

## Opinion of the European Economic and Social Committee on Wood as an energy source in the enlarging Europe

(2006/C 110/11)

On 11 July 2005, the European Commission, on behalf of Commissioners Olli Rehn, Mariann Fischer Boel and Andris Piebalgs, and in accordance with Article 262 of the Treaty on the European Union, asked the European Economic and Social Committee to draw up an opinion on *Wood as energy source in the enlarging Europe*.

The Section for Agriculture, Rural Development and the Environment, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 27 February 2006. The rapporteur was Seppo Kallio.

At its 425th plenary session, held on 15 and 16 March 2006 (meeting of 15 March), the European Economic and Social Committee adopted the following opinion by 130 votes in favour and six abstentions.

### 1. Conclusions

1.1 The European Economic and Social Committee (EESC) considers that use of wood as a fuel is largely a question of harnessing unused renewable energy potential<sup>(1)</sup> in Europe and cutting emissions of the greenhouse gas carbon dioxide. It is also important to bear in mind the role of forests in safeguarding the public interest (protection function and biodiversity). Increased use of woodfuels also makes unexploited raw material available for industrial processing. Using wood energy helps to combat climate change, improve the EU's low level of energy self-sufficiency and enhance security of supply, all of which are objectives of EU energy policy. However, wood can make only a limited contribution to solving energy problems. In addition, other alternative energy sources need to be developed and steps taken to increase energy savings, including heat insulation of buildings. Wood binds atmospheric carbon dioxide while it is growing. One cubic metre of wood binds on average 800 kg of carbon dioxide. Fundamentally, high forestry stocks are thus highly significant for the long-term sequestration of carbon in the forest. Good forest management and ensuring forest growth help to boost carbon stocks. Increased use of wood energy would replace non-renewable energy reserves and at the same time reduce fossil fuel emissions. The use of wood for energy purposes contributes to more effective forest management and higher forestry stocks in the long term.

1.2 The EESC also considers that the increased use of wood-fuel requires a long-term strategy based on the removal of regulations that prevent and restrict its wider use. A level playing-field must be created for the use of wood energy by removing tax and aid arrangements that favour fossil fuels. A European specification and classification for quality of solid wood fuels — CEN/TS 14961 — has been published.

<sup>(1)</sup> Directive 2001/77/EC, OJ L 283, 27.10.2001, p. 35, Article 2(b).

1.3 The EESC believes that it is important that sustainable use of timber should increase in every country and that the fuel market be opened up to the industry's by-products, timber obtained from the forest for energy production and processed woodfuels. Fuel production and use is often closely associated with the forestry and timber product industry. An international market has also emerged for novel types of woodfuels in the form of pellets, briquettes and bio liquid fuels. In order to develop the woodfuel market economic instruments are required that also enable new operators to enter the market. Economic instruments can help to increase demand for and supply of wood. A carbon dioxide tax on fossil fuels and a low VAT rate on woodfuel would boost demand for wood energy. Investment aid can be used to increase energy producers' demand for woodfuel. In addition, more needs to be done to promote publicity about woodfuels, training, and research and development activities. Economic instruments should be focused particularly on activity outside the emissions-trading sector. Transfer of technology and good practice and the creation of a communication strategy could be especially important forms of support in the new Member States.

1.4 The EESC considers that harnessing and mobilising this unexploited resource requires operators that can survive financially in a properly functioning market. In countries where the market is undeveloped it must be possible to help operators survive financially by providing them with temporary aid, e.g. from the Rural Development Fund. It is vital to support forest-owners' organisations, local entrepreneurs and small industry.

1.5 The EESC would like to see efforts made to increase demand for woodfuels by means of environmentally-oriented economic instruments that treat different users equally and encourage the use of wood fuel in all market segments: domestic heating with firewood and processed woodfuels; heating of large individual buildings; plants producing district heating and electricity for villages, municipalities and towns; naturally, within the forestry industry; and in other industrial

plants using heat and electricity that have local and regional access to woodfuel. The use of larger quantities of wood as an energy source should take place only when all heat insulation possibilities have been used and a heating plan involving other alternative energy sources (such as solar energy) has been drawn up.

1.6 The EESC feels that special initiatives are needed to launch business activities involving the production of woodfuels, heating with woodfuel and electricity generation in almost all the Member States, but in the new Member States and accession countries in particular, where forest holdings are small and there is a low degree of organisation among private forest owners and low use of forestry resources. The barriers to entry are often too high. Lowering them would increase business activity and stimulate the creation and development of new markets. The EU Structural Funds should be actively used to initiate business activity and create local and regional markets.

1.7 The EESC considers that all biomass fuel should be treated equally. The competitiveness of wood among biomass fuels must not be jeopardised by instruments in other EU policy areas. With current technology, wood biomass is suitable for producing all types of energy, and also as a raw material for transport fuel.

1.8 The EESC considers that agreements and provisions that limit freedom of movement and other trade obstacles for wood-based fuel within the European Union should be abolished. Wood can play a significant role in stimulating competition in the energy sector. In particular it can compete with other sources of energy at local and regional level.

1.9 The EESC notes that there is a lack of awareness of the potential and use of woodfuel resources in the European Union. Stocktaking of wood energy resources must be improved in all present and future Member States as this information constitutes the basis for sustainable development. In this a differentiated approach is needed. Thus in the large central European deciduous forest areas an adequate wood potential should be left standing to ensure the variety of forest species. There is not enough information about forestry resources that cannot be used by the industry because of their location. These resources should therefore be clearly defined, classified and standardised so as to avoid distortions within the timber trade in the EU. National inventories of woodfuel poten-

tial and monitoring of its use are needed, and the opportunities it offers should be investigated more closely on a uniform basis. This would make it possible to set operational objectives and to measure the results of different instruments.

1.10 The EESC considers that increased use of wood as fuel is important in some regions in the control of forest fires caused by humans in cultivated conifer monocultures. More intensive use — especially for energy production — probably could help to reduce the risk and occurrence of forest fires.

1.11 Research on selecting effective species and ecotypes, intensive cultivation methods and shortened production cycles should be integrated into the programme for exploiting wood as an energy source. The plantation aspect of forestry should be developed. The search for effective methods of obtaining wood energy should not adversely affect the maintenance of biodiversity or cause any problems for local and regional water resources management. The EESC feels that it is necessary to develop combustion technology and the technology and logistics needed to use woodfuel from forests. Lasting results can be achieved by supporting research and development, information dissemination and technology transfers. Common European standards must be established for small solid-fuel boilers, so that competition is not impaired.

1.12 The EESC believes that more information should be provided about the potential uses of wood energy. This applies to the whole sector, from use of pellets in private homes to large industrial and municipal plants, where wood chips and by-products are used. In many modern combined heat and power plants co-firing with other solid fuels is possible.

1.13 Use of wood-based fuels, by-products of the forest industry and logging residue (crowns, branches, stumps and low-grade timber from thinnings) would boost the profitability of sustainable forestry and the competitiveness of the forestry sector without significantly endangering the forest industry's raw-material supplies or jobs in the forestry sector or wood-based industries. Increased use of wood energy would also make an important contribution to the forestry sector's ability to meet the Lisbon Strategy targets.

1.14 For the production of wood as an energy source use should also be made of areas which are excluded from agricultural use (afforestation as 'energy woods').

## 2. General

2.1 The European Union does not have a common energy policy. In recent years decisions have been taken concerning the market in electric energy (96/92/EC<sup>(2)</sup>) and natural gas (98/30/EC<sup>(3)</sup>), security of supply, greater use of renewable energy forms and environmental issues connected with energy production. There has been a failure to achieve a uniform level of taxation of carbon dioxide emissions from fossil fuels that would appreciably encourage use of renewable energy.

2.2 The 1997 White Paper<sup>(4)</sup> sets the target of increasing the use of renewable energy from 45 Mtoe in 1995 to 135 Mtoe in 2010. The objective was set for the EU15 and corresponds to an increase in the proportion of renewable energy from 5.2 % to 12 % by 2010. The proportion was 6 % in 2001. At best, it could reach 10 %, but in the worst case scenario it could be 8 %. This shows that the measures taken have not been sufficient to put energy development on the right track with sufficient speed. A communication from the Commission<sup>(5)</sup> made a similar assessment.

2.3 The 2000 Green Paper 'Towards a European strategy for the security of energy supply'<sup>(6)</sup> expressed a strong desire to reduce the need for Europe to import energy and to increase self-sufficiency. Self-sufficiency is currently about 50 %, which — from a strategic point of view — is too low.

2.4 Directive 2001/77/EC<sup>(7)</sup> on the promotion of electricity produced from renewable energy set a renewable electricity target for the internal market of 22 % by 2010. Evaluations of measures taken and follow-up of results show that the figure will only be 18 %-19 % by the target date. There has been a clear increase in the proportion of electricity produced from biomass. However, there is considerable variation between countries.

2.5 Directive 2003/30/EC<sup>(8)</sup> on the promotion of the use of biofuels sets a target of 5.75 % of all fuels by 2010. The intermediate target was 2 % by 2005 but the outcome was only 1.4 %.

2.6 The directive on taxation of energy products and electricity (2003/96/EC<sup>(9)</sup>) enables Member States to exempt wood-fuels from taxation or to apply a lower tax rate. This makes full

or partial tax exemption for biofuels possible, and the overall tax can even be lower than statutory minimum levels. Tax exemption can be granted for at most six years at a time. Tax concessions cannot be granted after 31 December 2012 and under the directive the tax concessions granted cease to apply by 2018.

2.7 A directive on emissions trading in the EU (2003/87/EC<sup>(10)</sup>) was adopted in the autumn of 2003. The so-called 'link' directive (2004/101/EC<sup>(11)</sup>) was adopted in September 2004 and makes it possible to trade emission rights in development projects outside the European Union (CDM — Clean Development Mechanism) or between industrial countries (JI — Joint Implementation).

2.8 In December 2005, the Commission issued a communication entitled *Biomass Action Plan*<sup>(12)</sup>, which is intended to accelerate and enhance the use of bioenergy in the Member States.

2.9 Most biomass exploited for energy production is used to produce heat. A directive to promote the use of biomass in heat production should be drawn up.

2.10 The best way to achieve energy efficiency is to produce electricity and heat together in the same plant. Cogeneration is particularly important in the production of district heating and in efforts to increase the use of biomass as fuel. Directive 2004/8/EC<sup>(13)</sup> deals with the promotion of cogeneration of heat and power.

2.11 The European Union's 7th Research Framework Programme (2007-2013) is currently being prepared. The European forestry sector has established a 'Forest-based sector technology platform', whose research programme also provides for major investment in research and development in the field of wood energy.

2.12 Competition in the energy market has developed very differently in the various parts of Europe. This is true of both production and distribution, especially within the electricity sector, but also applies in many cases to the sale of fossil fuels. Competition within the energy sector is unsatisfactory. As a local and regional fuel, wood could generate more competition on the market.

<sup>(2)</sup> Directive 96/92/EC, OJ L 27, 30.1.1997, pp. 20-29.

<sup>(3)</sup> Directive 98/30/EC, OJ L 204, 21.7.1998, pp.1-2.

<sup>(4)</sup> COM(97) 599 final, 26.11.1997.

<sup>(5)</sup> COM(2004) 366 final, 26.5.2004.

<sup>(6)</sup> COM(2000) 769 final, 1.12.2000.

<sup>(7)</sup> Directive 2001/77/EC, OJ L 283, 27.10.2001, pp. 33-40.

<sup>(8)</sup> Directive 2003/30/EC, OJ L 123, 17.5.2003, pp. 42-46.

<sup>(9)</sup> Directive 2003/96/EC, OJ L 283, 31.10.2003, pp. 51-70.

<sup>(10)</sup> Directive 2003/87/EC, OJ L 275, 25.10.2003, pp. 32-46.

<sup>(11)</sup> Directive 2004/101/EC, OJ L 338, 13.11.2004, pp. 18-23.

<sup>(12)</sup> COM(2005) 628 final, 7.12.2005.

<sup>(13)</sup> Directive 2004/8/EC, OJ L 52, 21.2.2004, pp. 50-66.

2.13 New operators within the energy sector, and in particular small operators who want to supply electricity to the grid on the same terms as others, find it difficult to compete. The situation varies considerably across Member States.

2.14 On 30 September 2005 the European Parliament adopted a resolution setting the objective of increasing the proportion of renewable energy to 20 % by 2020. The resolution acknowledges that renewable energy does not have free access to the market. It argues that administrative measures that hamper the growth of renewable energy should be abolished. It further proposes that the external costs of fossil fuel use should be included in the energy price, that support for harmful conventional energy forms be phased out and that taxes that are a burden on renewable energy be abolished.

2.15 Citizen organisations in Europe actively coordinate their stance towards renewable energy through environmental labelling for electricity. Wood, as a renewable natural resource, meets the requirements for sustainable energy production. Harnessing energy from wood improves the basis for sustainable forestry. From a sustainability viewpoint it is important that felling should not outpace growth. Sustainable forestry is based on and safeguarded by the decisions taken by the conference of forestry ministers of the MCPFE (*Ministerial Conference on the Protection of Forests in Europe*) on sustainable forestry in Europe. Sustainable forestry is also safeguarded by forest certification schemes. Under the criteria for sustainable forest management adopted at the Lisbon meeting of forestry ministers, the extraction of biomass from forest areas for energy purposes must protect the soil's carbon supply and fixing cycles. The processes of evolution, nutrient supply and maintenance of physical-chemical conditions in soil must therefore be guaranteed. At this stage it is necessary to concentrate on sustainably increasing the use and production of wood. At the same time efforts should be made to develop good methods of harnessing wood energy. In many EU countries there are also good examples of labelling schemes for wood energy which guarantee that energy production is controlled and inform consumers about respect for environmental criteria.

2.16 Forestry resources in Europe (stem volume in cubic meters without residuals) increased by approximately 30 % when the 10 new Member States joined the EU in 2004. The EU's total forest and woodland area currently amounts to 140 million hectares and there is about 22 million hectares in the accession countries. Commercially exploited woodland area in EU Member States (i.e. forests available for wood supply — woodland areas where statutory, economic and environmental protection constraints do not significantly affect timber production) totals 117 million hectares and there are a further 19

million hectares in the accession countries. The net annual increment (growth) of the growing stock (gross increment less natural loss of trees) in the EU is 560 million m<sup>3</sup>. In 2002 fellings amounted to 350 million m<sup>3</sup>, of which 41 million m<sup>3</sup> was traditional felling for firewood. Net imports of roundwood into the EU amount to about 25 million m<sup>3</sup>. Together, industry and households use 62 % of the annual increment, of which more than 7 % is traditional firewood for use in the home. A good 10 % of total growth is in protected forests or otherwise outside commercially exploited areas.

2.16.1 This means that almost 30 % of growth is still unexploited, and EU forest stock is therefore still growing, as it has been for the past 50 years. Part of this unused timber (170 million m<sup>3</sup>) is low-grade timber, which can only be used for energy production. Of this amount, 30 million m<sup>3</sup> can be used as energy wood, in addition to other raw-material use. Each year 173 million m<sup>3</sup> of logging residue and other wood from felling suitable for energy production are left in forests. Taking into account technical, economic and ecological constraints, an estimated 70 million m<sup>3</sup> of this amount, in the form of felling residue and stumps, could be used.

2.16.2 By-products of the forestry industry (black liquor, bark, sawdust, etc.) and recovered wood offer the greatest potential and are already exploited effectively in many countries, particularly in the context of an integrated forest industry. Use of by-products and recovered wood for energy purposes could amount to 30-50 % of roundwood use (equivalent to 100-167 million m<sup>3</sup> of roundwood).

2.16.3 This implies that the EU's sustainable energy wood potential is about 267 million m<sup>3</sup>; part of the industrial by-products included in this amount is already exploited. This amount of wood is equivalent to 50 Mtoe of energy. Thus EU forests have an unused wood energy potential of at least 100 million m<sup>3</sup>. The amount of by-products is increasing along with expanding use of roundwood in the forest industry. Small quantities of energy wood can be obtained in conjunction with cultural landscape management. The FAO/UNECE Timber Committee is currently developing arrangements for monitoring use of woodfuels and testing a data collection system in ten countries.

2.16.4 In 2001 only 101.3 Mtoe of total energy consumption of 1,668 Mtoe in the EU (EU25) was produced using renewable energy forms. In most countries — all except four — biomass accounted for the largest proportion of renewable energy. In eleven countries, the proportion was over 75 %. The proportion was particularly high in the other new Member States, except Malta and Cyprus.

### 3. Greenhouse gases and use of wood as a substitute

3.1 The main indirect cost of fossil energy sources is climate change. Carbon dioxide is the most important greenhouse gas. Some countries have tried to address carbon dioxide emissions by imposing a CO<sub>2</sub> tax. Sulphur, nitrogen oxide and particulate emissions also create external costs. Woodfuel is carbon dioxide-neutral, i.e. it does not increase net emissions into the atmosphere. Wood contains little sulphur and nitrogen compared with other fuels, and the main source of its particulate emissions is its traditional small-scale use.

3.2 The wellbeing of today's planet rests almost exclusively on the use of non-renewable natural resources. This is particularly true of energy production and use of energy that is largely the product of fossil fuels such as lignite, coal, oil, oil shale and natural gas.

3.3 Energy use is the main cause (59 %) of greenhouse gas emissions in the world. The main emission due to energy use is carbon dioxide, whose air concentration level has continued to increase over many decades.

3.4 The use of fossil fuel also causes emissions of other substances that harm the environment, e.g. sulphur dioxide, nitrogen oxides and particles of various sizes. Use of wood as a replacement fuel reduces these emissions. Woodfuels replace energy production based on fossil fuels, which have a notably more harmful environmental impact.

3.5 Using wood in various products is an effective way of decreasing CO<sub>2</sub> emissions, as preparation of wood products usually requires considerably less energy than competing materials. Wood as a material is a substitute for non-renewable natural resources. The competitiveness of wood products in relation to energy-intensive products such as steel and concrete is improving as a result of emissions trading.

3.6 Using renewable energy instead of fossil fuel can help to cut greenhouse gas emissions. The scale of the reduction depends on the fuel and production methods that are replaced with renewable energy. Different fossil fuels have different CO<sub>2</sub> emission coefficients. From the point of view of cutting emissions, it is particularly important to use energy production methods where the unit cost of emissions is low.

3.7 Using fossil fuels simply for electricity generation is a poor environmental solution. Many industrial processes have

major heat, steam and electricity requirements, so it is especially appropriate to generate electricity in connection with industrial processes.

3.8 The mechanical and chemical forestry industries use wood primarily to make wood and paper products. The process gives rise to various types of by-products that are highly suitable as fuel for energy production. Modern chemical and sawmill industries are generally net producers of energy, i.e. they can produce more energy than they use themselves. By-products that are not needed for their own energy production can be sold on the biomass fuel market.

3.9 The most important by-product from pulp mills is lignin-containing black liquor, which can be used to produce electricity and heat. Black liquor is also likely to be used in the future as a raw material for vehicle fuel. This will require further research and development. Ethanol from lignocellulose, gasification and subsequent production of synthetic diesel are other likely sources of energy.

3.10 The new Member States offer considerable potential for expanding the forestry industry and using wood as a raw material for production of wood-based products and energy.

3.11 Biomass fuel markets are usually local or regional markets, owing to, for example, transport costs. Processing furniture or sawmill industry by-products to produce pellets, bio-oil from pyrolysis or briquettes, for example, could easily open up new, wider markets. Distribution networks should therefore be boosted and guaranteed in order to facilitate consumption by the public. The new CEN classification makes distribution and trade easier.

3.12 Forest fires are a serious problem particularly in Mediterranean countries such as Portugal, Spain, France, Italy and Greece. They also pose a minor risk in northern European countries. Managing these areas and collecting materials that increase the risk of forest fires reduces economic losses. The cause of forest fires are legion, but three leading causes should be singled out: forest condition — felling residue must be removed in order to lower the fire risk; people's behaviour; and lack of monitoring and extinguishing systems. Forest fires are major natural disasters and every effort must be made to prevent and combat them, both in Member States and the EU.

#### 4. International politics and development

4.1 In 2005 the energy market was hit by higher oil prices and a deficiency in oil product processing capacity. At the same time, electricity prices have generally risen. One reason for this is trading in emission rights, the overall impact of which is, as yet, impossible to gauge. In addition, deregulation of the electricity market has not progressed very far.

4.2 The international political climate is a key factor when it comes to increasing use of renewable energy forms. The European Union has, in accordance with the Kyoto Protocol (entered into force on 18 February 2005), undertaken to cut CO<sub>2</sub>-emissions by 8 % compared with 1992 levels. This reduction has been shared out between the Member States according to each country's ability to cut emissions. The EU's emissions trading scheme is one component of the European Union's climate strategy, and is only partly linked to the Kyoto Protocol.

4.3 Emissions trading within the European Union started on 1 January 2005. The initial period covers the years 2005-2007 and only applies to CO<sub>2</sub>. Internal distribution within the EU depends on the EU15 as a whole succeeding in cutting emissions; failing this, each EU15 Member State will have to ensure it manages to achieve the 8 % reduction like other countries. Some Member States have even more ambitious requirements for 2008-2012. The post-2012 international situation is unclear. Some individual EU Member States have announced different objectives for the European Union as a whole and for themselves individually.

4.4 The European Union has no common forestry policy, but Member States pursue their own national forest programmes and policy. The EU Council of Ministers approved an EU forestry strategy in 1998. Forestry strategy is underpinned by the subsidiarity principle, according to which forestry policy is basically a Member State competence. In March this year the Commission issued a communication on the implementation of the forestry strategy<sup>(14)</sup>, stressing that promoting wood energy brings added value to EU sustainable development policy. The EESC issued an opinion<sup>(15)</sup> endorsing the Commission's communication in October 2005. At the moment, the Commission is working on an action plan for sustainable forestry in the European Union, which is due to be completed in 2006.

<sup>(14)</sup> COM(2005) 84 final, 10.3.2005.

<sup>(15)</sup> CES 1252/2005 OJ C 28, 3.2.2006, pp. 57-65.

4.5 Since 1998 the European Union's forest area has increased by 20 % and the number of private forest owners from 12 to 16 million. In most of the new Member States the State is still a major forest owner. It is essential to improve the capacity of the private forestry industry in new and future Member States. Wood markets are poorly developed in many countries. Forest-based economic activities in these countries are still at a modest stage of development but the prospects for improving forestry are good, provided that the countries concerned formulate effective and efficient forest policy. In addition, efforts should be made to increase interest in producing energy wood. Energy wood production requires the extensive mobilisation of the entire forestry sector, especially at the beginning of the production chain.

4.6 There are many small forest holdings in the EU. Action should be taken to promote the organisation of small forest owners and cooperation between them so as to foster forestry and efficient wood energy production. The EU could contribute to this by helping forest sector organisations to increase their skills and capacity.

4.7 The development of competing energy forms often takes place in monopoly-like conditions where it is very difficult to create properly functioning local and regional markets for woodfuels.

4.8 The fuel market is global and electricity can also be transmitted across borders in large quantities. In spite of this Europe is not — and cannot become — fully self-sufficient in energy production. To improve the European Union's energy supply, greater focus will have to be put on objectives aimed at increasing the proportion of energy produced within the EU and reducing dependence on imports.

#### 5. Woodfuels and their promotion

5.1 Wood plays an important role in energy supply in countries with large tracts of woodland. Since only just over 50 % of forestry potential is exploited industrially, efforts will have to be made to harness by-products from logging and to tap into this unused potential for energy production. From the point of view of sustainable development, renewable wood energy is always preferable to production based on fossil raw materials. It also helps to underpin good, sustainable forest management practices, particularly when regenerating forest and thinning young forest stands.

5.2 Wood is a renewable raw material and wood products also act as carbon reservoirs. Recycling of wood products continues to grow.

5.3 At the end of their various recycling processes, wood products can be used to produce energy. Similarly, all forestry and wood industry by-products can be used as raw material for energy production. Thus the forestry industry and energy production are a formidable, environmentally friendly combination.

5.4 Wood is a suitable fuel for energy generation needs in private houses, blocks of flats, district heating schemes and industry. Electricity is most efficiently generated in conjunction with district heating or industrial heating and steam production ('combined heat and power', or CHP).

5.5 The imposition of a carbon dioxide tax would be a good way of making wood energy more competitive on the energy market. In addition, the use of wood energy could be increased through support for fuel production, for example by granting forest owners aid for logging costs associated with projects which do not compete with the supply of raw materials to industry. However, it is essential that such a tax does not lead to a reduction in forestry stocks, as otherwise the function of forests as CO<sub>2</sub> sinks would be diminished. This measure should be complemented by tax breaks for forest owners who increase forestry stocks and thus contribute to the absorption of CO<sub>2</sub>.

5.6 Instruments that promote wood as fuel boost demand for wood raw materials that can also be processed to make wood-based panel products for the construction industry. Heat is only generated locally where the need for energy arises, and so the mechanical forest industry, which can also make use of recovered wood, should be developed in an integrated way with energy production.

5.7 The forest industry has a permanent advantage in that production plants already possess logistic resources that can also be deployed for acquisition and use of woodfuels.

5.8 The competitiveness of wood energy can also be achieved through tax concessions, e.g. by lowering value add tax on wood pellets, retail firewood or on electricity produced with wood.

5.9 In order to provide for rapid uptake of, for example, electricity generation using wood as fuel, competitive prices could be paid to electricity producers. Plants planning to use

wood as fuel must be given the chance to assess the availability of renewable wood supplies and the profitability of investment in electricity generation.

5.10 In order to boost the use of renewable energy sources in electricity markets, some Member States have introduced support schemes based on quotas and feed-in tariffs (firm fixed prices for renewable energy). In many countries these schemes are essential for promoting the use of wood energy. Eco-labels for renewable electricity and especially for electricity produced from wood could help to promote the use of wood energy.

5.11 In the initial stage investment aid should be provided for wood energy production plants and for machinery and other technical equipment needed for production because of the high cost of establishing such plants.

5.12 Aid is also needed for research and development. This applies particularly to forestry management, technology, energy production and use of woodfuels. Prognoses and scenarios that ensure the overall sustainability of forests, inter alia in their biodiversity role, must be developed for forestry management. There is also a need for research on harnessing pulp industry by-products to produce more processed liquid fuels, such as those used for vehicles.

5.13 Use of wood as a fuel can also be boosted by setting stricter limits on, for example, sulphur emissions. Similarly, use of woodfuel can be promoted by taxing emissions, ash or other waste resulting from the use of other fuels.

5.14 Markets for woodfuels and especially firewood are local but increased use of wood energy in the EU would create jobs in the market for machinery and equipment as the equipment needed for the mechanised recovery of timber from forests is similar in all countries. Special machinery and equipment are also needed to produce pellets, briquettes and other processed woodfuels. Energy production requires a large number of boilers and other high-value equipment that offer major growth potential. Increased use of wood energy would also open up major opportunities for exporting technology to other parts of the world.

5.15 Comprehensive information campaigns are needed for technology transfers and dissemination of knowledge between EU countries. This could also be carried out by various independent organisations. Campaigns could be financed wholly or partly with public funds.

5.16 Optimum use of economic instruments is best achieved by means of national decisions, with the European Union playing a coordinating role.

## 6. Employment and rural development

6.1 Wood is an important renewable natural resource that is harnessed to promote rural development and create jobs. The direct net impact on employment is estimated at over 1 000 person-years of employment per 1 million cubic meters of wood, and the total impact, including the multiplier effect, at 1 500-2 000 person-years of employment<sup>(16)</sup>. These figures do not include firewood for home use.

6.2 When imported fuel is replaced with woodfuels, a fuel cost consisting of foreign capital is replaced with local work and other local or regional inputs. The overall impact depends on the extent to which imported fuel can be replaced with locally or regionally produced woodfuels.

6.3 Replacing imported fuel with woodfuels provides employment above all for the local rural population. Businesses are small and can only grow if skills are improved and investment support is provided. Development of logging companies and business models is critical to increasing the use of wood and wood for energy production.

6.4 Household firewood use is still relatively important in rural areas in new Member States with extensive forest resources and where exploitation for industrial purposes is fairly low. Exploitation of wood energy is also a useful complement to the by-products of small-scale sawmill operations.

6.5 To enable Europe's millions of small forest-owners to be actively involved on the wood energy market, market-oriented cooperation must be promoted, e.g. through associations and joint undertakings. This is widely considered to be the key to exploiting the 'dormant' potential of wood. Better cooperation, particularly at the beginning of the wood production chain, and between the various operators would also be helpful. In particular, organisations of forest owners are not well-developed in many of the new Member States and the accession countries. In many of the old Member States, organisations of forest owners and other organisations have proved to be the most effective way of training forest owners and motivating them to market renewable wood energy on the timber market. Effective cooperation can bring considerable cost savings in the procurement of wood for use as a raw material.

6.6 A significant number of new jobs can also be created in the machinery and tools industry when there is greater recourse to woodfuels and more processing.

Brussels, 15 March 2006.

The president  
of the European Economic and Social Committee  
Anne-Marie SIGMUND

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<sup>(16)</sup> See the list of sources in the appendix.