemes for renewables;
- The contribution of energy efficiency is considered as essential to achieve the objectives;
- With respect to biofuels, there is broad support for ambitious sustainability criteria. However, these criteria should not diminish the competitiveness of European industry nor should they lead to trade barriers since import of and trade in biofuels will be necessary to achieve the target in this field. Moreover, the cost-effectiveness of the sustainability scheme will have to be ensured;
- Several delegations have indicated that sustainability criteria should apply to all forms of biomass. In this context, consistency between the renewables directive and the fuel quality directive is essential;

Lastly, the need for cost efficiency has been underlined as an essential element.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 25/02/2010 - Follow-up document

The Commission presents its report on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling. To recall, Directive 2009/28/EC (the Renewable Energy Directive) provides that the Commission should report by December 2009 on requirements for a sustainability scheme for energy uses of biomass other than biofuels and bioliquids (i.e. solid and gaseous fuels in electricity, heating and cooling). This report is intended to fulfil that obligation.

In the EU, around 5% of final energy consumption is from bio-energy. The projections made for the Renewable Energy Road Map of January 2007 suggested that the use of biomass can be expected to double, to contribute around half of the total effort for reaching the 20% renewable energy target in 2020.

The growing use of biomass for energy purposes already gives rise to international trade, and this market is bound to expand in future. Member States that are dependent on biomass imports increasingly turn to sources in other Member States or outside the EU. For biomass produced within the EU, the current legal framework (notably related to agriculture and forest management) gives certain assurances for the sustainable management of forest and agriculture. The same is true for some third countries - but others lack such a framework. For this reason, concerns have been expressed that an expansion of international trade of biomass and increasing imports from third countries may lead to the unsustainable production of biomass. As a result, the main importing countries of biomass have started to develop national sustainability requirements for bio-energy. This has led to certification schemes (voluntary and mandatory) in the agriculture, forestry and energy sectors which are not necessarily complementary or compatible. This in turn has led to calls from utilities, environmental organisations and biomass importing countries for a common sustainability scheme for biomass in order to limit intra-EU cross-border barriers in setting up bio-energy projects.

The report covers the **main sustainability issues**, and makes recommendations for actions to be taken.

Recommendations for appropriate action to address sustainability issues: the sustainability concerns raise the issue of the level at which action should be taken and the content of the action.

Level of action: the wide variety of biomass feedstocks make it difficult to put forward a harmonised scheme at this stage. Different feedstocks present different challenges to sustainable production, greenhouse gas performance or efficient energy conversion. It is also considered that the sustainability risks relating to domestic biomass production originating from wastes and agricultural and forestry residues, where no land use change occurs, are currently low. For these reasons, the Commission does not at this stage propose binding criteria at EU level. However, to minimise the risk of the development of varied and possibly incompatible criteria at national level, leading to varying degrees of mitigation, barriers to trade and stifling the growth of the bio-energy sector (and imposing increased costs on Member States for meeting their national targets), the Commission makes recommendations to Member States on the development of their sustainability schemes.

Recommended sustainability criteria: the Commission recommends that Member States that either have, or who introduce, national sustainability schemes for solid and gaseous biomass used in electricity, heating and cooling, ensure that these **in almost all respects are the same as those laid down in the Renewable Energy Directive.** This would ensure greater consistency and avoid unwarranted discrimination in the use of raw materials.

Due to the characteristics of the production and use of solid and gaseous biomass used in electricity, heating and cooling, the following differences are appropriate:

- according to the Renewable Energy Directive, wastes and certain residues should only be required to fulfil the requirements of the Directive, i. e. the greenhouse gas performance criteria. However, it is recommended that the greenhouse gas performance criterion is not applied to wastes, but to the products for which default greenhouse gas emission values have been calculated as listed in Annex II;
- the methodology for the calculation of greenhouse gas emissions should be extended, resulting in the methodological rules described in Annex I. Default and typical greenhouse gas performance values calculated using this methodology are presented for primary solid and gaseous biomass fuels in Annex II;
- to stimulate higher energy conversion efficiency, Member States should in their support schemes for electricity, heating and cooling installations differentiate in favour of installations that achieve **high energy conversion efficiencies**, such as high efficiency cogeneration plants. For small-scale solid-fuel boilers, the Commission is expected to propose minimum efficiency and environmental requirements related to air quality in 2010. Emissions related to land use, land use change and forestry (LULUCF) accounting and provisions related to the UN programme for reducing emissions from deforestation and forest degradation in developing countries (REDD) could help addressing land use related sustainability issues in third countries. As such rules are not yet in place at international level, and because of the relatively higher sustainability risks related to forestry, the Commission will closely monitor progress in this field and, by 31 December 2011, reassess the situation.

Scope of application of the criteria: the biomass sector is fragmented and there are numerous small-scale users of biomass. It is recommended that sustainability schemes **apply only to larger energy producers of 1 MW thermal or 1MW electrical capacity or above**. Placing requirements on small-scale producers to prove sustainability would create undue administrative burden, although higher performance and efficiency should be encouraged.

Requirements for reporting and monitoring: biomass trade in the EU plays an important role in the development of the bio-energy sector. National and European statistics have large gaps concerning the amount of biomass used for energy purposes. In order to improve data on biomass use, it is recommended that **Member States keep records of the origin of primary biomass used in electricity, heating and cooling installations of 1 MW or above.** Member States are also encouraged to monitor small-scale (mainly household) biomass use through surveys and strive to improve the availability and quality of data.

It is recommended that the **information collected by Member States is communicated to the Commission** so that the Commission may take this into account in monitoring potentially vulnerable areas. Further development on the emergence of wider sustainability regimes affecting forests (e.g. sustainable forest management schemes) or other agricultural or forest products will be monitored, to assess whether sustainability requirements for only the energy uses of forest and agricultural biomass help to deliver on sustainable development for the forest and agricultural sectors. The Commission will also examine efforts to account for global emissions from land use, land use change and forests under the United Nations Framework Convention on Climate Change.

These recommendations aim to promote the sustainable production and use of biomass, a well functioning internal market in biomass trade and to lift barriers to bio-energy development. Member States must ensure that national sustainability schemes do not constitute a means of arbitrary discrimination or a disguised restriction on trade.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 06/06/2008

The Council took note of a progress report on climate change-energy legislative package prepared by the Presidency and held a public policy debate on the main outstanding issues identified in it.

The climate change-energy package complements existing measures aiming at reaching the overall objective - endorsed by the European Council in March 2007 - of a 20% reduction in greenhouse gases by 2020 and of achieving a 20% share of renewable energies in overall EU energy consumption by 2020, including a 10% target for renewable transport fuels. The progress report was presented to both Council formations Energy and Environment as it deals with the package as a whole.

The Energy ministers' debate focused on a proposal for a directive on the promotion of the **use of energy from renewable sources**, with the aim of providing input for further work of the Council and its preparatory bodies under the incoming French Presidency.

The Presidency progress report points out the main outstanding issues identified in all four legislative proposals in the package.

As far as the **Renewables Directive** is concerned, these are the following: targets (level of the national renewable energy targets, conditionality of the renewable transport fuel target and the indicative trajectory and its consequences), long lead-time projects, the systems of trading in guarantees of origin and reinforcing measures.

One part of the report is devoted to the progress made on the **sustainability criteria for biofuels**, which are considered necessary to ensure that the production of biofuels does not have negative consequences that outweigh the benefits arising from their use. In February 2008, Coreper established an **ad hoc working party** with the task of drawing up a common sustainability scheme for biofuels for the purposes of the renewables and fuel quality directives. The working party met on several occasions and made progress on numerous issues. However, **some issues need to be addressed further**: the level and date of application of the second stage for the minimum greenhouse gas emissions saving requirement, the environmental and social sustainability of biofuel production which would apply also in third countries and the methodology for calculating greenhouse gas emissions saving.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 20/10/2008

The Council held an in-depth discussion of the three draft legislative measures within their competence, i.e. the review of the EU greenhouse gas emission allowance trading system (EU ETS); effort sharing outside the EU ETS and the Directive on the capture and storage of carbon.

The discussion brought out the clear will to succeed in arriving at an agreement with the European Parliament by the end of 2008 so that a first-reading could be reached before the end of the current legislature.

The Council intends to step up its discussions in close collaboration with the Commission so that the EU may continue to have a leading role in combating climatic change at international level. With this in mind, the Presidency instructed the Permanent Representatives Committee to prepare the negotiations on the package with the European Parliament without delay, in order to come to an agreement at first reading.

Discussions related principally to the following:

- **measures applicable to the energy sector within the EU ETS**: discussions showed that an auctioning rate of 100 % in the energy sector was accepted by most delegations. However some specific situations might justify derogations of limited duration and extent, in particular because of insufficient integration of the energy sector at European level;
- **pre-allocation of the income from auctions**: the discussion showed that although some Member States thought that the use of the income from auctions was a matter for national competence, voluntary commitments could be given consideration;
- **financing capture and storage of CO2**: the Council was prepared to examine the possibilities of combining several options, including national and Community financing, to supplement the contribution of the private sector;
- **the risk of "carbon leakage"** (i.e. relocation of energy-intensive under takings outside the EU), and the measures to be taken to protect both the environment and the competitiveness of industry in Europe: the Council showed its determination to provide clear answers to the problems which might arise from "carbon leakage". In this connection, it examined the need to lay down quantitative and qualitative criteria within appropriate periods of time, and arrangements for the sectors which were the most exposed to world competition.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 17/12/2008 - Text adopted by Parliament, 1st reading/single reading

The European Parliament adopted by 635 votes to 25 with 25 abstentions, a legislative resolution amending the proposal for a directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources. The report had been tabled for consideration in plenary by Claude **TURMES** (Greens/ALE, LU), on behalf of the Committee on Industry, Research and Energy.

The amendments were the result of a compromise between the Council and the Parliament. The main amendments - adopted under the 1st reading of the codecision procedure - were as follows:

Scope: the compromise text clarifies that the directive sets mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy and for the share of energy from renewable sources in transport. It lays down rules relating to statistical transfers between Member States, joint projects between Member States and with third countries, guarantees of origin, administrative procedures, information and training and access to the electricity grid for energy from renewable sources. It establishes also sustainability criteria for biofuels and other bioliquids.

National overall targets and measures for the use of energy from renewable sources: these mandatory national targets are consistent with a target of at least a 20% share of energy from renewable sources in the Community's gross final energy consumption in 2020. In order to achieve more easily these targets, each Member State shall promote and encourage energy efficiency and energy saving. Member States may inter alia apply the following measures: (i) support schemes; (ii) measures of co-operation between different Member States and with third countries for achieving their national overall targets. The Commission shall present, if appropriate, by the end of 2011:

- a proposal permitting, subject to certain conditions, the whole amount of the electricity originating from renewable sources used to power all types of electric vehicles to be considered;

- a proposal for a methodology for calculating the contribution of hydrogen originating from renewable sources in the total fuel mix.

The text sets out the methods of calculating the share of energy from renewable sources in all forms of transport

National Action Plans: each Member State shall adopt a renewable energy action plan, which must be sent to the Commission by 30/06/2010. The national renewable energy action plans shall set out Member States' national targets for the shares of energy from renewable sources in transport, electricity and heating and cooling in 2020, taking into account the effects of other policy measures relating to energy efficiency on final energy consumption, and adequate measures to be taken to achieve these national overall targets, including cooperation between local, regional and national authorities, planned statistical transfers or joint projects, national policies to develop existing biomass resources and mobilise new biomass resources for different uses.

The Commission shall adopt by 30 June 2009 a template for the national action plans. This template shall comprise the minimum requirements set out in Annex VI. Member States shall comply with this template in the presentation of the national action plans. Each Member State shall publish and notify to the Commission, six months before its national action plan is due, a forecast document indicating: (i) its estimated excess production of renewable energy compared to the indicative trajectory which could be transferred to other Member States, as well as the estimated potential for joint projects, until 2020; (ii) its estimated demand for renewable energy to be satisfied by means other than domestic production until 2020. The Commission shall send to the Parliament the National Action Plans and the forecast documents in the form as made public on the transparency platform (see below), as well as any recommendations.

Calculation of the share of energy from renewable sources: the gross final consumption of energy from renewable sources in each Member State shall be calculated as set out in the text, using gross figures. In multi-fuel plants using renewable and conventional sources, only the part of heating and cooling produced from renewable energy sources shall be taken into account. For the purposes of this calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

Aerothermal, geothermal and hydrothermal heat energy captured by heat pumps shall be taken into account provided that the final energy output significantly exceeds the primary energy input. The quantity of heat to be considered as renewable energy for the purposes of this Directive shall be calculated in accordance with the methodology laid down in Annex VII

In calculating a Member State's gross final energy consumption for the purpose of measuring its compliance with the targets and interim trajectory laid down in this Directive, the amount of energy consumed in aviation shall be considered to be no more, as a proportion of that Member State 's gross final energy consumption, than 6,18 %. For Cyprus and Malta the amount of energy consumed in aviation shall be considered to be no more, as a proportion of that Member State's gross final energy consumption, than 4,12 %.

Statistical transfers between Member States: Member States may make arrangements for the statistical transfer of a specified amount of energy from renewable sources to be transferred from one Member State to another Member State. The text sets out the amount of the transferred quantity. A statistical transfer shall not affect the achievement of the national target of the Member State making the transfer. These arrangements may have effect for one or more years. They must be notified to the Commission no later than 3 months after the end of each year in which they have effect. The information sent to the Commission shall include the quantity and price of the energy involved.

Joint projects between Member States: two or more Member States may cooperate on all types of joint projects relating to the production of energy from renewable electricity, heating or cooling. This cooperation may involve private operators. Member States shall notify the Commission of the proportion or amount of energy from renewable electricity, heating or cooling produced by any joint project in their territory, that became operational after the date of entry into force of this Directive, or by the increased capacity of an installation that was refurbished after the date of entry into force of this Directive, which is to be regarded as counting towards the national overall target of another Member State. Within 3 months of the end of each year falling within the relevant period, the Member State having made the notification shall issue a letter of notification stating: (a) the total amount of electricity or heating or cooling produced during the year from renewable energy sources by the installation which was the subject of the notification; and (b) the amount of electricity or heating or cooling produced during the year from renewable energy sources by that installation which is to count towards the national overall target of another Member State.

Joint projects between Member States and third countries: one or more Member States may cooperate with one or more third countries on all types of joint projects regarding the generation of electricity from renewable sources. This cooperation may involve private operators. Electricity from renewable energy sources produced in a third country shall only be taken into account for the purposes of measuring compliance with the requirements of this Directive concerning national overall targets if the certain conditions are met. Member States may apply to the Commission for account to be taken of electricity from renewable sources produced and consumed in a third country, in the context of the construction of an inter-connector with a very long lead-time between a Member State and a third country under certain conditions.

Joint support schemes: two or more Member States may decide, on a voluntary basis, to join or partly coordinate their national support schemes. In such cases, a certain amount of energy from renewable sources produced in the territory of one participating Member State may count towards the national overall target of another participating Member State if the Member States concerned fulfils certain conditions.

Administrative procedures, regulations and codes: Member States shall, in particular, take the appropriate steps to ensure, inter alia, that:

- subject to differences between them in their administrative structures and organisation, the respective responsibilities of national, regional and local administrative bodies for authorisation, certification and licensing procedures including spatial planning are clearly coordinated and defined, with transparent timetables for determining planning and building applications;

- comprehensive information on the processing of authorisation, certification and licensing applications for renewable energy installations and on available assistance to applicants shall be made available at the appropriate level;

Member States shall, in particular, encourage local and regional administrative bodies to include heating and cooling from renewable energy sources in the planning of city infrastructure. They shall introduce in their building regulations and codes appropriate measures in order to increase the share of all kinds of energy from renewable sources in the building sector. New public buildings and existing public buildings that are subject to major renovation, at national, regional and local level must fulfil an exemplary role in the context of the Directive from 2012 onwards.

Information and training: information on support measures must be made available to all relevant actors. Certification schemes or equivalent qualification schemes must become available by 31 December 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps. Member States shall make available to the public: (a) information on certification schemes or equivalent qualification schemes ; (b) the list of installers who are qualified or certified.

Guarantees of origin of electricity, heating and cooling produced from renewable energy sources: for the purposes of proving to final customers the share or quantity of renewable energy in an energy supplier's energy mix, Member States shall ensure that the origin of electricity produced from renewable energy sources can be guaranteed as such, according to objective, transparent and non-discriminatory criteria. Where energy suppliers are marketing energy from renewable sources to consumers with a reference to environmental or other benefits of renewable energy, Member States may require the energy suppliers to make available, in summary form, information on the amount or share of energy from renewable sources that comes from installations or increased capacity that became operational after the date of entry into force of this Directive. Member States or the competent bodies shall put in place appropriate mechanisms to ensure that guarantees of origin shall be issued, transferred and cancelled electronically and are accurate, reliable and fraud-resistant.

Access to and operation of the grids : Member States shall take the appropriate steps : (a) to develop transmission and distribution grid infrastructure, intelligent networks, storage facilities and the electricity system, in order to allow the secure operation of the electricity system as it accommodates the further development of electricity production from renewable energy sources, including interconnection between Member States, as well as third countries; (b) accelerate authorisation procedures for grid infrastructure and to coordinate approval of grid infrastructure with administrative and planning procedures .

Sustainability criteria for biofuels and other bioliquids: energy from biofuels and other bioliquids shall be taken into account only if they fulfil certain criteria on sustainability. With effect from 2017, the greenhouse gas emission saving from the use of biofuels and other bioliquids taken into account shall be 50%. After 2017 it shall be 60 % for biofuels and bioliquids produced in installations whose production has started from 2017 onwards.

The Commission shall report every 2 years on the impact on social sustainability in the Community and in third countries of increased demand for biofuel, and on the impact of EU biofuel policy on the availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues. Reports shall address the respect of land use rights. They shall state, both for third countries and Member States that are a significant source of raw material for biofuel consumed within the Community, whether the country has ratified and implemented prescribed Conventions of the International Labour Organisation.

The compromise text sets out verification of compliance with the sustainability criteria for biofuels and other bioliquids and the calculation of the greenhouse gas impact of biofuels and other bioliquids.

Member States' reports: each Member State shall submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011 at the latest, and every 2 years thereafter. The sixth report, to be submitted by 31 December 2021 at the latest, shall be the last report required. The text sets out the issues which the reports must cover and these include the Member State's estimated excess production of renewable energy compared to the indicative trajectory which could be transferred to other Member States, as well as the estimated potential for joint projects, until 2020.

Reports from the Commission : in order to improve financing and coordination with a view to the achievement of the 20 % target, the Commission shall:

- **by 31 December 2010**, present an analysis and action plan on energy from renewable sources aimed, in particular at: (i) better use of structural funds and framework programmes; (ii)better and increased use of funds from the European Investment Bank and other public finance institutions; (iii)better access to risk capital notably by analysing the feasibility of a risk sharing facility for investments in energy from renewable sources in the EU similar to the Global Energy Efficiency and Renewable Energy Fund initiative which is aimed at third countries; (iv)better coordination of Community and national funding and other forms of support.

- **at the latest in 2014**, the Commission shall present a report, addressing in particular the elements listed in the text regarding emissions;

- **in 2018**, the Commission shall present a Renewable Energy Roadmap for the post-2020 period ;

- **in 2021**, the Commission shall present a report reviewing the application of this Directive examining particularly thye issues listed in the text.

Transparency platform: the Commission shall establish an online public transparency platform, which will serve to increase transparency, and to facilitate and promote cooperation between Member States, in particular concerning statistical transfers and joint projects. In addition, the platform may be used to make public relevant information which the Commission or a Member State deems to be of key importance to this Directive and to the achievement of its objectives.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 23/04/2009 - Final act

PURPOSE: to establish a common framework for the promotion of energy from renewable sources.

LEGISLATIVE ACT: Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

CONTENT: following first reading agreement with the European Parliament, the Council adopted a Directive the aim of which is to achieve by 2020 a 20% share of energy from renewable sources in the EU's final consumption of energy and a 10% share of energy from renewable sources in each Member state's transport energy consumption.

This Directive establishes a common framework for the promotion of energy from renewable sources. It sets mandatory national targets for the overall share of energy from renewable sources in gross final consumption of energy and for the share of energy from renewable sources in transport. It lays down rules relating to statistical transfers between Member States, joint projects between Member States and with third countries, guarantees of origin, administrative procedures, information and training, and access to the electricity grid for energy from renewable sources. It establishes sustainability criteria for biofuels and bioliquids.

Mandatory targets: the Directive sets for the first time for each Member State a mandatory national target for the overall share of energy from renewable sources in gross final consumption of energy, taking account of Member States different starting points. The main purpose of mandatory national targets is to provide certainty for investors and to encourage technological development allowing for energy production from all types of renewable sources. To ensure that the mandatory national targets are achieved, Member States have to follow an indicative trajectory towards the achievement of their target. Each Member State will adopt a **national renewable energy action plan** setting out its national targets for the share of energy from renewable sources consumed in transport, electricity, heating and cooling in 2020 and will notify it to the Commission by June 2010. To reach the mandatory targets, Member States will apply support schemes or measures of cooperation between different Member States and with third countries. The 10% target for the transport sector is set at the same level for each Member State in order to ensure consistency in transport fuel specifications and availability.

By 31 December 2011, the Commission will present, if appropriate, a proposal permitting, subject to certain conditions, the whole amount of the electricity originating from renewable sources used to power all types of electric vehicles to be considered.

By 31 December 2011, the Commission will also present, if appropriate, a proposal for a methodology for calculating the contribution of hydrogen originating from renewable sources in the total fuel mix.

Sustainability criteria for biofuels and bioliquids: the Directive establishes sustainability criteria for biofuels and bioliquids. 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 for the following purposes only if they fulfil the sustainability criteria set out in the Directive:

a) measuring compliance with the requirements of the Directive concerning national targets;

b) measuring compliance with renewable energy obligations;

c) eligibility for financial support for the consumption of biofuels and bioliquids.

The sustainability criteria aim to ensure that biofuels and bioliquids taken into account for the above purposes are not be made from raw material obtained from land with high biodiversity value, or from land with high carbon stock, or from from land that was peatland in January 2008. These criteria are described more closely in the text.

Where biofuels and bioliquids are to be taken into account for the purposes referred to above, economic operators must show that the sustainability criteria have been fulfilled through a **mass balance system** which is described in the Directive. The Commission must report in 2010 and 2012 on the operation of the mass balance verification method on the potential for allowing for other verification methods in relation to some or all types of raw material, biofuel or bioliquids.

It should be noted that this Directive forms part of the climate-energy legislative package containing measures aimed at fighting climate change and promoting renewable energy. (See also COD/2008/0013, COD/2008/0014, COD/2008/0015, COD/2007/0019, and COD/2007/0297). The package is

designed to achieve the EU's overall environmental target of a 20 % reduction in greenhouse gases and a 20 % share of renewable energy in the EU's total energy consumption by 2020.

Transparency platform: the Commission shall establish an **online public transparency platform** which will serve to increase transparency, and facilitate and promote cooperation between Member States, in particular concerning statistical transfers and joint projects. In addition, the platform may be used to make public relevant information which the Commission or a Member State deems to be of key importance to this Directive and to the achievement of its objectives.

Reporting: the Commission shall monitor the origin of biofuels and bioliquids consumed in the Community and the impact of their production, including impact as a result of displacement, on land use in the Community and the main third countries of supply. The Commission shall report every two years to the European Parliament and the Council. The first report shall be submitted in 2012.

ENTRY INTO FORCE: 25/06/2009.

TRANSPOSITION: 05/12/2010.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 23/01/2008 - Legislative proposal

PURPOSE: to establish a common framework for the promotion of energy from renewable sources.

PROPOSED ACT: Directive of the European Parliament and of the Council

BACKGROUND: on 10 January 2007, the Commission adopted an integrated package of measures in the area of energy and climate change, inviting the Council and the European Parliament to approve:

- an EU commitment to reduce greenhouse gas emissions by at least 20% by 2020 compared to 1990 levels, as well as the aim for a 30% reduction by 2020, subject to the conclusion of an international agreement on climate change;
- a binding target for the EU of a 20% share of renewable energy sources in energy consumption by 2020, and a 10% target for biofuels.

This strategy was approved by the European Parliament and EU leaders during the March 2007 European Council. The European Council invited the Commission to present concrete proposals, particularly on the provisions for sharing the effort between Member States to achieve this objective.

The series of measures here presented is the response to this invitation. It includes a proposed set of key interdependent measures to be taken, as outlined below:

- a proposal for a directive amending Directive 2003/87/EC, to improve and extend the European Union Greenhouse Gas Emission Trading Scheme (see COD/2008/0013);
- a proposal for a decision on the effort to be made by Member States to reduce their greenhouse gas emissions, in order to respect the Community's commitments to reduce these emissions by 2020 (see COD/2008/0014);
- a proposal for a directive aiming to promote renewable energy (the subject of this document).

Included among the proposals that make up this set of measures are: a proposal for a regulatory framework on carbon capture and storage (see COD/2008/0015); a communication on the demonstration of carbon capture and storage; and a new Community framework on State aid in the area of the environment.

CONTENT: the Community has long recognised the need to further promote renewable energy. The European Parliament noted in its Resolution on climate change (see RSP/2006/2680) that renewable energy sources and energy efficient technologies play an important role in terms of the EU's overall strategy on climate change. The Parliament supported the proposal of a binding target to increase the level of renewable energy in the EU energy mix to 20% by 2020. Furthermore, in its Resolution on the Roadmap for Renewable Energy in Europe (see INI/2007/2090), the European Parliament called on the Commission to present by the end of 2007 a proposal for a renewable energy legislative framework.

The proposed Directive lays down the principles according to which Member States need to ensure that the share of renewable energy in the EU final energy consumption reaches at least **20% by 2020**, and establishes **national overall targets for each Member State** .

Three sectors are concerned in renewable energy: electricity, heating and cooling and transport. The overall approach is for Member States to retain discretion as to the mix of these sectors in reaching their national target. However, it is proposed that each Member State shall achieve **at least a 10% share of renewable energy (primarily biofuels) in the transport sector** by 2020. This is done for the following reasons:

1. the transport sector is the sector presenting the most rapid increase in greenhouse gas emissions of all sectors of the economy;
2. biofuels tackle the oil dependence of the transport sector, which is one of the most serious problems of insecurity in energy supply that the EU faces;
3. biofuels are currently more expensive to produce than other forms of renewable energy, which might mean that they would hardly be developed without a specific requirement.

Each Member State will present a national action plan explaining how the country plans to achieve its objectives, thus enabling effective monitoring of progress made.

The proposal lays down rules relating to guarantees of origin, administrative procedures and electricity grid connections in relation to energy from renewable sources.

Specifically for biofuels and other bioliquids, the Directive sets up a system to guarantee the environmental sustainability of the policy, ensuring *inter alia* that the biofuels counting towards the targets achieve a minimum level of greenhouse gas savings.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 22/12/2010 - Follow-up document

The Commission presents a report on indirect land-use change related to biofuels and bioliquids. It recalls that Directive 2009/28/EC (the "Renewable Energy Directive") and Directive 2009/30/EC ("the Fuel Quality Directive") require the Commission to review the impact of indirect land-use change on greenhouse gas emissions and address ways to minimise that impact. Although land-use change can have a wide range of positive and negative impacts (i.e. greenhouse gas emissions, biodiversity, social issues, etc), this report focuses on the consequences for the greenhouse gas emissions of biofuels, as required by the Directives.

The basic driver for indirect land-use change is the increased demand for agricultural crops in a situation where both suitable agricultural land availability and potential yield increases are limited. Some other key factors, such as achieving maximum profit from the production and complying with related legislation in place, are also likely to play a role in determining how the increased demand is to be realised.

The limited availability of low-carbon stock land in other parts of the world and the lack of more stringent protection of forests and carbon rich areas are factors that can contribute to damaging indirect land-use change. If conversion of carbon rich areas were to be limited or if more agriculture commodities were subject to sustainability criteria comparable to those laid down for biofuels, indirect land-use change could be limited. The reason for this is that the indirect land-use change effect of biofuels is the direct land-use change of another commodity.

Estimating the greenhouse gas impact due to indirect land-use change: this requires projecting impacts into the future, which is inherently uncertain, since future developments will not necessarily follow trends of the past. Moreover, the estimated land-use change can never be validated, as indirect land-use change is a phenomenon that is impossible to observe directly or measure. Therefore modelling is necessary to estimate indirect land-use change. The Commission describes in the report the analytical exercises and review of existing literature on the subject of indirect land-use change which it carried out during 2009 and 2010. It sets out the results of various consultation exercises with the wider community, and considers, in particular two reports involved separate modelling exercises. The first was carried out by IPTS, used the **AGLINK-COSIMO model**. This modelling assumed that the 10% renewable energy in transport target would be met using 7% conventional biofuels and 1.5% advanced biofuels that would be double counted. Although this model considered the impacts from the additional demand of conventional biofuels needed to meet the target, it did not consider any impacts resulting from additional demand for either advanced biofuels or bioliquids. The bioethanol-biodiesel shares considered were identical to the shares of petrol and diesel, i.e. approximately 35% and 65%, so that the share of biofuel in petrol and diesel were each respectively approximately 8.5%. The final conclusion of the modelling was that the additional demand resulting from the policy compared to a counterfactual 2020 scenario, equalled to 21 Mtoe, which would result in an increase of the total land area required for crops of 5.2 million hectares globally, one quarter of which is in the EU. This modelling did not provide a calculation of the greenhouse gas impacts of this land conversion.

The second modelling exercise was carried out using the **MIRAGE model** by the IFPRI. This modelling was based on the assumption that the 10% renewable energy in transport target would be met using 5.6% conventional biofuels with the remainder met in other ways, including a contribution of 1.5% from advanced biofuels, under current trade policy and assuming full trade liberalisation. Additional demand for advanced biofuels and bioliquids was not modelled The conclusion of the modelling was that the additional demand resulting from the policy compared to a counterfactual 2020 scenario, equalled to 8 Mtoe, which would result in an increase of total land area required for crops of 0.8 and 1 million hectares globally, under the business as usual and free trade scenarios, respectively. Converted into greenhouse gas emissions this compares to 18 grams of CO2-eq. per MJ of energy (subsequently written as g/MJ). The bioethanol-biodiesel shares were set as 45% and 55% respectively. The overall land requirements increased to 2.8 million hectares globally in the scenario using 8.6% conventional biofuels, resulting into average emissions of 30g/MJ.

The split between bioethanol and biodiesel turned out to be of great importancefor the (indirect) land-use change impact estimated using the IFPRI MIRAGE model. In a further IFPRI MIRAGE model run using the 5.6% scenario, and a 25% bioethanol/75% biodiesel split gave average (indirect) land-use change emissions of around 45 g/MJ.

The report notes that model results vary considerably across feedstocks and trade assumptions. It describes a **number of key factors not considered in the models**. Notwithstanding these conceptual limitations, it can be argued that the best available methodology to estimate (indirect) land-use change is still through economic models where decisions are made based on relative prices. However, within this framework of economic modelling, there will always be a range of unsolved issues, which influence the results considerably.

The report goes on to discuss developments in international regulatory actions to address (indirect) land-use change. It also presents a summary of the consultation responses.

Preliminary conclusions and next steps: renewable energy, including biofuels, is an essential element of the EU´s energy and climate strategy. In this context the stable and predictable investment climate created by the Renewable Energy Directive, which already contains strict sustainability criteria for

biofuels and bioliquids, including on their green house gas performance, needs to be preserved, as well as respect for the Fuel Quality Directive's ambitious reduction target in the greenhouse gas intensity of fuels used in transport.

As far as indirect land-use change is concerned, based on the work carried out to date, the Commission believes it is possible to draw a number of conclusions. It recognises that a number of deficiencies and uncertainties associated with the modelling, which is required to estimate the impacts, remain to be addressed, which could significantly impact on the results of the analytical work carried out to date. Therefore, the Commission will continue to conduct work in this area in order to ensure that policy decisions are based on the best available science and to meet its future reporting obligations on this matter.

However, the Commission acknowledges that indirect land-use change can have an impact on greenhouse gas emissions savings associated with biofuels, which could reduce their contribution to the policy goals, under certain circumstances in the absence of intervention. As such, the Commission considers that, **if action is required, indirect land-use change should be addressed under a precautionary approach.**

The Commission is finalising its impact assessment, which would focus on the assessment of the following policy options:

- take no action for the time being, while continuing to monitor;
- increase the minimum greenhouse gas saving threshold for biofuels;
- introduce additional sustainability requirements on certain categories of biofuels;
- attribute a quantity of greenhouse gas emissions to biofuels reflecting the estimated indirect land-use impact.

The Commission will present the Impact Assessment, if appropriate together with a legislative proposal for amending the Renewable Energy Directive and the Fuel Quality Directive as necessary no later than by July 2011.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 10/08/2010 - Follow-up document

The Commission presents a report on the feasibility of drawing up lists of areas in third countries with low greenhouse gas emissions from cultivation. It recalls that Directive 2009/28/EC (the Renewable Energy Directive) sets out sustainability criteria for biofuels and bioliquids. For biofuels, corresponding criteria are set out in Directive 98/70/EC as amended (the Fuel Quality Directive). They apply to biofuels and bioliquids produced in the EU and to imported biofuels and bioliquids. A part of these sustainability criteria is a mechanism to ensure that the biofuels and bioliquids used to meet EU targets have greenhouse gas savings of at least 35% compared to the fuels they replace when substituting fossil fuels with biofuels. In order to facilitate compliance with this criterion, the Directive contains default values for greenhouse gas savings for different fuel production pathways.

As a general rule, producers may always cite a default value for the biofuel and the bioliquid they supply, as an alternative to calculating an actual value. However, for raw materials cultivated in the Union, default values may only be used if the raw materials are cultivated in areas included in lists submitted by Member States, where emissions from cultivation can be expected to be lower than or equal to those reported under the Directive. The latter requires the Commission to report on whether a similar approach could be applied for raw materials cultivated in third countries, and this complies with that obligation.

Default values for greenhouse gas emissions: the default values in the Directive divide the greenhouse gas emissions from biofuel and

bioliquids production pathways into three parts: "cultivation", "processing" and "transport and distribution". The "cultivation" element typically contributes 30 – 70 % of overall emissions, depending on the pathway; "processing" is responsible for 25 – 60 %, and the remaining emissions (often relatively minor, normally in the range of: 2 – 20 %) come from "transport and distribution".

The main constituents of the cultivation element are fertiliser production, machinery emissions and N2O emissions from soil. The last of these accounts for 40 – 70 % of the cultivation emissions (in some cases even more), depending on the pathway. The report presents a comparison of total cultivation emissions and N2O emissions from soil together with overall total pathway emissions. Fertiliser production and machinery emissions from cultivation are not expected to be difficult to estimate, but N2O emissions show substantial spatial variation and are difficult to estimate. Different approaches to doing this exist and the uncertainty is considerable. Consequently, the report focuses on the feasibility of reliably estimating regional N2O emissions in third countries.

Status of research in the field of N2O emissions from cultivation of crops: the paper discusses the different ways of modelling N2O emissions: (i) process-based eco-system models replicating the processes and factors that cause emissions in the soil; and (ii) statistical techniques identifying correlations between controlling factors and emissions recorded through field measurements. Both approaches can be used to develop emissions factors such as those presented by the IPCC for accounting of greenhouse gas emissions under the UNFCCC. The paper discusses both models and indicates that they both have shortcomings.

Appropriate action to address the uncertainty of N2O emissions from cultivation in third countries: the understanding of factors influencing N2O emissions from agricultural soils is evolving rapidly, but is still rather limited. A better understanding of the issue is needed before attempts can be made to address the issue in relation to third countries. The Commission has made the results obtained by the current work of JRC available on its website, together with a description of the methodology and the data used. The Commission aims to obtain feedback on the methodology and the data used, in order to improve the modelling, which at a later stage might serve as a basis for a legislative proposal. Of particular relevance is the improved understanding of N2O emissions from crops typically cropped in third countries, and the inclusion of those in N2O models. Statistical data on key parameters, such as soil characteristics, fertilizer use and yields are also limited in some regions and need attention.

Conclusion: the Commission is of the view that, while desirable, it is not yet feasible to set up legally binding lists of areas for third countries where a major component of the underlying calculation is uncertain and can easily be questioned, and where third countries have had no possibility to contribute on the methodology and data used. It is therefore not appropriate, at least at this stage to produce legislative lists for third countries based on the current modelling of N2O emissions from agriculture. However, it is important to enhance the understanding of the topic and survey the data used in view of a new assessment in 2012. The Commission has published the preliminary results of the JRC

work and will use this as the basis for a discussion with third countries in the framework of its dialogue and exchange with them under the

Renewable Energy Directive.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 05/06/2008

The Council held a public debate on key aspects of the climate change and renewable energy legislative package. Ministers confirmed the need to achieve ambitious objectives in the fight against climate change whilst preserving European potential for economic growth.

EU member states and the Commission stressed the importance of reaching a timely agreement with a view to facilitating a broader convergence on a global scale, in the run-up to the international meeting to take place in Copenhagen in December 2009.

The discussions concentrated on key aspects of the package, namely:

On the EU emission trading system (ETS) review:

- the allocation method; redistribution and use of auctioning proceeds and rules for auctioning,
- risks of "carbon leakage": relocation of energy-intensive industries outside the EU,
- EU-wide cap: replacement of the current system of national allocation plans by the setting of an EU-wide cap,
- reference year or period to be used for verified emissions data,
- new entrants reserve: quantity of allowances set aside for new entrants,
- small installations: size of installation to be potentially excluded from the scope of the ETS.

On effort-sharing (amongst member states in sectors not covered by the ETS):

- scope: sectors not to be covered by the EU ETS,
- reference year or period for calculating the reduction targets per country,
- intermediate targets: effectiveness of using indicative or compulsory intermediate targets;
- on cross-cutting issues between EU ETS review and effort-sharing,
- trigger 20-30%: adjustment clause enabling the EU to move from the independent 20% commitment to a more ambitious target to which a future international agreement will commit the EU,
- degree of flexibility for member states to meet their commitments in a cost-efficient way.

On carbon capture and storage (CCS):

- storage permits,
- composition of CO2 stream,
- transfer of responsibility after closure of a storage site,
- modalities of the financial security provision to be made by applicants for storage permits,
- conditions of access to transport networks,
- capture readiness.

On sustainability criteria for biofuels:

- minimum greenhouse gas emission saving requirement,
- environmental and social criteria,
- methodology for calculating the greenhouse gas emission saving.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 03/03/2008

The Council held a policy debate on key aspects of the climate action and energy legislative package with a view to the adoption of political guidelines to be given by the European Council on 13 and 14 March 2008. The European Council conclusions will provide guidance for further examination of the package.

Other questions related specifically to the EU emissions trading system (ETS), the non-ETS sectors and to the proposed framework for geological storage of carbon dioxide. At the end of the meeting, the presidency summarised the outcome of the debate as follows:

- the presentation of the climate action and renewable energy package by the Commission is a welcome response to the objectives and targets endorsed by the EU heads of state and government last year;
- Ministers welcome the direction of the proposed new design features of the EU ETS, such as the increased harmonisation of allocation, including the use of auctioning, as a way of enhancing the cost-effectiveness of the required emission reductions. In this respect, the need to anticipate greater flexibility for the realisation of different objectives was identified;
- carbon leakage remains a key concern that should be addressed appropriately;
- it will be important to clarify the methodology used to determine the reduction of emissions and the objectives in terms of renewable energies;
- work on the ETS review by the EU, the sharing of the non-ETS effort, the framework for storage of carbon dioxide and renewable energy sources must progress at the same rate;
- there is a need to make headway on the technical issues as quickly as possible in order to reach a final agreement with the European Parliament in early 2009 at the latest.

Ministers held an exchange of views on the international aspects of the package with Mr Yvo de Boer, Executive Secretary of the UN Climate Convention. The package contains the following proposals:

- a Directive amending Directive 2003/87/EC in order to improve and extend the EU greenhouse gas emission allowance trading system;
- a Decision on the effort of EU Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020;
- a Directive on the promotion of the use of renewable energy sources;
- a Directive on the geological storage of carbon dioxide.

The legislative package, to be examined under the Parliament-Council codecision procedure, was presented by the Commission with a view to implementing the objectives, targets and commitments undertaken by EU heads of state and government in March 2007:

- a 20% reduction of greenhouse gas emissions by 2020 compared to 1990;
- a 30% reduction in greenhouse gas emissions by 2020 compared to 1990 as its contribution to a global and comprehensive post-2012 agreement;
- saving 20% of the EU's energy consumption compared to projections for 2020;
- a 20% share of renewable energies in overall EU energy consumption by 2020;
- a 10% minimum target for the share of biofuels in overall EU transport petrol and diesel consumption by 2020;

- to develop and define the necessary technical, economic and regulatory framework to bring environmentally safe carbon dioxide capture and sequestration to deployment with new fossil-fuel power plants.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 23/01/2008 - Document attached to the procedure

In a communication entitled “Europe's climate change opportunity”, the Commission recalls that 2007 marked a turning point for the European Union's climate and energy policy. Europe showed itself ready to give global leadership: to tackle climate change, and to face up to the challenge of providing secure, sustainable and competitive energy.

Two key targets were set by the European Council:

1) A reduction of at least 20% in greenhouse gases (GHG) by 2020 – rising to 30% if there is an international agreement committing other developed countries to "comparable emission reductions and economically more advanced developing countries to contributing adequately according to their responsibilities and respective capabilities";

2) A 20% share of renewable energies in EU energy consumption by 2020.

The European Council agreed that the best way to reach such ambitious goals was for every Member State to know what was expected, and for the goals to be legally binding. This meant that the levers of government could be fully mobilised, and the private sector would have the long-term confidence required to justify the investment needed to transform Europe into a low-carbon, high energy efficiency economy.

At the United Nations Climate Change Conference in Bali in December 2007, the European Union was able to play a pivotal role in securing agreement on the roadmap towards a new comprehensive agreement on cutting emissions to be reached by 2009.

The next step is to translate the European Union's political direction into action. The package of measures proposed by the European Commission thus represents a coherent and comprehensive path to preparing Europe for the transition towards a low-carbon economy.

The proposals rest on **five key principles**:

1) The targets must be met: to assure Europeans of the reality of change, to convince investors to invest, and to show the EU's seriousness of intent to partners worldwide. The proposals must therefore be effective and strong enough to be credible, with mechanisms for monitoring and compliance in place;

2) The effort required from different Member States must be fair. In particular, some Member States are more able than others to finance the necessary investments. The proposals must be flexible enough to take account of Member States' different starting points and different circumstances;

3) The costs must be minimised: with a design tailor-made to limit the price tag of adaptation for the EU economy. The costs of change and the consequences for the Union's global competitiveness, employment and social cohesion need to be kept at the forefront in designing the right structure;

4) The EU must drive on beyond 2020 to further reduce greenhouse gases to meet the target of halving global emissions by 2050. That means stimulating technological development and ensuring that the system can benefit from newly available technologies;

5) The EU must do everything possible to promote a comprehensive international agreement to cut greenhouse gas emissions. The proposals are conceived to show that the Union is ready to take further action as part of an international agreement, and will establish more ambitious targets in the reduction of greenhouse gas emissions (stepping up from the 20% minimum target to a more ambitious 30% reduction).

In its Communication, the Commission lists the main instruments to achieve the set objectives:

Updating the Emissions Trading System (ETS): the European Union Emissions Trading System has proved a pioneering instrument to find a market-based solution to incentivise cuts in greenhouse gas emissions. However, a review of the ETS has shown that it needs to be strengthened and updated if it is to meet its new objectives.

Reducing greenhouse gas emissions beyond the ETS: since the revised ETS will only cover less than half of the GHG emissions, an EU framework is needed for national commitments to cover the remaining emissions – covering areas like construction, transport, agriculture, waste and industrial plants falling under the threshold for inclusion in the ETS. The target for these sectors would be a 10% reduction in emissions from 2005 levels, with specific targets for each Member State .

Promoting renewable energy: today, the share of renewable energy in the EU's final energy consumption is 8.5%. An increase of 11.5% is needed on average to meet the target of 20% in 2020. Member States enjoy different possibilities to deploy renewable energy, and the efforts required to reach the 20% share of renewable energy in the EU's overall energy consumption need to differ between the Member States. The Commission's proposal is based on a methodology according to which half of the additional effort is shared equally between Member States. The other half is modulated according to GDP per capita. The European Council also decided to fix a specific minimum target for sustainable biofuels of 10% of overall petrol and diesel consumption.

The role of energy efficiency: the EU goal of saving 20% of energy consumption by 2020 through energy efficiency is a crucial part of the puzzle. It would save the EU some € 100 billion and cut emissions by almost 800 million tonnes a year. Transport, buildings and more efficient power generation, transmission and distribution all offer opportunities which need to be stimulated through a mixture of legislation and information. Product standards can be used to bring more efficiency to a wide range of goods, from televisions to cars and heaters to streetlights. Better labelling also plays an important role.

Looking beyond 2020 - galvanising the potential for deeper cuts in emissions: over the past ten years, technology has developed swiftly. Renewable energy technologies are making wind and solar energy more commercially viable than ever before. Energy efficiency is now being mainstreamed into products. But this process must be accelerated if Europe's goals for climate and energy are to be met and if the commercial potential of these technologies is to be exploited to the full. Climate change and energy have been earmarked as likely primary areas on which the European Institute of Technology could focus its attention.

Carbon capture and storage (CCS): for Europe,the target of halving 1990 GHG emissions by 2050 will never be met unless the energy potential of coal can be exploited without increasing emissions. That is why the European Council backed early action to make CCS the technology of choice for new power plants, including the setting up of up to 12 demonstration plants by 2015. European legislation is needed to provide the right framework for CCS to work in the internal market and factor the benefits of CCS for the ETS.

Bringing about change: to meet the EU's goals at minimum cost, the Commission's proposals build on the experience of the Emissions Trading System and leave the market to drive as much as possible. It also retains as much flexibility for national decision as possible within the constraints of specific national targets. Member States should have the freedom to determine their own energy mix and to promote renewable energy in different ways. Finally, new state aid guidelines will provide a framework setting out how Member States can use aid to promote a higher level of environmental protection, notably in the field of energy.

The particular needs of energy-intensive industries: energy-intensive industries face a particular challenge during the transition to a climate-friendly economy. A comprehensive international agreement would address this problem. However, in the absence of such an agreement, or of significant unilateral action by competitors in energy-intensive sectors, the EU must take action to ensure a level playing field. Consequently, the Commission’s proposals put in place provisions to allow action to be taken.

The capacity to invest: the European Council recognised that the ambition of the proposals will make real demands on all Member States. The Commission has therefore carefully assessed the economic impact of the proposals against the capacity of each Member State to make the investment required. With the overall cost to the European economy estimated at just under 0.5% of GDP by 2020, the Commission believes that no Member State should be asked to make an investment which diverges too far from this broad average. With this in mind, the specific requirements asked of each Member State have been modulated to allow for a realistic level of investment from lower-income Member States.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 31/01/2011 - Follow-up document

In accordance with Directive 2009/28/EC (the Renewable Energy Directive) the Commission presents a Staff Working Document reviewing European and national financing of renewable energy, which accompanies the renewable energy progress report. It recalls the new European framework for promoting renewable energy, including legally binding national targets for 2020, such that the EU will reach a 20% share of renewable energy overall. Europe has established the regulatory framework for creating a low carbon economy, starting with pricing greenhouse gas emissions and a major drive to develop renewable energy technologies and deploying them in all sectors of our economy. However, providing the stable regulatory environment necessary to encourage investment in this industry, in all Member States, is not easy. Changes are needed to planning and building regimes and to electricity grids. In addition, the financing of the growth of the renewables sector needs more attention. Striving to compete with incumbent energy companies, technologies and traditional infrastructure, with fossil fuels and nuclear power still receiving four times the level of subsidies, renewable energy is often more expensive than traditional sources.

The document reviews the instruments available for filling this investment need and the European and national support instruments used. It contains suggestions for reform and improvement. It also explores actions to improve cooperation regarding national renewable energy support schemes, to ensure they are consistent with technological progress and do not hinder innovation or competitiveness.

The analysis undertaken for the Commission found that annual capital investment in renewable energy (including 62% of new power investment) would need to double to EUR 70bn to ensure we achieve our goals. Whilst the production cost of most renewable energy technologies is declining (wind production costs have declined by 20% over the 9 years to 2006 and solar PV by 57%), the growing scale and market share of the renewable energy sector requires additional funding to fill the gap. Moreover, whilst some forms of renewable electricity generation have already reached "grid parity" (off grid wind and PV, large hydro, biomass/waste plants, in good circumstances, can be as cheap as grid electricity), widespread grid parity (and the consequent phasing out of subsidies) will only occur after 2020.

In addition to the choice of technology, location and scale, the financing instrument used can also affect costs. Supporting investment can reduce capital costs; certain types of operating support can reduce project revenue risks and so reduce costs. Coordinated action across Member States can help exploit resources more efficiently and so create savings. Analysis undertaken for the Commission suggests that choosing more efficient technologies and sites, mitigating risk and coordinating resource development across Europe rather than from a national perspective, could reduce costs by as much as 10%; reducing the annual investment need from €70bn to €62bn. The report discusses the whole toolbox of instruments available, and looks at ways of improving the functioning of national systems for supporting renewable energy, in the electricity, heating and transport sectors

Despite the strong political support, ambitious European policy and legal framework (albeit with lagged implementation in some Member States), the EU financial support given to renewables is relatively low. For the period 2007-2009, funds spent on renewable energy amounted to roughly EUR 9.8 bn, (EUR 3.26bn/a), the bulk of which in the form of loans from the European Investment Bank.

The document states that a reorientation of EU budget priorities is appropriate. This is possible both in terms of more focused use of existing instruments and in developing new European instruments. The report discusses funds from both Structural funds and Cohesion policy, the European Agricultural Fund for Rural Development; the EU R&D budget, and EIB funding. With the wide range of European instruments used to finance renewable energy projects with a European dimension, there is scope for ensuring that in the forthcoming review of the European financial perspectives maximum use is made of targeted and effective instruments. Indeed, in its recent budget review the Commission emphasised the catalytic role European funds should play in leveraging public and private financial resources. In this context, following the Commission's proposal for the next multi-annual financial framework, the Commission intends to maximise the leverage of private capital into energy projects of regional European interest. It will strive to facilitate the uptake of the Renewable Energy Directive's cooperation mechanisms, the intended use of which is disappointingly low. This would improve regional cooperation and begin the harmonisation of support schemes. It could ensure savings of as much as €10bn annually16 and that renewable energy starts to be integrated into the European market.

At the national level, the reform of financing instruments occurs regularly, in a manner which generally strives to avoid creating investor uncertainty. However such reforms occur in an uncoordinated manner. The Commission intends to lead national cooperation on financing renewables, based on the new framework for Member State cooperation contained in the Renewable Energy Directive. In this way the cost of achieving the targets whilst promoting the growth and future prosperity of the European renewable energy industry can be minimised.

To ensure the achievement of these objectives, reflecting the conclusions of the Communication on renewable energy, action could include:

- preparation of guidelines for more harmonised reform of national renewable energy support schemes, through the use of the Directive's cooperation mechanisms;
- facilitation of the development of cooperation mechanisms both between Member States and with third countries (e.g. in the context of large scale industrial renewable energy initiatives such as the Mediterranean Solar Plan and Desertec Initiative);
- promotion of reforms in the southern Mediterranean to facilitate the growth of renewable energy and the scope for third country cooperation post 2020;
- the review of European Structural Funds and Cohesion Fund in the context of the EU Budget Review to examine the scope for an improved contribution of the funds to EU energy and climate targets in line with the Europe 2020 Strategy;
- continued work with financial institutions to improve European support for private investment in renewable energy projects;
- expanded use of innovative financial instruments as a device for achieving greater private sector leverage for European policy priorities and maximising the EU value added of financing in the energy sector.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 31/01/2011 - Follow-up document

In accordance with Directive 2009/28/EC (the Renewable Energy Directive), the Commission presents a staff working document reporting n the operation of the mass balance verification method for the biofuels and bioliquids sustainability scheme. The report accompanies the Communication reporting on progress towards the 2020 target on renewable energy .

The Renewable Energy Directive sets out sustainability criteria for biofuels and bioliquids. For biofuels, corresponding criteria are set out in Directive 2009/30/EC (the Fuel Quality Directive.). They apply to biofuels and bioliquids produced in the EU and to imported biofuels and bioliquids. The sustainability scheme became operational on 5 December 2010, the deadline for Member States to transpose the Renewable Energy Directive.

The mass balance system is a key element of the **sustainability scheme**, providing the method by which a connection is made between information or claims concerning raw materials or intermediate products and claims concerning final products. Given that the scheme became operational on 5 December 2010, little information is currently available regarding its operation on the market. Likewise, there is little information regarding the mass balance verification method.

The paper concludes that the mass balance system is a stringent system. It is clear that it requires farmers and industries to adapt their practices. In terms of integrity and effectiveness, there is at present no potential to allow for verification methods for the biofuels and bioliquids sustainability scheme that are less stringent than the mass balance system laid down in the Directives. In line with the Directives the Commission will assess again by 2012 whether there is such potential.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 01/02/2017 - Follow-up document

In line with the requirements set out in the Renewable Energy Directive, this report provides a comprehensive overview of the deployment of renewable energy in the EU. It also includes an assessment of the administrative obstacles and the environmental sustainability of biofuels.

The promotion of renewable energies is **an essential part of the EU's energy policy**, which plays a leading role in the implementation of the strategic framework of the energy union.

Progress made by the EU-28: the report shows that with **a 16% share** of final energy consumption in 2014, the EU and the vast majority of its Member States are on track in terms of deploying Renewable energy sources. Projections show that the EU as a whole should **reach its 20% target by 2020**.

However, estimates for 2015 indicate that some Member States (notably France, Luxembourg and the Netherlands) will have to increase their shares in 2016 in order to maintain their respective trajectories.

In addition, countries such as Ireland, Luxembourg, the Netherlands and the United Kingdom may need to strengthen their cooperation with other Member States using the mechanisms provided for this purpose, such as statistical transfers to meet their binding national targets in a timely manner.

Progress was most rapid in the electricity sector, with the largest contribution in absolute figures recorded in the heating and cooling sector. Progress in transport has been the slowest so far.

Heating and cooling: this sector accounts for about half of final energy consumption at EU level and remains the most important sector in terms of energy consumption. In 2015, about **18.1%** of the heat and cold produced in the EU came from renewable sources, with **solid biomass** being by far the most important (82%). Production from **heat pumps** also steadily increased, exceeding the indicative trajectory indicated in the national action plans.

Electricity: this sector has experienced the **strongest growth** in the share of renewable energies, which currently accounts for **28.3%** of total electricity generation. By 2015, **hydropower** still accounted for the largest share of renewable electricity (38%). The deployment of **wind power** has more than quadrupled over the period 2004-2015. This technology currently accounts for about one-third of renewable electricity. Photovoltaic solar power has grown rapidly and in 2015 represented 12% of electricity from renewable sources. In 2015, 38% of **photovoltaic electricity** in the EU-28 was produced in Germany, Italy and Spain.

Transport: the share of renewable energies in this sector was 5.9% in 2014 (estimated at **only 6% in 2015**), while the specific target for 2020 is 10%. Biodiesel (the main biofuel used in transport in the EU) and bioethanol (the second renewable energy source used in transport) have not reached the expected level of use. This is due to a number of difficulties, including regulatory uncertainty and the delayed adoption of advanced biofuels.

Administrative obstacles: Member States have made progress in reducing the administrative burden since the entry into force of the Renewable Energy Directive. However, this progress is uneven and **improvements are possible** with regard to the automation of licensing after the expiry of the deadline for the administrative procedure and the setting up of one-stop shops.

Sustainability of biofuels: the risks of impacts associated with **indirect land use change** (ICSW) remain a cause for concern. The most recent CIAS modelling analysis indicates that by 2020 EU biofuel policy could lead to an **expansion of cultivated land** of 1.8 Mha in the EU and 0.6 Mha in the rest

of the world, with 0.1Mha to the detriment of forests. The Commission has adopted proposals to gradually reduce the share of biofuels obtained from food crops after 2020, while promoting their gradual replacement by advanced biofuels and renewable electricity.

The report concludes that the existence of significant unexploited potential in the heating and cooling and transport sectors calls for greater action as set out in the proposal to recast the renewable energy directive for the period after 2020, In the framework of the “Clean energy for all Europeans” package, presented in November 2016.

This package confirms the European Commission’s commitment to make the European Union the **world's leading provider of renewable energies** and to offer equitable conditions for energy consumers.

Promotion of the use of energy from renewable sources. Renewable Energy Directive

2008/0016(COD) - 09/04/2019

This report provides the latest information on progress up to 2017 towards the 20% renewable energy target by 2020 and aims to meet the European Commission's other reporting obligations under Directive 2009/28/EC on the promotion of the use of energy from renewable sources (RED I) and the Directive on indirect land use change (ICLS).

The EU has made it a political priority to become the world leader in the renewable energy sector.

Progress made by the EU-28

The report noted that in 2017, the EU reached a share of 17.52% of renewable energy in gross final energy consumption, against a target of 20% for 2020, and above the indicative trajectory of 16% for 2017/2018. In addition, the EU as a whole is also above the slightly more ambitious trajectory defined by Member States themselves in their National Renewable Energy Action Plans (NREAPs).

The EU is on track to reach its 2020 target.

With regard to individual sectors, at EU level the renewable energy share in electricity and heating and cooling has been systematically above the levels defined by Member States in their NREAPs, while for transport, the share of renewables is basically following the planned trajectory.

In terms of the absolute consumption of renewable energy, the heating and cooling sector provides the largest contribution with a total of 102 Mtoe in 2017, closely followed by renewable electricity, with a consumption of 86.7 Mtoe, and the transport sector, with a consumption of 23.65 Mtoe.

Projections

The report notes that the rate of increase in the share of renewable energy has slowed since 2014.

In order to assess the feasibility of 2020 target achievement, a modelling exercise has been carried out for the Commission. According to this modelling, current or planned renewable energy initiatives would achieve a share of 18.1% to 20.7% of renewable energy in 2020 at EU level.

While the EU is still on track to meet its renewable energy 2020 targets, efforts should be stepped up in the remaining period until 2020 to ensure this is the case, also in connection with expected higher energy consumption in the future.

In 2017, 11 Member States already have a renewable energy share above their respective 2020 targets. 10 other Member States met or exceeded their average indicative trajectory from the Renewable Energy Directive for the two-year period 2017-2018. There are, however, 7 Member States (Belgium, France, Ireland, Luxembourg, The Netherlands, Poland and Slovenia) that would need additional efforts in order to comply with the average 2017-2018 indicative trajectory towards 2020.

Most Member States are encouraged to:

- continue stepping up efforts to both deploy renewables across the three sectors, while at the same time reducing energy consumption;

- consider the possibility of using statistical transfers, as foreseen in the Renewables Directive, either as a way to ensure target achievement when there is a deficit, or to sell their potential surpluses to other Member States. The Commission stands ready to actively support Member States in this regard and facilitate the necessary cooperation.

The report also notes the usefulness of the work of the Task Force on Energy Efficiency launched by the Commission, alongside the new renewable energy auctions already announced in several Member States for instance in France, the Netherlands, and Portugal, or the wider use of corporate power purchase agreements through which European companies bought a record amount of wind power capacity in 2018.

Going forward, according to their draft 2030 National Energy and Climate Plans, all Member States have already tabled their national contributions to the EU level binding target of at least 32 % which would make renewables the backbone of the Union energy system. By June 2019, the Commission will assess whether these national contributions, and the associated policies and measures, are in line with the EU ambition, and, if appropriate, issue recommendations to Member States.