

Title of the measure:	EU24 Promotion of Electricity from Renewable Sources (Directive 2001/77/EC)
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General description

The target of using 21% of renewable energy sources for electricity production in 2010 has been formulated and adopted by the Directive 2001/77/EC on the promotion of the electricity produced from renewable energy source in the internal electricity market. This Directive set differentiated target levels for each Member State and stipulated that Member States have to provide better grid access for renewable energy generators, streamline and facilitate authorisation procedures and establish a system of guarantees of origin. It further stated, that the Commission has to present a report on experiences gained with the different mechanisms applied in the Member States not later than October 2005. The report should assess the success, cost effectiveness of the support systems promoting the consumption of electricity from renewable source. The directive has been repealed by the Directive 2009/28/EC of 23 April 2009 on promotion of use of energy from renewable sources.

Background

The promotion of electricity from renewable energy sources has been at high priority in EU due to security and diversification of energy supply, environmental protection and social and economic unity. In 1997 the “White Paper laying down a Community strategy and action Plan” set a target of 12% of gross energy consumption from renewable energy sources for EU-15 by 2010, of which electricity would constitute 22.1%. the directive also comprises of a vital part of the package of measures needed to comply with the commitments made by the Union under Kyoto Protocol on the reduction of greenhouse gas emissions. The directive targets a boost to stepping up the share of new technologies in producing electricity from renewable sources while respecting the principles of internal market.

Support Schemes

Commission is to assess the application of mechanisms used in member states according to which an electricity producer receives or indirect support. This can if necessary accompanied a proposal for a Community Framework with regards to support schemes for electricity production from Renewable energy sources. Such a proposal must cover following intentions;

- a) contribution to the achievement of the national indicative targets;
- b) compatibility with the principles of the internal electricity market;
- c) taking into account the characteristics of different sources of renewable energy;
- d) promoting the use of renewable energy sources in an effective way, and be simple and, at the same time, as efficient as possible;
- e) including sufficient transitional periods for national support systems of at least seven years and maintain investor confidence.

Guarantee of origin of electricity produced from renewable energy sources

Member states are obliged to ensure the guarantee of origin of electricity from renewable energy sources according to objective, transparent and non-discriminatory criteria set by each member state. A guarantee of origin should specify the energy source from which the electricity was produced, stating dates and place of production, and serve to enable producers of electricity from renewable sources that the electricity they produce from renewable energy sources is in compliance with this directive.

Grid System Issues

Member states are obliged to take measures to ensure the transmission and distribution system operators guarantee the transmission and distribution of electricity produced from renewable energy sources. They can also provide the priority access to the grid system of electricity produced from renewable energy sources.

Impact evaluation

A set of policy options and measures has been identified to be implemented in order to meet the Community's objectives for renewable energy in 2010. The Directive on promotion of electricity as well as the Report on support of energy from renewable sources are part of the policy options in the Biomass Action Plan.

The report COM(2005) 627 from the Commission on support of electricity from renewable energy, adopted in December 2005, concludes that more than half of the Member States are not giving enough support to green electricity. It is considered that direct support measures will remain essential in the future to ensure sufficient market penetration of green electricity and Member States are called on to optimise their support schemes and remove barriers. The Report analysed the different support mechanisms used by Member States. It found that feed-in tariffs, which are fixed prices for green electricity and used in the majority of Member States, were in general cheaper and more effective than so called quota systems, especially in the case of wind energy. One reason for quota systems being more expensive is probably the higher risk for investors due to immature green electricity markets. It is concluded that it is premature to propose a harmonised European support scheme. Competing national schemes can be healthy at least in a transitional period, as more experience needs to be gained. Secondly industry currently needs regulatory stability to make investments and develop renewables. In the short and medium term, Member States are therefore recommended to coordinate the existing schemes at European level.

The set of policy options have been grouped in a Biomass Action Plan scenario (BAP) and were compared to business as usual scenario (BAU) and a no further EU action scenario. The results of the two first scenarios in the impact assessment (SEC(2005)1573), are represented in Table 1.

	Due to additional liquid biofuel use in mtoe/yr	Due to additional bio-electricity generation in mtoe/yr	Due to additional heat generation from biomass in mtoe/yr	Total
Crude oil substitution potential in mtoe/yr				
Scenario BAU	7.8	0	1.4	9.2
Scenario BAP	23.5	0	15.0	38.5
Additional fossil primary energy substitution potential in mtoe/yr				
Scenario BAU	-2.8	16.6	1.5	15.4
Scenario BAP	-8.4	36.1	16.6	44.4
Total fossil primary energy substitution potential in mtoe/yr				
Scenario BAU	5.0	16.6	2.9	24.5
Scenario BAP	15.2	36.1	31.6	82.9
Difference BAP-BAU	10.1	19.5	28.7	54.8

Table 1: Fossil primary energy substitution potentials for the year 2010, divided by scenario BAP and BAU

In short, the two scenarios offer indicative fossil primary energy savings of 25 mtoe/year (BAU) and 83 mtoe /year (BAP) respectively in 2010. Full delivery of the estimated biomass contribution to achieve White Paper targets in EU-25 would generate an additional 55 mtoe/yr fossil primary energy substitution potential (as compared to the BAU scenario). Compared to 2002, the BAP scenario would reduce the European consumption of crude oil by 39 mtoe/yr.

The impact on greenhouse gas (GHG) emissions has been evaluated in Table 2.

Table 2: GHG emission reduction potential (Impact assessment, SEC (2005)1573)

	Due to additional liquid biofuel use in million tCO ₂ -eq/Yr	Due to additional bio-electricity generation in million tCO ₂ -eq/Yr	Due to additional heat generation from biomass in million tCO ₂ -eq/Yr	Total
Scenario BAU	-13.2	-40.0	-7.4	-61
Scenario BAP	-39.7	-86.9	-82.0	-209
Difference BAP-BAU	-26.6	-46.9	-74.6	-148

In short the two scenarios offer the total reduced GHG emissions in 2010 of -61 million tCO₂-eq/yr (BAU) and -209 million tCO₂-eq/yr (BAP) respectively. It means that full delivery of expected biomass share to achieve White Paper targets in EU-25 would result in an additional reduction of GHG emissions by -148 million tCO₂-eq/yr in 2010 (as compared to BAU scenario).

The contribution to CO₂ reduction of biomass use for electricity seems to have the largest impact among the three options considered.

Table 3: CO₂ and energy savings

Ex-post evaluation	1995	2000		
CO ₂ (kt)				
Energy ()				
Ex-ante evaluation	1995	2000	2010	
CO ₂ (Mt)			148	
Energy (mtoe)			55	

Interaction of measures

- EU Strategy for Biofuels' (COM(2006)0034),
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market ,
- Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport ,
- Resolution of 14 February 2006 on heating and cooling from renewable sources of energy ,

References

- Press Release: Renewable energy: European Commission proposes ambitious biomass and biofuels action plan and calls on Member States to do more for green electricity, Reference: IP/05/1546, 07/12/2005
- Directive 2001/77/EC on the promotion of the electricity produced from renewable energy source in the internal electricity market (legislation in force), Official Journal n°L283
- Report: Communication from the Commission, The support of electricity from renewable energy sources COM(2005) 627 final, 07/12/2005,
http://ec.europa.eu/energy/res/legislation/support_electricity_en.htm
- Impact assessment Biomass Action Plan, SEC(2005)1573,

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- Impact assessment SEC(2005) 1571, the support for electricity from renewable energy sources, 7.12.2005.
- Directive 2009/.../ on the promotion of the use of energy from renewable sources (EC 2008/0016 (COD)), <http://www.euractiv.com/en/energy/enforcement-eu-renewables-lawfaltering/article-181863>
- Renewable Energy: White Paper laying down a Community strategy and action Plan
http://europa.eu/legislation_summaries/other/127023_en.htm
- Renewable Energy: the promotion of electricity from renewable energy sources
http://europa.eu/legislation_summaries/energy/renewable_energy/127035_en.htm