GENEVA TIMBER AND FOREST DISCUSSION PAPER 42

FORESTS, WOOD AND ENERGY: POLICY INTERACTIONS

Edited by
Mr. Juha Mustonen and Mr. Tapani Pahkasalo
GENEVA TIMBER AND FOREST DISCUSSION PAPER 42

FORESTS, WOOD AND ENERGY: POLICY INTERACTIONS

Proceedings and Summary of Discussions at the UNECE Timber Committee Policy Forum, 2003

Edited by¹
Mr. Juha Mustonen and Mr. Tapani Pahkasalo

¹ The editors names are listed alphabetically and seniority in authorship is not implied.
Note
The designation employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Abstract

Forests, Wood and Energy: Policy Interactions is the proceedings and summary of the discussions from the “Policy Forum: Forests, Wood and Energy” and the annual UNECE Timber Committee Market Discussions with their theme, the “Market effects of wood energy policies”. Both were held in October 2003 at the Committee’s annual session. This Geneva Timber and Forest Discussion Paper captures the essence of the discussions, and incorporates all available expert papers and presentations.
Table of contents

Preface ................................................................................................................................................................. v
Foreword .................................................................................................................................................................. vi
Acknowledgements ................................................................................................................................................. vii

Wood energy related press releases from the Timber Committee 2003............................................................... viii

1. Introduction..................................................................................................................................................... 1
   1.1 Purpose of the Discussion Paper ............................................................................................................... 1
   1.2 Wood energy and the Timber Committee ................................................................................................. 1
   1.3 Topics and speakers for the Policy Forum and Market Discussions .......................................................... 1
      1.3.1 Policy Forum: Forests, Wood and Energy ......................................................................................... 1
      1.3.2 Timber Committee Market Discussions - Theme: Market effects of wood energy policies ....... 1

2. Wood energy policies (from the Policy Forum) ................................................................................................. 2
   2.1 Wood energy policies in the UNECE region ............................................................................................... 2
   2.2 Political drivers for wood energy policies .................................................................................................. 2
      2.2.1 The Kyoto Protocol commitments .................................................................................................. 2
      2.2.2 Johannesburg Plan of Implementation ......................................................................................... 3
      2.2.3 Wood energy policies and the European Union .......................................................................... 3
      2.2.4 UNECE Ministerial Conference on Environment for Europe ................................................... 3
   2.3 Subregional example of wood energy in use ............................................................................................... 3
   2.4 Wood energy policies and the forest sector ................................................................................................. 3
   2.5 EFSOS outlook study in respect of wood energy ....................................................................................... 4

3. Market effects of wood energy policies (from the Market Discussions) ............................................................ 5
   3.1 Findings on the market effects of wood energy policies from Forest Products Annual Market Analysis, 2002 - 2004 ......................................................................................................................... 5
   3.2 Trends and market effects of wood energy policies .................................................................................... 5
   3.3 Case example: Russia, a wood energy supplier ....................................................................................... 6
   3.4 Forest owners’ point of view ...................................................................................................................... 7
   3.5 Forest industries’ point of view .................................................................................................................. 7

4. Summary of discussions .................................................................................................................................... 8
   4.1 Country viewpoints from discussions ....................................................................................................... 8
   4.2 Industrial organizations’ viewpoints from discussions ............................................................................ 9
   4.3 Concluding remarks by the editors .......................................................................................................... 9

Annex 1 Speakers for the Policy Forum and Market Discussions with contact information .................................. 10
Highlights............................................................................................................................................................ 12
A2.1 Introduction .................................................................................................................................................... 13
A2.2 Wood for energy ......................................................................................................................................... 14
A2.3 Discussion .................................................................................................................................................... 18
A2.4 References .................................................................................................................................................. 20

Annex 3 Presentations from the policy forum ..................................................................................................... 21
A3.1 Kit Prins, Introduction .................................................................................................................................. 21
A3.2 George Kowalski, Energy policies in the UNECE region .......................................................................... 22
A3.3 Slav Slavov, Renewable energy policies ................................................................................................. 25
A3.4 Miguel Trossero, Wood energy and climate change .................................................................................. 28
A3.5 Kit Prins, Wood energy policies ................................................................................................................ 30
A3.6 Christiane Egger, Energy from biomass, an economic opportunity ......................................................... 33

Annex 4 Presentations from the Market Discussions .......................................................................................... 35
A4.1 Ed Pepke, Introduction .................................................................................................................................. 35
A4.2 Bengt Hillring, Trends and market effects of wood energy policies .......................................................... 36
A4.3 Hans Jansen, Export of biomass from Russia to the Netherlands .............................................................. 37
A4.4 Bernard de Galembert, CEPI’s viewpoint on wood energy policies ........................................................... 40
A4.5 Natalie Hufnagl, Forest owners viewpoint on wood energy policies ......................................................... 43
A4.6 Eva Janssens, EPF’s viewpoint on wood energy policies ........................................................................... 44
A4.7 Jeremy Wall, Some aspects of the EU policies affecting the use of wood as a renewable energy source ........................................................................................................................................... 48
PREFACE

The UN Economic Commission for Europe is committed to promoting sustainable development throughout the region and to encouraging a cross-sectoral approach between the various sectors it covers, including the forest and forest industries sector and the energy sector. Sustainable energy production and use within the UNECE region (Europe, North America and the Commonwealth of Independent States) is a key component of sustainable development. The work of the UNECE in the areas of trade, timber, energy and environment are in line with the goals of the UN Millennium Declaration, the outcome of the World Summit on Sustainable Development and the past and ongoing Ministerial Conference for the Protection of Forests in Europe.

Biomass-based fuels, for example wood and wood fibre, are important alternative sources of energy. The UNECE has programmes in renewable energy in both the Timber Branch of the Trade Development and Timber Division, and in the Industrial Restructuring, Energy and Enterprise Development Division. Wood energy has advantages in each of the three pillars of sustainable forest management: economic, ecological and social.

The objectives of the UNECE Sustainable Energy Sub-Programme in promotion of sustainable energy for the region are to: 1. provide sustained access to high-quality energy services; 2. ensure security of energy supplies, 3. facilitate a transition to more sustainable energy through renewable energy sources to reduce health and environmental impacts resulting from the production, transport and use of energy, 4. balance energy networks to optimise operating efficiencies and regional cooperation, 5. improve energy efficiency in production and use, and 6. integrate energy restructuring, legal, regulatory and energy pricing reforms, as well as the social dimension into energy policy making. Wood energy is both a current and traditional activity for the Timber Committee where UNECE monitors and analyses wood energy production and use, as well as provides a forum for discussion by experts and policy makers from member country governments, organisations and institutions.

This UNECE/FAO Timber Branch Geneva Timber and Forest Discussion Paper on the policy interactions of forests, wood and energy is intended to provide objective, current information as a basis for policy making. The Policy Forum on Forests, Wood and Energy from which this Discussion Paper evolved, is a good example of international cooperation to provide authoritative information on sustainable wood energy development and the links between trade, environment and energy.

The success of the forum was achieved through a combination of excellent presentations by experts along with a debate by delegates to the Committee. Different viewpoints and opinions were expressed and the main consensus was that policies promoting wood energy production are increasingly having effects on both forest management and forest products markets.

On behalf of the UNECE, I would like to thank all the speakers who contributed to the successful policy forum and market discussions and to the preparation of this publication, who are listed in the acknowledgements.

I hope that this publication will contribute to policy formation for wood energy and to bringing together the two sectors in a cross-sectoral approach.

Brigita Schmögnerová
Executive Secretary
United Nation Economic Commission for Europe
FOREWORD

Forests, Wood and Energy: Policy Interactions is the proceedings and summary of the discussions from the “Policy Forum: Forests, Wood and Energy” and the annual UNECE Timber Committee Market Discussions with their theme, the “Market effects of wood energy policies”. Both were held in October 2003 at the Committee’s annual session. This Geneva Timber and Forest Discussion Paper captures the essence of the discussions, and incorporates all available expert papers and presentations.

This Discussion Paper begins with an overview of renewable energy policies and political drivers affecting use of wood energy especially in the European Union. The Policy Forum was organised to emphasize cross-sectoral viewpoints on international forest policy and the market effects from wood used for energy. The discussions focussed on the cross-sectoral implications and complications of promoting wood energy vis-à-vis other forest sector and non-forest sector policies.

Wood energy is a traditional topic for the Timber Committee and its sister body, the FAO European Forestry Commission. In 2002 and 2003, it resurfaced during the annual Timber Committee Market Discussions, leading to a good debate. In 2003 wood energy was again a subject at the Committee session, both at a new Policy Forum and at the annual Market Discussions. Traditionally the policy and market interactions of wood energy, and associated affects on timber harvesting, processing and marketing, have been the foundation for work by previous teams of specialists and the subjects of workshops. Currently the UNECE/FAO Team of Specialists on Forest Products Markets and Marketing is considering further work on wood energy in relation to forest products markets.
ACKNOWLEDGEMENTS

The secretariat expresses its sincere appreciation to the speakers at the “Policy Forum: Forests, Wood and Energy”, specifically, in order of presentation:

- Mr. George Kowalski, Director, Industrial Restructuring, Energy and Enterprise Development Division, UNECE
- Mr. Slav Slavov, Special Advisor, Energy Section, Industrial Restructuring, Energy and Enterprise Development Division, UNECE
- Mr. Miguel Trossero, Senior Forestry Officer, Wood Energy Specialist, FAO Forestry Department
- Mr. Renaud Abord de Chatillon, Ingénieur Général des Mines, Conseil Général des Mines, Ministère de l’économie des finances et de l’industrie, France
- Mr. Jeremy Wall, Senior Civil Servant, Forest-based and Related Industries Unit, DG Enterprise, European Commission
- Ms. Christiane Egger, Deputy Manager, O.Ö. Energiesparverband, Austria

The secretariat also thanks the contributors on the “Market effects of wood energy policies” at the Timber Committee Market Discussions, specifically, in order of presentation:

- Dr. Bengt Hillring, Associate Professor, Department of Bioenergy, Swedish University of Agricultural Sciences
- Mr. Hans Jansen, Project Leader, Trade Development and Timber Division, UNECE
- Mr. Bernard de Galembert, Forest Director, Confederation of European Paper Industries
- Ms. Natalie Hufnagl, Secretary General, Confederation of European Forest Owners
- Ms. Eva Janssens, Economic Advisor, European Panel Federation

In addition, the secretariat would like to thank the editors and producers of this publication, Messrs. Tapani Pahkasalo and Juha Mustonen, masters degree candidates, Department of Forest Economics, University of Helsinki. They also worked with us over the summer 2003 to produce the *Forest Products Annual Market Analysis, 2002-2004*.

Also at their coinciding meeting in October 2003, the UNECE/FAO Team of Specialists on Forest Products Markets and Marketing discussed the use of wood for energy. We would like to thank the Team for their active contributions during the above-mentioned Policy Forum and Timber Committee Market Discussions, and for any future work they undertake in this field of wood energy in relation to timber markets in the UNECE region.

Finally we thank all the delegates to the UNECE Timber Committee session who contributed to a lively debate on the policy and market interactions of forests, wood and energy.

UNECE/FAO Timber Branch
Trade Development and Timber Division
UN Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland
Fax: +41 22 917 0041
E-mail: info.timber@unece.org
http://www.unece.org/trade/timber
Wood energy related press releases from the Timber Committee 2003

UNECE Timber Committee discusses policy issues of the day

“Biomass is one of the renewable energies with the greatest potential for expansion, and wood is by far the largest component of biomass energy” says Kit Prins, Chief of the UNECE Timber Branch. “Wood energy is already widely used and is available on a sustainable basis, for relatively modest investment, all over the UNECE region. Wood energy not only provides heat and light, but also income and employment, and contributes to carbon sequestration in the context of climate change. In most areas, with the prevailing structure of energy prices, wood energy is at present not economically competitive with fossil fuels. However, several regional initiatives have demonstrated the feasibility of significantly increasing the volume of wood used for energy. The development of a market for wood energy represents a significant opportunity to raise the income of forest owners, whose economic viability is threatened in many areas, often arising from a lack of local demand, and in general to promote rural development. Governments should create supportive economic and technical conditions for an expansion of the production and use of wood energy, in the context of broader policy frameworks, for renewable energies and for the forest and timber sector, taking account of the legitimate interests of all stakeholders, including some wood-using industries who would face increased competition for their raw material supplies.”

Source: Press Release ECE/TIM/03/P02. Geneva, 14 October 2003².

Statement on forest products markets in 2003 and prospects for 2004

“Wood-based energy has been and is being promoted by governments and forest owners throughout Europe as a means to improve forest viability, provide rural employment, promote renewable resources and reduce CO₂ emissions from fossil fuels, and thereby mitigate climate change. In treating this topical issue, the Committee felt wood energy should be promoted by governments, noting an excess of growth over removals in the region’s forests, while acknowledging the concern of some industry sectors for raw material competition.

Wood represented about 6% of the total EU primary energy production in 2000, and almost 15% of the total roundwood removals in the UNECE were used as fuelwood in 2002, mostly in CIS. The Committee noted that further analysis of the use of wood for energy purposes requires more robust data and information. In some countries, weak demand has led to accumulation of growing stock in over mature stands, some of which are showing signs of instability. Stimulation of new demand, for instance for wood fuel, would help to resolve this situation.”

Source: Timber Committee Market Statement 2003³.

² http://www.unece.org/press/pr2003/03tim_p02e.htm
³ http://www.unece.org/press/pr2003/03tim_n02e_statement.htm
1. INTRODUCTION

1.1 Purpose of the Discussion Paper

Purpose of this Discussion Paper is to make available for wider distribution the presentations and discussion on wood energy at the United Nations Economic Commission for Europe (UNECE) Timber Committee’s 61st session, held in Geneva on 7 October 2003. The Discussion Paper begins with an overview of renewable energy policies and political drivers affecting use of wood energy, especially in the European Union. In addition, the Discussion Paper includes speakers’ viewpoints on international forest policy, market effects from wood used for energy, the cross-sectoral implications and complications of promoting wood energy vis-à-vis other forest sector and non-forest sector policies.

1.2 Wood energy and the Timber Committee

In 2002 at the annual Timber Committee Market Discussions, the use of wood for energy was brought to the Committee’s attention by Dr. Bengt Hillring in his presentation on “European Wood Energy Markets, 2002”. In 2003 wood energy was again a subject at the annual Committee session, both at a new venue “Policy Forum: Forests, Wood and Energy” and at the Market Discussions, which had an overall theme of the “Market effects of wood energy policies”. Also at the coinciding meeting of the UNECE/FAO Team of Specialists on Forest Products Markets and Marketing, the Team discussed the use of wood for energy. Subsequently they participated in the Market Discussions and are considering further work in the wood energy area. The annual Timber Committee market statement contained references to wood energy and its market effects, both in 2002 and 2003. A special post Timber Committee press release further elaborated policy issues in “Illegal logging and wood energy: UNECE Timber Committee discusses policy issues of the day”. Wood energy was included in the traditional market-oriented press release stemming from the Committee’s session, both in 2002 and 2003. In preparation for the annual Market Discussions, the secretariat prepared the Forest Products Annual Market Analysis, 2002-2004, which included the normal analysis of wood energy and also wood energy policies. Following the 2003 session, Timber Committee intended to continue activity on wood energy policies.

1.3 Topics and speakers for the Policy Forum and Market Discussions

1.3.1 Policy Forum: Forests, Wood and Energy

Introduction and wood energy policies, Mr. Kit Prins
Energy policies in the UNECE region, Mr. George Kowalski
Renewable energy policies, Mr. Slav Slavov
Wood energy and climate change, Mr. Miguel Trossero
Regional policies for the forest-wood chain, Mr. Renaud Abord de Chatillon
European Union sustainable energy policies, Mr. Jeremy Wall
Energy from biomass, economic opportunity for Europe’s regions, Ms. Christiane Egger

1.3.2 Timber Committee Market Discussions

Theme: Market effects of wood energy policies

Introduction, Market effects of wood energy policies, Mr. Ed Pepke
Keynote presentation, Market Effects of Wood Energy Policies, Dr. Bengt Hillring
Export of biomass from Russia to the Netherlands, Mr. Hans Jansen
European paper industry’s viewpoint on wood energy policies, Mr. Bernard de Galembert
Private forest owners’ viewpoint on wood energy policies, Ms. Natalie Hufnagl
European panel industry’s viewpoint on wood energy policies, Ms. Eva Janssens

4 http://www.unece.org/trade/timber/docs/tc-60/presentations/8-2-hillring.ppt
5 http://www.unece.org/trade/timber/press.htm
6 http://www.unece.org/trade/timber/press.htm
7 http://www.unece.org/trade/timber/press.htm
8 http://www.unece.org/trade/timber/mis/fpama.htm
9 See annex 1 for full titles and contact information.
2. WOOD ENERGY POLICIES (FROM THE POLICY FORUM)

2.1 Wood energy policies in the UNECE region

Mr. George Kowalski, Director, UNECE Division for Industrial Restructuring, Energy and Enterprise Development, opened the “Policy Forum: Forests, Wood and Energy” discussions by giving a presentation on energy policies in the UNECE region. Energy policies are driven by the needs to ensure energy security, improve economic efficiency and to advance environmental protection. Increased dependence on imported fuels and concentration of both production and reserves of fossil fuels have brought energy security back into policy agenda. Growing reliance on Middle East oil reserves can raise political and social instability in the region. New energy infrastructure investments are taking place most rapidly in developing countries.

Mr. Kowalski told the Timber Committee that energy infrastructure expenditures in the western economies have been falling since the mid-eighties. Market opening and liberalization has resulted in increased competition and decreased energy prices. Paradoxical in this development is that it has not led to splintered competition. Instead, it seems likely that consolidation will continue resulting in fewer, larger energy firms in larger international markets.

According to Mr. Kowalski, the energy sector has progressed well in environmental protection. However, the implementation rate of environmental measures is falling. The greatest concerns for energy sector are the policy responses to climate change and uncertainties related to implementation of climate change mitigating actions. Mr. Kowalski concluded that fossil fuels will remain a mainstay of energy, nuclear power will stagnate and energy from renewable sources will increase.

2.2 Political drivers for wood energy policies

Wood biomass is one of the renewable energy sources with significant share of total renewable energy. According to Mr. Slav Slavov, Special Advisor, UNECE Division for Industrial Restructuring, Sustainable Energy and Enterprise Development, biomass combined with hydropower represents 85% of total renewable energy in UNECE region. The share of renewable energy in total primary energy supply is 5% in the UNECE region. Use of renewable energy has increased in line with total energy use in recent years, but biomass is expected to raise its share, especially in North America, central and northern Europe. However, the competitiveness of biomass as an energy source could be increased by the removal of existing trade barriers.

According to Mr. Slavov, the major political drivers for wood energy in the UNECE region are:

1. Kyoto Protocol commitments
2. Johannesburg Plan of Implementation

2.2.1 The Kyoto Protocol commitments

The Kyoto Protocol requires the signatory countries to reduce emissions of greenhouse gases between 2008 and 2012 by at least 5%, compared to the 1990 levels. For European Union countries, the emissions cut was set at 8%. In contrast to the consuming of fossil fuel, the use of sustainably-produced biofuels does not result in net release of carbon dioxide into the atmosphere, since the CO₂ released through the consumption of biofuel is taken up by growing biomass. Therefore, the use of bioenergy is a significant option for signatory states in accomplishing their emissions reduction targets. According to Mr. Slavov, biofuels serve the strategic purpose of reducing CO₂ emissions. Mr. Kowalski said that we should think beyond Kyoto. The commitments made in Kyoto Protocol will have marginal contribution in mitigating the climate change. Stronger policy is needed for achieving significant results. According to Mr. Kowalski, the Kyoto Protocol signatory countries are facing difficulties in achieving their emissions reduction targets. However, emission trading can be beneficial to some signatory countries. An important viewpoint of climate change issues is that the uncertainties related to policy responses in climate change are having significant implications for energy sector in the UNECE region.
2.2.2 Johannesburg Plan of Implementation

The Plan of Implementation of the Johannesburg Summit on Sustainable Development 2002 contains adopted commitments towards increasing the use of renewable energy. The Plan includes specific measures to be taken for achieving this target. Some of these measures are as follow: improving access to environmentally sound energy services, improving access to modern biomass technologies and fuelwood sources and supplies; and promoting sustainable use of biomass through improving forest resources management and efficiency in the energy use of wood. National energy policies and legal frameworks should be created and international and regional cooperation should be enhanced.

2.2.3 Wood energy policies and the European Union

In the European Union (EU), the major policy measure in the wood energy context is the European Commission's “White paper: Energy for the Future: Renewable Source of Energy”. The paper sets out the target for doubling the share of renewable energy use by 2010. For biomass, the target is to triple its energy use. Mr. Jeremy Wall, Senior Civil Servant, European Commission’s Enterprise Directorate General, believes that wood is the main biomass energy source since wood is traditionally used in energy generation and therefore the technologies are already known. The availability of wood raw material in the EU forests makes wood biomass competitive compared to other biomass sources.

The wood energy policies in EU interact with several other policy areas. According to Mr. Wall, expansion of the global markets for energy wood is included in trade policies. Unregulated wood markets are affecting the field of industry policy. From the context of competition policy in the EU, subsidies for wood energy projects are carefully considered. However, taxation policy in the EU can assist in promoting the use of wood energy. From the environmental policy viewpoint, wood is considered as an environmentally compatible material.

2.2.4 UNECE Ministerial Conference on Environment for Europe

The fifth Ministerial Conference of Environment for Europe, held in Kiev, Ukraine in 2003, adopted a Ministerial Declaration. It underlined the importance of the Environment for the Future process as a tool to promote environmental protection and sustainable development in the region. The Conference recognised the importance of integrating environmental aspects and sustainable development into energy policy in the UNECE region.

2.3 Subregional example of wood energy in use

In the UNECE region, biomass energy projects have received support from governments and EU structural funds for regional development in form of tax exemption or reduction, tax refund, investment aid, price support schemes and green certificates. Ms. Christiane Egger, Deputy Manager, O.Ö. Energiesparverband, Austria, told the Timber Committee of the supportive policies and programmes in Upper Austria. The regional government has directed agricultural subsidies to small-scale, local wood energy production. Consumers have also received subsidies to purchase the required equipment to burn pellets.

2.4 Wood energy policies and the forest sector

Mr. Miguel Trossero, Wood Energy Specialist, FAO Forestry Department, told the Timber Committee about the importance of wood energy in developing countries. Wood energy is a significant source of energy and has an important role in abolition of poverty in developing countries. In rural areas, the energy use of wood is significant in creating employment and in providing income. According to Mr. Trossero, governments and the international community should support these activities, for example by creating incentives for strengthening wood energy development. The Kyoto Protocol commitments, and its flexible mechanisms, can benefit this development by increasing the economic attractiveness of energy use of wood in developing countries.
Mr. Trossero underlined that the increased energy use of wood can strengthen, expand and diversify the roles of forests and forest products. Wood energy policies can also contribute to efficiency in use of forest resources and to sustainable forest management. Despite the importance and potential of the wood energy policies, there are still several institutional barriers constraining expansion of the use of wood energy. From the forest sector viewpoint, wood energy policies are still weak and the role of wood energy and its contribution in mitigating the climate change is poorly understood. Legal and technical frameworks are insufficiently prepared and financial resources are rather limited. Another important point was that the relation between forestry sector and energy sector is not well understood. This lack of understanding is exhibited in the weaknesses of the inter-sectoral activities between forestry and energy organisations. Private sector activities are also limited. Capabilities and partnerships of forest and wood energy enterprises are weak and incentives for new wood energy initiatives are insufficient.

Mr. Trossero expressed concern about the present state of education and training in wood energy issues. Training and education seem to be insufficient and wood energy is rarely integrated in educational programmes. Overall, the private sector appears to be insufficiently prepared for expansion of the use of wood energy.

Mr. Trossero gave several recommendations focused on the enhancement of forest services’ role in promoting the use of wood energy. The political awareness of wood energy and climate change issues needs to be increased and specific policies should be created. New legislation should be adopted. Establishment of new inter-institutional programmes, as well as enhancement of national and international partnerships is vital. Mr. Trossero also underlined the importance of the active participation of the private sector in developing wood energy policies.

2.5 EFSOS outlook study in respect of wood energy

Mr. Kit Prins, Chief, UNECE/FAO Timber Branch, Trade Development and Timber Division, presented the wood energy aspects in the European Forest Sector Outlook Study (EFSOS). The study’s goal is to analyse the long-term trends for supply and demand for forest products. Wood energy aspects were included in the EFSOS policy studies. Policy studies were carried out by using a Delphi approach, which is an innovative, but experimental iterative process using expert group estimates on potential policy and market issues from inside and outside the sector. These factors are analysed and prioritised by their probability and impact. Finally, the outcome of the process is linked to quantitative analysis providing estimates of market effects. According to Mr. Prins, implementation of political measures in promoting the renewable energy sources would raise the level of removals, production, trade and consumption of forest products in the UNECE region. Increased use of wood for energy could also lead to higher roundwood prices.

The EFSOS policy studies raised some additional issues concerning wood energy. Future interaction with the agricultural sector is important. Land use competition and supportive schemes in promoting biomass production have links to agricultural policies. EFSOS asks should wood energy production be practised on a small scale or on a large scale?

According to EFSOS, greater use of renewable wood energy would be favourable for the entire forest sector, not only for energy wood. According to Mr. Prins, there is a need for recognising the present contributions of forest sector to sustainable development, in context of renewable energy. It is vital to develop energy policy and forest policy together.

Mr Prins presented recommendations based on findings of the EFSOS study. Governments could promote wood energy production and use, notably by raising the prices for fossil fuels. Governments should also increase funding for research and development and create the necessary infrastructure for a modern and competitive wood energy sector.
3. MARKET EFFECTS OF WOOD ENERGY POLICIES (FROM THE MARKET DISCUSSIONS)

“Market effects of wood energy policies” was the special topic and theme for the annual Timber Committee Market Discussions in 2003. Various actors in the forest sector expressed their viewpoints. As recommended by Timber Committee in 2002, a cross-sectoral approach was used to provide a forum for discussion of different viewpoints.

3.1 Findings on the market effects of wood energy policies from Forest Products Annual Market Analysis, 2002 – 2004

Mr. Ed Pepke, Forest Products Marketing Specialist, UNECE/FAO Timber Branch, opened the Market Discussions by presenting the findings on the market effects of wood energy policies from the Forest Products Annual Market Analysis, 2002-2004 (FPAMA). The FPAMA has a chapter on “Policy implications of forest products market developments in 2002 and 2003” which highlights key issues and policies in the UNECE region. Climate change and wood energy promotion policies receive special attention in the chapter, since they are both likely to have significant effects on forest products markets. It is important for the forest sector to be pro-active in the discussions and policy development. There is an increasing realization that regulations and policies coming from outside of the sector are influencing production, trade and consumption of forest products.

The FPAMA found the use of wood for energy is increasing and new trade flows of biofuels are occurring in the UNECE region. Wood energy affects the entire forest sector, including forest owners, industry, national and local governments and national and international organizations. Wood energy development offers biofuel supplies for the energy industry and markets for harvesting and energy production-related machinery manufacturers and suppliers. While some traditional wood using industries may face increased competition for their raw material, other branches will receive alternative market outlets and potentially better revenues for their by-products. The modern forest industry is well integrated, and often relies on its own wood-based fuels.

Related to wood energy, the FPAMA’s main findings were:

- Rapidly developing international biofuel and energy markets.
- Consumption of wood energy in EU/EFTA rose to a record level in 2002
- Panel and pulp manufacturers are concerned for raw material competition.

Questions raised in the FPAMA’s policy chapter drew the Timber Committee’s attention to important issues and stimulated policy discussion.

3.2 Trends and market effects of wood energy policies

Dr. Bengt Hillring, Associate Professor, Department of Bioenergy, Swedish University of Agricultural Sciences, was the keynote speaker for the Timber Committee Market Discussions on wood energy. His expert paper is included in its entirety in annex 2.

Dr. Hillring presented past and current use of wood fuels and the reasons for increased use of renewable energy. Expanded interest in renewable energy sources has resulted in increased competition for wood raw material. The new market balance is affected by the increased demand of wood for energy. This creates competition, mainly for small-diameter wood and by-products, between traditional wood industry users and the bioenergy industry. According to Dr. Hillring, the competition begins for low-value fibre, i.e., those without any higher commercial use. However, when demand rises, better timber qualities are affected.

11 http://www.unece.org/trade/timber/docs/tc-sessions/tc-61/presentations/item-3.htm
Dr. Hillring also said that international biofuel trade will increase in the future. Eastern European countries will export more to western, central and northern Europe, including to the United Kingdom. Biofuel is one component of the complex trade of roundwood in the Baltic Sea area.

According to Dr. Hillring, the energy wood market may offer new possibilities and alternatives for forest owners when the timber industry is not the only buyer. This is important for pre-commercial thinnings, especially when the forest industry is not capable to use the wood for higher value products. The energy industry is interested in wood fuel, however, competition among different biofuels and renewable energy sources is also strong. Wood pellets are used today on a small scale in many countries and form a competitive alternative for fossil fuels. As a result of increased energy wood demand, the particle board industry is already facing increased competition for its raw material. Competition for low-value raw materials causes concern as the panel industry’s profitability can be affected by rising raw material prices. The future development remains unclear, but is affected by national and regional policies.

3.3 Case example: Russia, a wood energy supplier

Mr. Hans Jansen, Project Leader, UNECE Trade Development and Timber Division, told the Timber Committee about the biofuel trade between Russia and the Netherlands in his presentation “Export of biomass from Russia in the context of climate change policies”. The Netherlands imports annually some 400,000 tons of woody biomass from Canada for energy production. This will not be sufficient to satisfy the Netherlands’ forecasted future annual demand, arising from its commitments in the context of climate change policy. This volume of biomass cannot be supplied domestically in the Netherlands.

Possibilities to import biomass from Russia have been studied for several years since the Russian resources are vast and are under utilized today. The Port of Rotterdam is ready to handle the woody biomass, but the trade has not yet started. Russia currently sells biomass to Denmark and the trade is increasing. Russia recently built three pellet production plants, and all of their production is sold. The Netherlands forecasts annual imports of up to 1 million tons of pellets.

Mr. Jansen told the Timber Committee that there are no direct subsidies needed to support the trade. Economic studies by transport specialists have found transport by ships to be cost effective. Ports in St. Petersburg and the surrounding area are equipped to handle shipping of biofuels. Plans are for expanded trade including exports to Italy in the future. Nevertheless, margins are currently low and any increase in the transport prices could impact the profitability of biofuel trade.

Currently Russia exports roundwood and chips to the Nordic countries for pulp. Sawdust and other by-products are now compressed to pellets and exported on a limited scale. Roundwood exports from Russia increased by 14% in 2002 compared to previous year, but through new policy measures, the goal is to eventually stop the exports of roundwood.

Mr. Jansen cited benefits arising from the international biomass trade:
- CO2-neutral biomass resources are utilised efficiently on a large scale
- New markets may generate substantial income sources for relatively poor world regions
- Energy markets worldwide may become more stable due to a large number of energy suppliers compared to the current situation.

He concluded by saying that biofuel trade has a large potential to mitigate greenhouse gas emissions and contribute to sustainable development. Biofuels could be a key component of the future world’s energy system.
3.4 **Forest owners’ point of view**

Forest owners were represented in the Timber Committee by Ms. Natalie Hufnagl, Secretary General, Confederation of European Forest Owners (CEPF). Ms. Hufnagl reminded the Timber Committee of the forest owners’ current situation, i.e., a majority of private owners with rather small holdings. This has led to a situation where the forest owners do not always realize they are market actors and therefore are not efficiently selling timber. Price is an important factor for forest owners and more timber would be sold if the price was more attractive. CEPF emphasizes the forests’ importance as sources for rural development. Today, forestry in Europe has great importance on local economies and populations.

3.5 **Forest industries' point of view**

Forest industries, traditional wood-using industries in the UNECE region, were represented by Ms. Eva Janssens, Economic Adviser, European Panel Federation (EPF) and by Mr. Bernard de Galembert, Forest Director, Confederation of European Paper Industries (CEPI). The industries expressed concern for the policies to promote use of wood for energy and for the subsidizing certain forms of energy. Industry is in favour of wood for energy and is a major user of wood energy. EPF claims its members are pioneers in sustainable use of resources since most of the heat needed for production is from burning biomass that is unsuitable for recycling. Paper manufacturers are principal producers and users of bio energy, e.g., black liquor. The industries concern is related to availability of wood raw material and the anticipated price levels of wood and energy.

Forest industries support sustainable forest management in the UNECE region and feel that by manufacturing products from wood harvested from the forest, the industry contributes to sustainable development. One of their objectives is to maintain sustainability of the forest ecosystem, as it is crucial also for their wood procurement. Ms. Janssens presented the following arguments in support of sustainability:

- Wood products are carbon sinks
- Wood products require relatively low energy for manufacturing
- Wood products are an energy source at the end of their lifecycle

The main concern for both the pulp and paper industry and the wood-based panels industry is the increased competition and possible shortage of raw material, and small-diameter roundwood in particular. Pulp and paper industry forecasts its demand for wood raw material to grow, although the recycling rates are growing rapidly at the same time. The particle board industry’s primary raw material is sawmilling industry’s by-products, i.e. chips and sawdust, which are also used for energy production. Increased competition for by-products leads to increasing costs for raw materials and final wood products, making EPF member companies less competitive. Ms. Janssens said that several production lines and mills for wood-based panels have already closed, and others may be forced to follow.
4. SUMMARY OF DISCUSSIONS

4.1 Country viewpoints from discussions

During plenary discussions, the United Kingdom (UK) informed the Timber Committee that their annual increment of forests exceeds the annual cuttings, and therefore wood supply is higher than demand. The UK industry does not fear losing its profitability due to competition on raw material. Ms. Janssens, EPF, agreed that industry in the UK is an exception because of its oversupply of raw material. However she pointed out that competition for raw material is problem in other countries, for example in Sweden and Denmark, where some panel mills closed. According to Ms. Janssens, the main reason for reduced panel manufacturers’ profitability is economic subsidies for wood energy enterprises.

France stated that the supply of sawmilling by-products exceeds demand. Currently there are economic constraints to mobilising biomass out of the forests for wood energy production. The French panel industry could solve any raw material shortage by giving a price signal to motivate passive forest owners. Higher prices for wood residues would increase the supply.

Germany told the Timber Committee that 20 million m³ of wood residues are left annually in the country’s forests. There is a need to create a new market for wood residues through multi-stakeholder negotiations. However, in Germany the promotion of renewable energy sources has faced resistance from energy industries currently using fossil fuels. The fossil fuel industry is hindering the political process aimed at increased use of renewable energy. From the fossil fuel industry viewpoint, subsidising the producers of renewable energy causes market distortions. The same point of view came up in Mr. Slavov’s presentation when he questioned whether the present renewable energy policies are compatible with undistorted competitive energy markets and whether the schemes are temporary or permanent.

Sweden informed the Committee that their industry is concerned about increasing competition on wood residues. Some governmental promotion of wood energy might reduce the profitability of the panel industry. There has been discussion on how increasing environmental protection will affect the long-term wood supply. Nevertheless, currently they feel there is enough forest area and wood production for all uses.

The United States emphasized a free trade approach. They do not encourage new subsidies for timber industries, including wood energy.

The European Commission commented that the question of raw material availability should be observed from a broader perspective. The panel industry has strong international competition. Overcapacity from rapid expansion is a main reason for panel industry’s profitability problems. Availability of wood raw material is a matter of price, not of quantity. The Commission added that the low price of wood residues is a principal cause of regional raw material shortages. Hence, higher prices would give an incentive for forest owners to increase the supply of forest residues. When discussing on “wood”, caution is needed because it is a broad term including different species, qualities and values.

Several countries announced that annual forest increment in the UNECE region is significantly higher than the fellings and that some of the surplus could be used for energy production. For example, removals in Switzerland are half of the annual growth and now the country has launched a campaign to promote the use of wood for energy. The campaign is based on carbon sequestration benefits and on positive impacts on employment. Wood energy production could serve as means to diminish the oversupply of roundwood in Switzerland, benefit forest management and provide income and employment to the forest owners, among others, in the wood energy chain.

A general consensus from national delegations was that information systems on woody biomass for energy need reinforcement. Specifically, wood energy statistics should be more accurate and extensive. There needs to be additional information on policy and implementation of wood energy programmes. And finally research and development needs to be supported and coordinated internationally.
4.2 Industrial organizations’ viewpoints from discussions

During the plenary discussions following the EPF and CEPI presentations, both organizations’ representatives offered some possible solutions in response to questions. EPF believes the value chain of the wood resource is not fully respected since material suitable for the production of wood-based products, and especially panels, is used directly for energy generation. Their slogan is “Only burn wood after it has been fully and soundly used!” Enhanced use of wood products and recycling of wood by-products and residues have high priority from the EPF perspective. Waste regulations need to be reformed because some wood residues classified as “waste” meet the quality standards for higher-valued wood raw materials and energy. EPF feels that focusing future research policies on efficient recovery of forest residues is necessary since substantial harvesting residues are currently left in the forests. Another approach favoured by EPF is improved silviculture resulting in increased yields per hectare and better quality roundwood. Agricultural land that is currently becoming available for alternative purposes in the EU could be reforested. In addition, EPF advocates growing biomass specifically for energy generation through short-rotation forestry. EPF believes wood-based products are long-term carbon sinks which mitigate climate change. Wood products are superior environmentally to competitive materials because of the energy efficiency with which they are produced and recycled. EPF proposes setting a realistic “fuelwood-for-energy” target. Simultaneously they support a free market approach and are opposed to subsidies on energy.

CEPI would like to see the EU as a facilitator and offers some additional measures to increase the available biomass for energy production. Felling rates could be increased in the UNECE region and the harvesting potential should be increased simultaneously via research and mechanisation. Larger volumes of fibre residues, both industrial and consumer, could be obtained from better municipal waste management. Larger quantities of forest residues should be collected. Most importantly, wood fibre should be purchased on the international market.

4.3 Concluding remarks by the editors

Increased environmental consciousness, together with the other political drivers for wood energy, have raised policymakers’ awareness of wood energy. Policies to promote the use of wood for energy are influencing production, trade and consumption of other forest products in the UNECE region. Many of the UNECE region countries have policies to promote energy production from the increasing surplus of the forests’ net annual growth. However, there are several challenges for the UNECE member countries to meet the objectives of sustainable development. For example, the forest sector is internally focused on the wood energy issue. However, along with other sectors, it is necessary to develop concurrently both energy policy and forest policy. An additional challenge is that currently many forest services are not sufficiently prepared to expand production and marketing of wood energy.

International biofuel and energy markets are developing rapidly but unevenly in the UNECE region, as evidenced by the consumption of wood for energy rising to a record level in 2002 in western Europe. Expanded interest in renewable energy and alternative energy sources has resulted in increased competition for raw materials between traditional forest industries and the modern biofuel industry. Policies promoting wood energy cause market distortions in both energy and wood raw material markets. When the value chain of the wood resource is not followed, fibre suitable for production of higher value wood-based products is used directly for energy generation. Forest owners anticipate new market opportunities and increased revenues from small-diameter wood and residues from formerly pre-commercial thinnings. Russia has the potential to become the main supplier of woody biomass for large-scale energy production, both domestically and abroad. However, exporting wood raw materials as biomass does not capture the economic benefits of value-added production and it raises environmental considerations linked to transportation.

Future use of wood for energy is directly linked to Governments’ policies and legislation. Their decisions will have ramifications throughout the forest and forest products sector. The Timber Committee stated that Governments should create the supportive economic and technical conditions and broader policy frameworks for an expansion of the production and use of wood energy. Government actions should take into account the interests of all stakeholders, including the private sector, which is active in developing renewable energy sources, technology and infrastructure.
ANNEX 1  SPEAKERS FOR THE POLICY FORUM AND MARKET DISCUSSIONS WITH CONTACT INFORMATION

Policy Forum: Forests, Wood and Energy

**Introduction**

**Mr. Kit Prins**, Chief  
UNECE/FAO Timber Branch  
Trade Development and Timber Division  
456 Palais des Nations  
CH-1211 Geneva 10, Switzerland  
Tel. +41 22 917 2874 Fax +41 22 917 0041  
E-mail: Christopher.Prins@unece.org  
www.unece.org/trade/timber

**Energy policies in the UNECE region**

**Mr. George Kowalski**, Director  
Industrial Restructuring, Energy and Enterprise  
Development Division, UNECE  
384 Palais des Nations  
CH-1211 Geneva 10, Switzerland  
Tel. +41 22 917 2417 Fax +41 22 917 0038  
E-mail: George.Kowalski@unece.org  
www.unece.org/ie

**Renewable energy policies**

**Mr. Slav Slavov**, Special Advisor  
Industrial Restructuring, Energy and Enterprise  
Development Division, UNECE  
Energy Section  
374 Palais des Nations  
CH-1211 Geneva 10, Switzerland  
Tel. +41 22 917 2444 Fax +41 22 917 0038  
E-mail: Slav.Slavov@unece.org  
www.unece.org/ie

**Wood energy and climate change**

**Mr. Miguel Trossero**, Senior Forestry Officer  
FAO Forestry Department  
Viale delle Terme di Caracalla  
I-00100 Rome, Italy  
Tel. +322 627 4927 Fax +322 646 8137  
Miguel.Trossero@fao.org  
www.fao.org/forestry

**Regional policies for the forest-wood chain**

**Mr. Renaud Abord de Chatillon**, Ingénieur général des Mines  
Président de l’Union Syndicale Régionale des Organismes de la Forêt Privée de Bourgogne  
Président de l’Association Bourgogne de Certification Forestière  
Conseil Général des Mines  
Ministère de l’économie des finances et de l’industrie  
4 Bervil, 12 rue Villiot  
F-75007 Paris, France  
Tel. +331 43 19 5113 Fax +331 43 19 5500  
E-mail: Renaud.Abord-de-Chatillon@industrie.gouv.fr

**European Union sustainable energy policies**

**Mr. Jeremy Wall**, Senior Civil Servant  
Forest-based and Related Industries Unit  
DG Enterprise – Unite E/4  
European Commission  
Rue d’Arlon 88 (4/31)  
B-1049 Brussels, Belgium  
Tel. +322 295 3726 Fax +322 296 7015  
E-mail: Jeremy.wall@cec.eu.int

**Energy from biomass, an economic opportunity for Europe’s region**

**Ms. Christiane Egger**, Deputy Manager  
O.O. Energiesparverband  
Landstrasse 45  
A-4020 Linz, Austria  
Tel. +43 732 7720 14380 Fax +43 732 7720 14383  
E-mail: christiane.egger@esv.or.at  
www.esv.or.at
Timber Committee Market Discussions

Introduction, Market effects of wood energy policies

Mr. Ed Pepke, Forest Products Marketing Specialist
UNECE/FAO Timber Branch
Trade Development and Timber Division
439 Palais des Nations
CH-1211 Geneva 10, Switzerland
Tel. +41 22 917 2872 Fax +41 22 917 0041
E-mail: Ed.Pepke@unece.org
www.unece.org/trade/timber

Keynote presentation—Market effects of wood energy policies

Dr. Bengt Hillring, Associate Professor
Department of Bioenergy
Swedish University of Agricultural Sciences
SE-75007 Uppsala, Sweden
Tel. +46 18 673548 Fax +46 18 673800
E-mail: bengt.hillring@bioenergi.slu.se
www.bioenergi.slu.se

Export of biomass from Russia to the Netherlands

Mr. Hans Jansen, Project Leader
Trade Development and Timber Division, UNECE
423 Palais des Nations
CH-1211 Geneva 10, Switzerland
Tel. +41 22 917 3728 Fax +41 22 917 0041
E-mail: Hans.Jansen@unece.org
www.unece.org/trade/

European paper industry’s viewpoint on wood energy policies

Mr. Bernard de Galembert, Forest Director
Confederation of European Paper Industries (CEPI)
250 Avenue Louise, Box 80
B-1050 Brussels, Belgium
Tel. +32 2 627 4927 Fax +32 2 646 8137
b.degalembert@cepi.org
www.cepi.org

Private forest owners’ viewpoint on wood energy policies

Ms. Natalie Hufnagl, Secretary General
Confederation of European Forest Owners (CEPF)
Rue du Luxembourg 47 – 51
B-1050 Brussels, Belgium
Tel. +32 2 2190231 Fax +32 2 2192191
hufnagl@cepf-eu.org
www.cepf-eu.org

European panel industry’s viewpoint on wood energy policies

Ms. Eva Janssens, Economic Advisor
European Panel Federation
Allée Hof-ter-Vleest 5/4
B-1070 Anderlicht, Belgium
Tel +322 556 2589 Fax +355 556 2594
Eva.Janssens@europanels.org
Trends and Market Effects of Wood Energy Policies

By Dr. Bengt Hillring

Highlights

- Wood fuels, traditionally used in local domestic heating, are now also traded internationally thanks mainly to new energy promotion policies in Europe.

- In the past decade the industrial use of wood for energy production has increased significantly in different regions and individual countries.

- Increased prices for fossil fuels make it more profitable to use alternatives, among them wood for energy.

- In past years environmental concern has also become a strong driver behind the increased interest for wood energy.

- Bioenergy promotion policy in certain countries and within the European Union indicate an increased competition between traditional users of wood fibre, roundwood and manufacturing by-products and users of wood fuel.

- A new actor has appeared on the scene for wood raw material – the modern bio-fuel energy production industry.

- What this will lead to in the future is an open question, the development of the future energy and forestry policies as well as market prices and the availability of woody biomass for energy purposes will impact the answer.

- Forest landowners and sawmillers benefit from this extended market of their products, on the other hand pulp and paper industries and panel manufacturers may face increased competition for their raw material.

---

12 Swedish University of Agricultural Sciences (SLU), Department of Bioenergy, P.O. Box 7060, SE-750 07 Uppsala, Sweden.
A2.1 Introduction

Wood fuels are traditionally fuels that have been used in the local economy for cooking and heating houses for centuries. In general, both use and production are local. Even in the past, strong competition appeared between wood for energy use and other uses of timber (shipbuilding, charcoal for iron industry etc.). Traditional wood energy use still accounts for approximately 10% of the world’s energy supply.

The use of industrial wood fibre has increased significantly in past years. Pulp and paper mills, panel industry and sawmills are today’s traditional users. The raw material values in general are low and decreasing. However with increased international competition in the global marketplace, wood products manufacturers in the UNECE region are always attempting to reduce costs. The competition between companies is not only for market share, but also for raw materials, i.e., wood fibre in various forms.

In the 1950s after the World War II, oil became the most important international fuel. This over-dependence on oil became evident in the 1970s when oil crises occurred, that doubled the price of crude oil over night. That sent a shockwave through western economies and started an interest in alternative energy sources.

In recent years there has been an increased awareness of environmental issues both in the scientific community, among decision makers and in the general public. Today a sustainable energy supply is of highest priority to most people on this planet. In Europe both, the European Union, national governments, industry and energy and oil companies are actively developing renewable energy sources, technologies and infrastructure. Nevertheless, oil and other fossil fuels dominate by far the world’s supply of energy.

Climate change due to emissions of greenhouse gases is one of the greatest environmental challenges of today. Greenhouse gas concentration in the atmosphere will continue to rise unless there are major long-term reductions in greenhouse gas emissions. Utilisation of energy is one of the major sources of greenhouse gases. Carbon dioxide (CO₂) is the most important greenhouse gas and therefore increasing the use of biomass for energy is an important option for reducing CO₂ emissions.

The European Union (EU) has no common energy policy but there are different common goals mainly given in the European Commission's “White Paper for a Community Strategy” of 1999 which sets out a strategy to double the share of renewable energy in gross domestic energy use in the EU by 201013, including a timetable for actions to achieve this objective. The Commission’s Green Paper “Towards a European Strategy for the Security of Energy Supply” of 2000, introduced the objective of substituting 20% of traditional fuels by alternative fuels in the road transport sector by 2020. A proposal for a directive “on the promotion of the use of biofuels for transport”, adopted by the Commission in November 2001, requires that an increasing proportion of all diesel and gasoline sold in the Member States need to be biofuels, starting with 2% in 2005 and progressively increasing so as to reach a minimum of 5.75% of fuels sold in 2010. One possible source of biomass-based fuel is ethanol produced from wood.

Legislation supports the use of wood for energy production in several EU countries (Sweden, Finland, Austria, Denmark among others). Policy instruments in the form of targeted research and development, investment support, energy taxation of fossil fuels and fixed prices for energy produced with renewables are some examples of support. There are plans on European level, as well as on national level to increase the use of biomass. The member countries have a common EU policy to fulfil the Kyoto agreements which the EU has signed. The member countries of the EU shall jointly decrease the emissions of six different greenhouse gases with on average 8% during the period starting in 1990 and ending in 2008-2012 (depending on type of action and type of gas). The different member countries have different goals and it is up to each country to design their own policy to target the goals. Another example of this policy

13 From the present 6% to 12%, with some 85 percent of the renewables being bioenergy.
is the EU-funded research programmes, where focus is on non-fossil fuels and non-fossil techniques to reduce emissions of green-house gases.

The use of renewable energy has increased in past years, especially of wood fuels. The development differs for different regions and countries. What is really increased are the plans to use renewable energy. If these plans will be fulfilled is a matter of economy, price development of competing fuels, technological development, policy issues etc. In other words, there is a rather long list of uncertainties.

Experts disagree on how long we can rely on oil as the dominant energy source. We know oil resources are limited and some forecasters give about 40 years supply at today’s production levels, other experts less time. The energy companies and especially oil companies have realised this of course and are searching for alternatives today.

![Graph](chart.png)

*Figure A2.1  Crude oil in current (nominal) and real prices (base 1990). 1970-2001. STEM, 2002*

We have seen an increase in energy prices over the past 30 years (figure A2.1). During the past 3 to 4 years we have seen an increased price development in oil prices, which also give some more interest for alternatives as wood for energy.

**A2.2  Wood for energy**

Expanded interest in renewable energy and alternative energy sources, has resulted in increased competition for raw material. Traditional industries, as well as the energy industry, are looking for new resources.

Forest resources are identified as one of the major supplies of renewable energy as wood-fibre in different forms. Roundwood is used for domestic heating all over Europe. Sometimes it is purchased on the open market but it is more common for local forest land owners to cut their energy supply for the cold season and may be for cooking from their own small wood lots. Controlled firewood cutting also occurs on public lands by local users. This small scale use of wood for energy has a high value for the user and cumulatively in the UNECE region constitutes a significant level of cuttings and energy. Commercially, logging residues like tops and branches are also used in some Nordic countries.
The forest products industry, i.e. sawmills, the panel industry and the pulp and paper industry, are the main users of timber and wood fibre in Europe. The industry produces wood and paper products but also produces by-products during the processes. By-products trade and use are complex in rather complicated trade patterns. For example, in the production of sawnwood the mill produces significant amounts of sawdust and chips, which are used in the pulp industry. Sawdust is also used in chipboard industries. Bark is mainly used for internal energy use at the mill, and sometimes by local municipalities. At worse it is deposited in landfills.

What is “new” in this market balance is the increased demand of wood for energy. This creates competition between traditional users and the energy industry, mainly regarding small-diameter wood and by-products.

The waste sector has grown strong in recent years, mainly due to legislation (for example EU waste regulations). The result of this is that large amounts of fibre are being recycled for use in the paperboard industry and for energy use.

Unfortunately there is a lack of reliable and detailed statistics in the field of wood for energy, which makes the comprehensive and detailed analyses and discussions sometimes rather difficult. We have to rely on case studies and a partial official statistics.

In the figure below a brief overview over the market is given. As we can see there is a diverse market with fuels of different qualities and of different origin. Technology could also differ quite much for combustion of the fuels and cleaning of the flue gases. Outside the figure we have the regular use and utilisation of raw materials like pulpwood, other types of waste (municipal solid waste etc.), other energy sources (like fossil fuels or nuclear power) and of course traditional industrial products from forest industry (like paper, panels or sawnwood).

![Figure A2.2 Principal overview of wood market actors. Forest resources to the right. Some actors demand one quality of timber and produces by-products which are very essential for others (Source: COST E31 action).](image)

What are the driving forces behind this new situation? In many countries legislation has been changed in order to target a more diverse supply to the energy production system. There are of course many alternative energy sources and wood for energy is a significant resource ready for use today and there are modern, efficient technologies in existence to utilise wood.
International agreements and programs meeting environmental threats are under way. The Kyoto Protocol calls for a reduction of green house gas emissions. Programs are established and here wood for energy is also very important and its use is being stimulated. Another, more regional agreement or program, is the trade of emissions that is planned for the EU and some other linked countries such as the Russian Federation. This will put additional demand on wood resources in the future.

One very powerful instrument for this is the introduction of energy taxation. Carbon-dioxide taxes have proved to be very efficient to change the fuel supply. One example comes from Sweden where the district heating sector has changed from fossil fuel domination to a mixture of different biofuels. This has been developed over a rather short time period (10-15 years) and on a commercial basis under the shelter of the legislation. Different national interests now question these kinds of taxes and some Governmental inquiries have been carried out recently.

**Sawdust markets**

There are significant market questions for the forest products industry behind the use of wood for energy. In many cases wood is a niche fuel and very profitable for certain sectors. A typical example is the domestic heating with firewood or with wood pellets in single-family houses. Another example is the use of wood fuels for internal use in the forest products industry, which has developed even without any incentives, driven by increased fuel prices, availability of on-site waste disposal problems and low-value by-products.

![Figure A2.3: Use of sawdust in Sweden, 1990-2001. STEM, unpublished.](image)

As an example of the development of competition between traditional use of wood fibre and energy use is the sawdust market in Sweden. Traditionally the particle board industry used most of the sawdust but significant amounts also used to go to landfills, be combusted as fuel or used in the pulp- and paper industry. In early 1990s the industry for refined wood fuels started producing pellets. Wood pellets may be used for large-scale energy production in the district-heating network but also in small-scale burning in single-family houses. We can see that there is a tremendous growth for the pellet industry but so far it has been developed along with the particle board industry (figure A2.3). Landfilling and other uses have decreased. Note that the use of sawdust has almost doubled during the
period. The reduction of use of sawdust in the pulp and paper industry is connected to new production technologies that requires more specified and fresh raw material.

If the pellet industry growth continues, the competition will be sharper on the market for sawdust and prices will increase. The particle board industry may suffer from this but the saw-mills are winners when they can get a better price for their by-products. This could also effect timber prices and give the forest owners a better margin.

**Trade**

The variable forest resources and the varying use of wood for energy are the factors behind the trade which has grown rather fast in Europe in the past years. Incentives to increase the use of biofuels will also increase the interest for trade in the near future.

---

**Figure A2.4  Import and export of solid biofuels in Europe, 1999. Alakangas et al., 2002.**

The Baltic Sea area is one market area (figure A2.4). This is also true for other wood raw materials as timber and chips for the pulp industry.

Forest resources are not available to the same extent in every European country while other countries have an oversupply. The trade is projected to increase in the near future when the EU policy is to be fulfilled to target the Kyoto agreement.

A very important work of standardising solid biofuels has started as the European Committee for standardisation (CEN) co-operation in 2000. One reason for this is to stimulate good competition...
between companies in different countries and thus also enhance more effective work and cheaper energy. Nineteen countries are participating in the work supported by national funding bodies and the European Union.

**Energy production**

For heat and steam production biofuels are well established. Modern, efficient techniques are available and the production competes very well even with other energy options. Co-combustion with fossil fuels is also an alternative becoming attractive for some countries.

A key question for the future energy system is the electricity production. A very efficient way to produce electricity with biofuels is combined heat and power production (CHP). However, electricity production in CHP is not very successful so far except for some countries like Finland, Denmark, Austria and the Netherlands. The deregulated electricity markets around Europe do not favour CHP. Cogeneration cannot compete well based on any fuel with conventional electricity production technology like coal-condense techniques or hydro or nuclear power. When electricity markets are deregulated the experience has been lower prices in the first years due to increased competition and lower transaction costs. These are some factors behind the negative projections for the future.

However, EU-policies to meet the Kyoto agreement favour CHP with biofuels (post Kyoto forecast). It is unclear what impact this policy will have on electricity production with biofuels in the future. In the end it is a question of profitability for the investor.

![Figure A2.5 Future cogeneration capacity in the European Union](image)

**Figure A2.5 Future cogeneration capacity in the European Union**

*Note:* All fuels combined, in GW.<br>

### A2.3 Discussion

This short paper outlines a future with increased competition in Europe for forest resources and manufacturing by-products. What will that mean for the energy production, for the traditional industry, for the energy industry and for landowners and sawmills?
Wood-based energy production could be expected to increase for heat and steam production. However for electricity production in CHP, electricity prices must rise significantly or new technologies would have to be developed to reach profitability. It leads to the conclusion of a short-term increase for heat production and a longer perspective for CHP to be economically advantageous.

The trend is an increased use of wood in different markets - first of low cost and lower qualities, and later of more expensive, processed products. This is true for both forest products industry and for the energy industry. New quality regulations or certification could also influence this trend. The competition starts with low-value fibre, possibly without any other commercial use and when demand rises, other wood or better timber qualities will be affected.

The annual increment of the forests increases in most European countries, gives the opportunity to expand the market for wood. Annual cuttings are lower than the increment which also yields a potential for use of wood in new sectors or for expansion in traditional sectors.

Trade of raw materials from the forest has increased and is forecasted to increase in the near future. This trade could consist of more roundwood or wood fuels from eastern European countries to Nordic or central European countries as well as wood for energy from the Nordic countries to the UK. For the energy use this will bring the focus on densification of the fuel, i.e. wood pellets or wood briquettes for more economical transportation. Shipping of wood is rather efficient and access to harbour locations is very essential. An example is areas around the Baltic Sea which today are one market area for both roundwood and wood pellets for quantities that are profitable to trade from sites with good infrastructure.

With this background the forest products industry feels strong competition on the traditional raw material markets. The key question for the industry is the level of payment for their raw material. This is connected to the demand of wood products and different paper qualities.

The forest owners can benefit of this new situation when they get another alternative for their products. They have had mainly one buyer of their timber for a long time. Forest owners may also get revenue for their precommercial thinning when wood for energy is introduced. The same situation is for the sawmilling industry which often needs payment for its by-products to reach profitability in the company. The sawmills using newer technology to saw small-sized roundwood may find new competition for their raw material from energy producers, in addition to their traditional competitors for the better quality pulpwood for pulp or panels.

The energy industries, where some are very powerful and financially strong, look for new fuels from the forest sector, from the waste-sector, from the agriculture sector and elsewhere. For them biofuels is one renewable energy source competing with other, i.e. solar panels, wind energy, small-scale hydro or other techniques.

The situation for the future is rather unclear and many things can happen, both calculated as the trends above and things that are impossible to project. This is the case now, where much of the wood energy developments are directly linked to legislation and policy. Future developments surely will be shaped by national and regional policy. A proactive reaction from the industry will strengthen the position for the use of wood and give their contribution to the questions around future risks for climate change. These are questions of high political concern which should be entertained at the Timber Committee Market Discussions and special topic discussion on 7 October 2003.
A2.4 References


ANNEX 3 PRESENTATIONS FROM THE POLICY FORUM

A3.1 Kit Prins, Introduction

UNECE TIMBER COMMITTEE
Policy Forum on Forests, Wood and Energy

7 October 2003
Geneva, Switzerland

Programme

• Introduction by Mr. Kit Prins
• Energy policies in the UNECE region by Mr. George Kowalski
• Renewable energy policies by Mr. Slav Slavov
• Wood energy and climate change by Mr. Miguel Trossero
• Wood energy policies by Mr. Kit Prins
• Regional policies for the forest-wood chain by Mr. Renaud Abord de Chatillon
• European Union sustainable energy policies by Mr. Jeremy Wall
• Energy from biomass, an economic opportunity for Europe by Ms. Christiane Egger
• Discussion
A3.2 George Kowalski, Energy policies in the UNECE region

**ENERGY POLICY OBJECTIVES: MAJOR DRIVERS**
- Energy security
  - uppermost in 1970s & early 1980s
  - “raison d’être”
  - re-emergence on policy/public agenda
- Economic efficiency
  - aim of current market liberalization
- Environmental protection
  - required element

**MARKET OPENING & LIBERALIZATION (1)**
**Aim**
- to enhance overall economic efficiency through competition

**Paradox**
- market structure
  - real atomistic competition unlikely
  - Reconsolidation/concentration
  - fewer, larger firms in larger market

**MARKET OPENING & LIBERALIZATION (2)**
**Dilemmas & concerns**
- Prices & margins
  - sources of enhanced efficiency
  - increased efficiency vs lower prices
- Investment
  - overcapacity/financial difficulties
  - uncertainty leading to delay/pause
- Different starting points
  - economies in transition

**DECOMPOSITION OF GAS PRICE DECREASE, USA, 1984-95**

- Residential
- Industry
**ENVIRONMENTAL PROTECTION TRENDS**

- Energy sector progress good
  - however, still much to be done
- Implementation rate slowing down
  - despite policy preoccupation
- Climate change of most concern
  - existing targets difficult to achieve
  - emission trading beneficial to some countries

**DECOMPOSITION OF CO₂ EMISSIONS GROWTH, 1971-99, WE**

**ENERGY EXPENDITURES TO DISPOSABLE INCOME, WESTERN ECONOMIES, %**
ENERGY SECURITY (1)
- Energy fundamentals reverting back to 1970s/early 1980s (even if conditions not the same)
  - Increasing import dependence
  - Concentration of production/reserves
    - Petroleum & gas
  - Growing reliance on Middle East oil
    - Political/social instability

ENERGY SECURITY (2)
- Investment risks & uncertainties
  - Increasing share of production outside Western Economies
    - Impact of market opening
  - Longer supply routes
  - Terrorism
  - Full implications of market liberalization unclear

IMPLICATIONS (1)
Fossil fuels
- Medium term: increased use of gas
  - Emerging global market (LNG)
- Longer term: cleaner coal/oil technologies
  - Hydrogen & carbon sequestration
- Mainstay of energy supplies

Nuclear power
- Continuing pause in development
- Important element of diversity

Renewables
- Increasing but not panacea

IMPLICATIONS (2)
Market structure
- Consolidation
- Larger companies in electricity and gas
- Larger competitive regional markets

Uncertainties
- Investment climate
- Policy response to climate change issue
A3.3 Slav Slavov, Renewable energy policies

**Economic Commission for Europe**

**RENEWABLES IN ECE REGION**

**POLICY FORUM:** FORESTS, WOOD AND ENERGY
7 October 2003, Geneva

Division for Industrial Restructuring, Sustainable Energy and Enterprise Development

**CONTENTS**
- Renewable Energy Definitions
- Political impetus to RES
- Potential for RES in ECE region
- Current market and costs
- Policy to support the market

**DEFINITIONS & SCOPE**
- Different definitions among agencies
  - Some time influenced by technology applied
  - Some times include/exclude particularly
- Need to harmonize data collection
  - At national level
  - At international level

**POLITICAL IMPETUS TO RES TODAY**

**Driving forces**
- Kyoto Protocol Commitments
- Johannesburg Implementation Plan
- EC Strategy & Action Plan on RES
- EU Directive 2001/77/EC
- Ministerial Conference on Environment for Europe (Kiev)

**POTENTIAL FOR RES IN ECE REGION**

1. Great potential for:
   - **biomass** - North America, RF, C+N E
   - **wind** – North America, N+CE, coasts
   - **Solar PH** - higher intensity below 90°
2. Limited potential for:
   - **Hydropower**, in particular large scale
   - **Geothermal**

**MARKET SHARE OF RES IN ECE REGION**

- RES represent 5% of TPES
- Biomass & hydro= 85% of TRES
- RES-E = 15% of total electricity
- Main market RES: biomass, hydro, geothermal, wind and solar
  - but
- Municipal + industrial waste is also
MARKET SHARE OF RES IN ECE REGION

- Between 1990-2003, market share of RES to TPES increased in the same pace than traditional energy sources;
- Annual increase of electricity from other than hydro: EU=9%; NA=0.4%;
- ECE transition countries= around 0%;
- Conclusion: RES-E other than hydro are currently increasing in EU/WE only.

RES-E MARKET GROWTH

- RES-E Market is growing up faster since 1997, with an annual rate of:
  - wind power in EU-15 = 30-35%;
  - solar Ph in EU-15 = 20-25%;
  - solid biomass in EU-15= 7-10%;
  - windpower installed: 30 GW in ECE; of which 25GW in Europe.

COMPETITIVENESS AND COSTS

- RES are not competitive to others;
- but, costs continuously decrease thanks to technology performance
- on shore wind & biomass more competitive;
- trade barriers for biomass to be removed

POLICY SUPPORT TO RES-MARKET (1)

- Policy start with targets.
- EU average targets:
  - RES to increase from 6% to 12% by 2010 in TPES; and
  - RES-E to increase from 14% to 22%;
- each EU member to set a RES-target consistent with this on CO2 reduction.

POLICY SUPPORT IN TRANSITION ECONOMIES

- targets set in some ECE-TG;
- in most, policy existing but not enforced;
- lack of supportive schemes, no finance;
- energy prices are still low;
- large potential to reduce CO2 through EE improvements and conservation measures
- RES seen rather as small local business than having environmental merits.

RES-E capacities in 8-selected economies in transition

- waste 1%
- wind 0%
- hydro<10MW 5%
- hydro<50MW 72%
- biomass 0%
POLICY SUPPORT TO RES-MARKET (2)

- Five types of policy instruments used:
  - tax exemption or reduction;
  - tax refunds;
  - investment aid;
  - direct price support schemes
  - green certificates
- 100 cases in Europe, 20-25 in biomass

POLICY SUPPORT EU DIRECTIVE on RES-E

- The Directive: Legal Community Frame on Access for RES-E to the internal market
- Objective: To promote an increase of RES share to electricity produced in internal market
- The Directive provides for conditions on:
  - how to set national targets and schemes;
  - how to set Guarantee of origin of electricity
  - grid system issues;

POLICY SUPPORT TO RES-MARKET (4)

- The Questions to policy making:
- Are present RES-policies compatible with undistorted competitive energy markets?
- Whether with those policies targets would be met?
- Supportive schemes? To all or to most competitive? and for “taking off” or for ever?
- Do countries need harmonized RES policy, in particular to off-grid renewables?
- How RES can benefit from Kyoto mechanisms?
A3.4 Miguel Trossero, Wood energy and climate change

**Main facts**
- Woodfuel
- Wood energy
- Poverty and health
- Food security
- Productive uses
- Policies and institutions
- National capacities

**What is new?**
- EP & PA are topics of major concern
- EP & PA can help to revitalise actions on WE
- Large body of knowledge/experience accumulated
- WE is becoming economically attractive

**Comparison of forestry for carbon emissions curb in power generation**

- Increased wood energy use may help to...
  - strengthen, expand, diversify forests & forest products roles.
  - enhance SFM, EP & PA.
  - support private sector initiatives & needs.
Forests, Wood and Energy: Policy Interactions

Barriers and Constraints

- Technical
- Social
- Environmental
- Economic
- Institutional

Barriers which prevent the realisation of sustainable WE Systems and the full use of potentials.

Institutional Barriers

- Policies
- Legal
- Technical institutions
- Private sector

Forestry services limitations

- Role and contributions of WE-CC are still poorly understood
- Unbalanced allocation of priorities/resources on timber & WE
- Technical responsibilities are fragmented
- Technical capabilities are insufficiently prepared
- Relations between forestry, energy organizations are weak
- Financial resources are rather limited
- R&D funds are insufficient

Private Sector Limitations

- Capacities of forest and WE enterprises are weak
- Incentives for WE initiatives are insufficient
- Human resources are not properly educated & trained
- WE is rarely integrated in existing educational programmes
- Information generation & dissemination still weak
- Partnerships weak

Conclusions

1. Wood energy policies affect forests, forestry and forest products
2. Forestry Services are not well prepared for WE development
   - Policies, strategies and programs are insufficient
   - Legal regulations are weak or inconsistent
   - Capacities are weak
3. Private sector is also insufficiently prepared

Recommendations

- The role of WE in forestry services needs to be enhanced.

- Increase political awareness
- Develop specific policies on WE and CC issues
- Adopt new & ad hoc legislation
- Establish inter-institutional programmes
- Enhance national and international partnerships
- Reinforce information systems and planning tools
- Stimulate active participation of private sector
A3.5 Kit Prins, Wood energy policies

Wood energy in the long term outlook: results of the EFSOS analysis

Kit Prins
Chief, UNECE Timber Branch

Structure of presentation
- Background
- The EFSOS approach
- Wood and energy policy interactions
- Long term outlook and issues

EFSOS policy study methods
- Transparent, participatory
- Delphi approach: bring together experts, and through iterative processes achieve consensus (even though stakeholder views differ widely)
- Mostly non-quantitative
- Linked (loosely) to quantitative analysis (trade/market model)
- Still experimental!

Policy analysis process
- Identify potential policy and market issues, inside and outside sector
- Prioritise issues, by probability and impact
- Group and describe priority issues (5 "scenario packages")
- Identify possible impact of policy choices on major sector parameters: forest available for wood supply, removals, production, trade, consumption

The 5 scenario packages:
- Biodiversity including nature conservation
- Globalisation, innovation and market structures
- Countries with economies in transition
- Regional development
- Energy and environment

Energy and environment: 3 scenario areas
- Promotion of renewable energy resources
- Improvement of waste management and emission controls
- Climate change
Focus on promotion of renewable energy sources ...

Promotion of renewable energy sources: policy measures
- Emphasize use of wood biomass as a source of energy
- Tax fossil energy sources and utilisation
- Abandon nuclear power
- Promote energy saving technologies

Probability
- All the measures under promotion of renewable energy sources were considered probable (100% probability) in all regions

If the policy measures listed were implemented, what would be the impact on forest sector major parameters (by region, compared to the baseline)?

NB: the responses presented on the following slides originate from the best judgement of the EFSOS group: they require critical review and discussion by a wider circle!

Impact on area of forest available for wood supply

<table>
<thead>
<tr>
<th></th>
<th>EU/EFTA</th>
<th>CEEC</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>Higher</td>
<td>Baseline</td>
<td></td>
</tr>
</tbody>
</table>

- Implies more wood supply from same area of forest
- No energy plantations?
Impact on removals, production and trade

- New (energy) markets would stimulate roundwood supply, and probably raise roundwood prices
- A "renewable energy economy" would be favourable to all forest products, not just energy wood

Impact on consumption

- Forest products would have advantages of cost (lower share of fossil fuels in energy costs) and image (renewability recognised)
- Are higher consumption levels compatible with lower GDP growth to be expected in the Conservation scenario?

Further issues

- Interactions with agriculture: land use competition, mechanism of support for biomass production
- Energy plantations (land availability, biodiversity, which energy crops?)
- Should wood energy be a small scale or a large scale sector? (or both?)
- Forms of delivered wood energy: heat, CHP, solid or liquid biofuels, electricity?
- Etc.

Need for a balanced approach

- Recognising imperatives of energy policy need for sustainable renewable energies (and limited potential of wood energy in big picture)
- Recognise present contributions of forest sector to sustainable development, in energy field, but also elsewhere (recycling, low emissions, landscape etc.)
- Develop energy policy and forest policy together

Draft EFSOS recommendation (6.4.5)

Balanced implementation of wood energy policies

- Governments should promote wood energy production and use, notably by raising prices for fossil fuels
- Governments should increase funding for R&D and create infrastructure for modern and competitive wood energy sector
- Pulpwood users would face higher costs (no "shortage"), but have an opportunity to become wood energy suppliers
- Need for consultation and analysis of interactions
A3.6 Christiane Egger, Energy from biomass, an economic opportunity

Energy from biomass
an economic opportunity for Europe’s region

Christiane Egger
G.O. Energiesparverband
Landstr. 42, A-4620 Linz, Austria
T: +43732-7720-4260
E: office@esv.or.at
www.esv.or.at

FEDARENE
- European network of regional and local actors, active in energy efficiency, renewable energy sources and environment protection
- mostly regional and local agencies implementing policies and programmes for their governments
- presently 65 members, office in Brussels

Energy Action Plan of Upper Austria
1994 - 1999
50% renewable energy (14% hydro, 14% biomass, 2% solar)
energy consumption in new housing reduced by 30%
2003 - 2010
double biomass & solar
increase energy efficiency by 10%

G.O. Energiesparverband
regional energy agency
energy efficiency, renewable energy & innovative technologies
main funding: regional government services to private households, SMEs, public bodies

Why energy from biomass?
Economic considerations
- local job & income creation (13,040 jobs in Austria)
- security of supply & decrease of import dependence (3 billion Euro/l in Austria)
- emission trading costs
- innovation
- other negative economic impacts of climate change

Biomass in Upper Austria

- 14% of total energy consumption
- 15,000 biomass heating installations
- 200 district heating plants
- > 100 municipalities use biomass for heating

Examples & success stories
- automatic wood pellet heating systems
- biomass district heating networks
- large-scale CHP plants
Promotion of biomass market development

goal:
double modern biomass installations

“create demand”:
- energy hotline
- energy advice
- publications
- competitions
- financial support
- legal measures

“meet demand”:
- training & education
- research & demonstration
- Third Party Financing
- Cokoenergy-Cluster
ANNEX 4  PRESENTATIONS FROM THE MARKET DISCUSSIONS

A4.1  Ed Pepke, Introduction

UNECE TIMBER COMMITTEE
ANNUAL MARKET DISCUSSIONS
Theme of 2003 discussions:
"Market effects of wood energy policies"
7-8 October 2003
Geneva, Switzerland

UNECE TIMBER COMMITTEE
Brieﬁng session, 7-10 October 2003

Market sectors and topics
• Market effects of wood energy policies
• Economic situation in the UNECE region
• Wood raw materials, including wood fuel
• Illegal logging effects on forest products markets
• Certiﬁed forest products
• Value added forest products
• Sawn softwood
• Sawn hardwood, including tropical timber
• Panels
• Paper, paperboard and woodpulp

UNECE TIMBER COMMITTEE
Brieﬁng session, 7-10 October 2003

Goals of the market discussions
• Provide a forum for different viewpoints
• Analyze and discuss the markets in 2002 and 2003
• Forecast for 2003 and 2004
• Produce common market statement
  – Price releases
  – Update the Forest Products Annual Market Analysis, 2002-2003
  – Produce Forest Products Markets: Prospects for 2004

UNECE TIMBER COMMITTEE
Brieﬁng session, 7-10 October 2003

Format of the discussions
• Introduction by secretariat or member of UNECE&FAO Team of Specialists on Forest Products Markets and Marketing
• Expert presentation(s)
• Experts form panel at head table
• Discussion and statements from delegations

UNECE TIMBER COMMITTEE
Brieﬁng session, 7-10 October 2003

Sources of information
• Countries’ replies to Timber Committee Questionnaire with 2003 and 2004 market forecasts
• Country market statements
• Findings from draft Forest Products Annual Market Analysis, 2002-2004
• Expert presentations
• Delegations’ interventions in discussions

UNECE TIMBER COMMITTEE
Brieﬁng session, 7-10 October 2003

Country market statements
• General economic trends affecting the forest and forest industries sector (brief description)
• Policy measures taken in your country over the past 18 months, which might have a bearing on trade and markets of forest products
• Developments in forest products markets sectors (major emphasis)
• Tables of forecasts and economic info

UNECE TIMBER COMMITTEE
Brieﬁng session, 7-10 October 2003
A4.2 Bengt Hillring, Trends and market effects of wood energy policies

Introduction
- Industrial use of wood fibre has increased
- Oil is the main international energy source
- Climate change – Energy production – CO₂
- European Union different strategies to meet greenhouse gas mitigation and safe supply
- Use of renewables increased – especially the plans to increase

Conclusions
- Wood for energy is expected to increase
- Trade of wood products is also expected to increase
- COMPETITION!
- Powerful energy industry
- Future?
- Today’s discussion!
A4.3 Hans Jansen, Export of biomass from Russia to the Netherlands

Export of biomass from Russia in the context of climate change policies

By: Hans Jansen

ECE Timber Committee
Geneva, 7 October 2003

Core activities
- Sustainable development of the forest sector
- Customs cooperation
- Timber port logistics
- Trade facilitation procedures
- Biomass trade logistics

Recent activities in 2003
- Conference on "Sustainable development of the Forestry Complex of Northwest Russia and expanding interaction with EU countries in environment protection"
  (11-12 September, St. Petersburg)
- Workshops at the 5th International Forestry Forum "Russian Timber Complex in the 21st century"
  On Timber Port Logistics
  On Sustainable Development
  (14-16 October, St. Petersburg)
- Conference on "Sustainable Development Strategies at enlargement level"
  (8-10 December, St. Petersburg)

The Russian Federation

Biomass as Alternative Energy

"Organic matter available on a renewable basis including forest residues, wood and wood waste."

Vast forests resources
Forests, Wood and Energy: Policy Interactions

Timber Resources of Russia

Biomass

EMO terminal Rotterdam

Large scale international bio-energy trade

Advantages:
- CO2-neutral biomass resources are utilised efficiently on a large scale
- New markets may generate substantial income sources for relatively poor world regions
- Energy markets worldwide may become more stable due to a large number of energy suppliers compared to the current situation
Bio-energy trade

- Direct transport of biomass materials (chips, logs, bales)
- Intermediate energy carriers (such as bio-oil or charcoal)
- High-quality energy carriers (such as ethanol and methanol, or electricity)

A new market opportunity

Bio-trade schemes have a very large potential to mitigate GHG emissions and contribute to sustainable development.

They could be a key component of the future world’s energy system.

Opportunities

- Sustainable logistics chain
- Certification of woody biomass
- Coordinated approach
- Training at enterprise level

For further information:

Hans Jansen
Project Manager
UNECE Trade Development and Timber Division
Tel.: 41 22 917 37 28
hans.jansen@unepce.org
A4.4 Bernard de Galembert, CEPI’s viewpoint on wood energy policies

**Wood-using industries and woody biomass**

The case of the European Pulp and Paper Industries

October 2003

**RES is not a fad**

- EU White Paper on renewable energy sources
- RES-Electricity Directive
- Intelligent Energy for Europe (IEE) Programme
- EU policy options on RES-Heat
- Communication on RES
- Johannesburg Renewable Energy Coalition (JREC)
  
  "We express our strong commitment to the promotion of renewable energy and to the increase of the share of renewable energy sources in the global total primary energy supply."

**Wood at the intersection**

Raw material

Energy

Nature

**Industry’s increasing capacity**

**Forecasts of paper and board consumption**

- 2.7% yearly average

Extrapolation for the period 2002-2005

**Forest - a growing resource**

25 m³/sec., of which 12 are not used
Forests, Wood and Energy: Policy Interactions

- **Looking into the future...**
  - Graph showing trends in consumption and harvesting over the years.

- **Nature-oriented management**
  - Enhanced natural conservation values in the forests.
  - Reduced harvesting.
  - Changed wood quality and type.

- **Climate change**
  - Balancing forest potential to sequester carbon.
  - Postponed harvesting.
  - Changing management practices.

- **Renewable energy**
  - Promoting the use of wood as a source of renewable energy.
  - Competitive use of wood.
  - Distorted wood market.

- **Theoretical shortfall**
  - Chart showing shortfall in industry demand vs. supply of wood and bioenergy.

- **Pulp and paper industries’ general objective**
  - To maintain the sustainability of the forest ecosystem.
  - To further contribute to the RES and RES-E targets put forward by the Community.
  - Aiming for a free energy market.
  - To secure the future wood availability both in terms of quantity and quality for the EU PPI.
Candidate measures leading to increasing the available biomass for energy production:

- SRF and biofuels from agricultural origin (CAP)
- Increased harvesting potential (via research, mechanisation, new methods)
- Increase felling rate
- Extract larger quantities of forest residues (e.g. stumps, branches and tops)
- Collect larger volumes of industry and post-consumer residues via contracts subscribed with municipal waste management organisations
- Rely on the international trade of wood fibres

EU should act as a facilitator
A4.5 Natalie Hufnagl, Forest owners viewpoint on wood energy policies

Private forest owners’ viewpoint on wood energy policies

Natalie Hufnagl
CEPT

Structure and future development of forest ownership in Europe
- Diversity is key
- Holding size
- Socio-demographic development

Annual fellings versus annual increment

Optimisation of the resource use or forestry as the core of rural development
A4.6 Eva Janssens, EPF’s viewpoint on wood energy policies

**European Panel Federation**
- Members in 23 countries
- Particleboard 32.1 million m³
- MDF 10.5 million m³
- OSB 2.1 million m³

**Wood-Based Panel Industry**
- Pioneer in sustainable use of resources
  - Process heating (up to 91% savings) and CHP with wood biomass not suitable for recycling
  - Supporting sustainable forest management
  - Continuously improving recycling rates

**Sustainable resource management and respect for the carbon cycle**
- Thanks to sustainable forest management, the wood-based panel industry has not been detrimental to the forest resource.
- European (EU-15) forests grow by 4 m³/hectare
- Using wood extracted from the forest for manufacturing products contributes to sustainable development:
  - Wood products are carbon sinks
  - Wood products require minimal energy for manufacturing
  - Wood products are an energy source at the end of the life cycle

**Raw wood consumption of the European particleboard industry**
- Recycled wood 14%
- Sawmill by-products 62%
- Virgin wood 24%

**Particleboard wood demand 2003**
- Europe
  - Germany
  - Italy
  - France
  - Spain
  - UK
  - Belgium
  - Austria
  - Sweden
  - Norway
  - Netherlands
  - Denmark

-的需求量单位为1,000干吨
Forests, Wood and Energy: Policy Interactions

**EU Energy Policy**
- 1997: White Paper on renewable energy
- Target WP: Double the contribution of renewable energy by 2010
  *Triple the contribution of biomass - mainly wood -*

---

**Wood products vs Biomass energy**
- Increasing use of wood for energy production
- Governments in Europe are granting subsidies for building and operating biomass power plants as well as to the marketing of the so-called "green energy"
- Simultaneously, the taxes on the use of fossil fuels increase
- This leads to increasing costs for wood products, making our companies less competitive
- Several production businesses for wood-based panels have already closed, others may follow!

---

**The main problem**

**BIOMASS = WOOD**
- All national RES support schemes start by focusing on the most obvious biomass fuel: *wood*
- The effects on the wood supply to the wood-based panels industries are significant

---

**Is this the most eco-efficient use of wood?**

**Using wood to tackle climate change**

*The European Commission writes:*

Wood plays a major role in combating climate change:

Greater use of wood products will
- stimulate the expansion of Europe’s forests and
- reduce greenhouse gas emissions
- by substituting for fossil fuel intensive products

Commission is examining ways to encourage these trends
EPF Position

Let wood products functionally cascade:

- Primary product
- Re-use and/or
- Recycle
- Eventually use wood as an energy source:

AFTER IT HAS BEEN FULLY USED

Sound use of wood

The value chain of the wood resource is at present not respected:

- Material suitable for the production of wood-based products is used directly for energy generation.

The energy market is not governed by free market principles:

= Subsidies

By recognizing the value chains I

By recognizing the value chains II

In summary

- 6.112 / dry ton
- 2 labour hours / dry ton

Possible solutions

- Enhanced use of wood products
- Encouraging recycling of wood by-products & residues
  - Support research on sorting & cleaning technologies
  - Improve the waste regulations
- Wood residues that comply with quality standards are not waste
- Developing a definition of and appropriate requirements for (secondary) wood fuels
**Possible solutions II**

- More intensified usage of wood residues, currently left behind in the forests
- Further improved techniques for growing forests, resulting in increased yield per hectare of forest, improved quality of harvested wood towards final applications
- Reafforestation of agricultural land, recurrently becoming available for alternative purposes
- Considering short rotation forestry as agriculture

**Conclusions and Recommendations**

- Avoid massive burning of wood for purely energetic reasons
- Help keep the value chain of wood-based products as long-lasting pools of carbon, substantially contributing to climate change mitigation
- Do not ‘quickly’ burn wood as a raw material for durable applications by favouring the felling of trees, unless locally socio-economic and environmental considerations are compelling

**Conclusions and Recommendations II**

- Fully recognize the superior eco-efficiency of wood-based products and their supreme properties in recycling, with minimal energy use, as compared to other materials
- Push for future research policies on efficient recovery of forest residues and development of biomass crops specifically grown for energy generation
- Propose a realistic “forestry-for-energy” target

- Only burn wood after it has been fully and soundly used.
A4.7 Jeremy Wall, Some aspects of EU policies affecting the use of wood as a renewable energy source

**61st UNECE Timber Committee**
Geneva, 7th – 10th October, 2003

Policy Forum: Forests, Wood and Energy

“Some aspects of EU policies affecting the use of wood as a renewable energy source”

Jeremy Wall (Forest-Based & Related Industries’ Unit)
DG Enterprise, European Commission

**Main EU Policies Affecting the Use of Wood as RES**

**Internal:**
- Energy
- Industrial (Enterprise)
- Agriculture
- Regional
- Taxation
- Research & Development

**Global:**
- Environment
- Competition
- Trade

NB Directorate General for each policy

**Recent Concern over the Use of Wood for Energy Stems From:**

UNCCC – KYOTO Protocol

- Energy for the Future
- Renewable Sources of Energy

**White Paper Indicative Objective:**
- Doubling (to 12%) of RES contribution to total EU energy use by 2010

For Biomass X 3 = Extra 90 Mtoe

But: Goals for different types of biomass not well defined

Flexibility for member states to determine own targets (variable)

**Goals of the EU RES Strategy - Biomass**

1997 – variable situation between EU members:
- % Biomass/total energy:
  - Austria – 12%
  - Finland – 23%
  - UK, Belgium c. 1%
  - Sweden - 18%

MS have very different energy supply situations

For Biomass, White Paper Scenario:

From estimated unexploited sources/residues:
- Biogas could deliver 15 Mtoe from 80 Mtoe
- Farm & Wood
  - 50 Mtoe from 150 Mtoe
- Energy crops
  - 45 Mtoe

However, wood seen as main target since:
- Traditionally used, known technology
- Available (annual forest cut 65% of NAF), cheap
- Other biomass RES not well developed
Forests, Wood and Energy: Policy Interactions

**Joint Study: CEI-Hois, CEPI, DG ENTR., Fr. Min. Agrs.**

- Presumed political imperative to reach RES policy goals in any case
- Assumed large wood component (27 Mtoe)
- Used novel modelling technique (GFPM)

Results indicated RES taking 167 M m³ from forest-based industries by 2010; serious impact on prices of products.

Carried out 1998-9, summary published 2000

**EU Developments with RES since 2000:**
- Increased forecasts for forest-based industries' wood consumption, so far met by imports (CEECs, Russia)

EU legislation:
- "Green electricity Directive (22% RES by 2010)
- Biofuels Directive
- CHP (Combined Heat & Power)
- (Directive on Energy Efficiency in Buildings)

**Ad Hoc Working Group on Wood, Biomass RES & the EU Forest-Based Industries**

**Objective:** To examine the relationships between EU policies affecting RES and the European wood suppliers and wood users

**Members:** Forest owners, wood & paper industries, energy sector, EU Commission services, experts

**Issues:**
- Trade policy: increasingly global markets for wood and forest products (NB pellets)
- Industry policy: unregulated wood market
- Competition policy: use of state aids
- Taxation policy: taxes as economic lever
- Environment policy: wood as an environmentally compatible material – Carbon storage v. RES
- Agriculture and R&D policies: alternative biomass
Some facts about the Timber Committee

The Timber Committee is a principal subsidiary body of the UNECE (United Nations Economic Commission for Europe) based in Geneva. It constitutes a forum for cooperation and consultation between member countries on forestry, forest industry and forest product matters. All countries of Europe; the former USSR; United States of America, Canada and Israel are members of the UNECE and participate in its work.

The UNECE Timber Committee shall, within the context of sustainable development, provide member countries with the information and services needed for policy- and decision-making regarding their forest and forest industry sector ("the sector"), including the trade and use of forest products and, when appropriate, formulate recommendations addressed to member Governments and interested organizations. To this end, it shall:

1. With the active participation of member countries, undertake short-, medium- and long-term analyses of developments in, and having an impact on, the sector, including those offering possibilities for the facilitation of international trade and for enhancing the protection of the environment;

2. In support of these analyses, collect, store and disseminate statistics relating to the sector, and carry out activities to improve their quality and comparability;

3. Provide the framework for cooperation e.g. by organizing seminars, workshops and ad hoc meetings and setting up time-limited ad hoc groups, for the exchange of economic, environmental and technical information between governments and other institutions of member countries that is needed for the development and implementation of policies leading to the sustainable development of the sector and to the protection of the environment in their respective countries;

4. Carry out tasks identified by the UNECE or the Timber Committee as being of priority, including the facilitation of subregional cooperation and activities in support of the economies in transition of central and eastern Europe and of the countries of the region that are developing from an economic point of view;

5. It should also keep under review its structure and priorities and cooperate with other international and intergovernmental organizations active in the sector, and in particular with the FAO (Food and Agriculture Organization of the United Nations) and its European Forestry Commission and with the ILO (International Labour Organisation), in order to ensure complementarities and to avoid duplication, thereby optimizing the use of resources.

More information about the Committee's work may be obtained by writing to:

UNECE/FAO Timber Branch
Trade Development and Timber Division
UN Economic Commission for Europe
Palais des Nations
CH - 1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org

http://www.unece.org/trade/timber
UNECE/FAO
Publications


*Timber Bulletin series is currently under review

Geneva Timber and Forest Study Papers

Forest policies and institutions of Europe, 1998-2000 ECE/TIM/SP/19
Forest and Forest Products Country Profile: Russian Federation ECE/TIM/SP/18

(Country profiles also exist on Albania, Armenia, Belarus, Bulgaria, former Czech and Slovak Federal Republic, Estonia, Georgia, Hungary, Lithuania, Poland, Romania, Republic of Moldova, Slovenia and Ukraine)

Forest resources of Europe, CIS, North America, Australia, Japan and New Zealand ECE/TIM/SP/17
State of European forests and forestry, 1999 ECE/TIM/SP/16
Non-wood goods and services of the forest ECE/TIM/SP/15

The above series of sales publications and subscriptions are available through United Nations Publications Offices as follows:

Orders from Africa, Europe and the Middle East should be sent to:
Sales and Marketing Section, Room C-113
United Nations
Palais des Nations
CH - 1211 Geneva 10, Switzerland
Fax: + 41 22 917 0027
E-mail: unpubli@unog.ch

Orders from North America, Latin America and the Caribbean, Asia and the Pacific should be sent to:
Sales and Marketing Section, Room DC2-853
United Nations
2 United Nations Plaza
New York, N.Y. 10017, United States, of America
Fax: +1 212 963 3489
E-mail: publications@un.org

Web site: http://www.un.org/Pubs/sales.htm
* * * * *
Geneva Timber and Forest Discussion Papers (original language only)

Outlook for the development of European Forest Resources
ECE/TIM/DP/41

Forest and Forest Products Country Profile: Serbia and Montenegro
ECE/TIM/DP/40

Forest Certification Update for the UNECE Region, 2003
ECE/TIM/DP/39

Forest and Forest Products Country Profile: Republic of Bulgaria
ECE/TIM/DP/38

Forest Legislation in Europe
ECE/TIM/DP/37

Value-Added Wood Products Markets, 2001-2003
ECE/TIM/DP/36

Trends in the Tropical Timber Trade, 2002-2003
ECE/TIM/DP/35

The Policy Context of the European Forest Sector
ECE/TIM/DP/34

Biological Diversity, Tree Species Composition and Environmental Protection in the Regional FRA-2000
ECE/TIM/DP/33

Forestry and Forest Products Country Profile: Ukraine
ECE/TIM/DP/32

The Development Of European Forest Resources, 1950 To 2000:
A Better Information Base
ECE/TIM/DP/31

Modelling and Projections of Forest Products Demand, Supply and Trade in Europe
ECE/TIM/DP/30

Employment Trends and Prospects in the European Forest Sector
ECE/TIM/DP/29

Forestry Cooperation with Countries in Transition
ECE/TIM/DP/28

Russian Federation Forest Sector Outlook Study
ECE/TIM/DP/27

Forest and Forest Products Country Profile: Georgia
ECE/TIM/DP/26

Forest certification update for the UNECE region, summer 2002
ECE/TIM/DP/25

Forecasts of economic growth in OECD and central and eastern European countries for the period 2000-2040
ECE/TIM/DP/24

Forest Certification update for the UNECE Region, summer 2001
ECE/TIM/DP/23

Structural, Compositional and Functional Aspects of Forest Biodiversity in Europe
ECE/TIM/DP/22

Markets for secondary processed wood products, 1990-2000
ECE/TIM/DP/21

Forest certification update for the UNECE Region, summer 2000
ECE/TIM/DP/20

Trade and environment issues in the forest and forest products sector
ECE/TIM/DP/19

Multiple use forestry
ECE/TIM/DP/18

Forest certification update for the UNECE Region, summer 1999
ECE/TIM/DP/17

A summary of “The competitive climate for wood products and paper packaging: the factors causing substitution with emphasis on environmental promotions”
ECE/TIM/DP/16

Recycling, energy and market interactions
ECE/TIM/DP/15

The status of forest certification in the UNECE region
ECE/TIM/DP/14

The role of women on forest properties in Haute-Savoie (France):
Initial researches
ECE/TIM/DP/13

Interim report on the Implementation of Resolution H3 of the Helsinki Ministerial Conference on the protection of forests in Europe (Results of the second enquiry)
ECE/TIM/DP/12

Manual on acute forest damage
ECE/TIM/DP/7

International Forest Fire News (two issues per year)

Timber and Forest Information Series
Timber Committee Yearbook 2004
ECE/TIM/INF/11

The above series of publications may be requested free of charge through:
UNECE/FAO Timber Branch
UNECE Trade Development and Timber Division
United Nations
Palais des Nations
CH - 1211 Geneva 10, Switzerland
Fax: + 41 22 917 0041
E-mail: info.timber@unece.org
Downloads are available at http://www.unece.org/trade/timber
UNECE/FAO GENEVA TIMBER AND FOREST DISCUSSION PAPERS

The objective of the Discussion Papers is to make available to a wider audience work carried out, usually by national experts, in the course of UNECE/FAO activities. The Discussion Papers do not represent the final official outputs of particular activities but rather contributions, which because of their subject matter or quality, deserve to be disseminated more widely than to the restricted official circles from whose work they emerged. The Discussion Papers are also utilized when the subject matter is not suitable (e.g. because of technical content, narrow focus, specialized audience) for distribution in the UNECE/FAO Geneva Timber and Forest Study Paper series. Another objective of the Discussion Papers is to stimulate dialogue and contacts among specialists.

In all cases, the author(s) of the discussion papers are identified, and the papers are solely their responsibility. The designation employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. The UNECE Timber Committee, the FAO European Forestry Commission, the governments of the authors’ country and the UNECE/FAO secretariat, are neither responsible for the opinions expressed, nor the facts presented, nor the conclusions and recommendations in the Discussion Paper.

In the interests of economy, Discussion Papers are issued in the original language only, with only minor language editing and final layout by the secretariat. They are distributed automatically to nominated forestry libraries and information centres in member countries. It is the intention to include this discussion paper on the Timber Committee website at: http://www.unece.org/trade/timber.

The Discussion Papers are available on request from the secretariat. Those interested in receiving them on the continuing basis should contact the secretariat as well. Your comments are most welcome and will be referred to the authors:

UNECE/FAO Timber Branch
UN Economic Commission for Europe
Palais des Nations
CH-1211 Geneva 10, Switzerland
Fax: +41 22 917 0041
E-mail: info.timber@unece.org
http://www.unece.org/trade/timber
Forests, Wood and Energy: Policy Interactions

*Forests, Wood and Energy: Policy Interactions* is the proceedings and summary of the discussions from the “Policy Forum: Forests, Wood and Energy” and the annual UNECE Timber Committee Market Discussions with their theme, the “Market effects of wood energy policies”. Both were held in October 2003 at the Committee’s annual session. This *Geneva Timber and Forest Discussion Paper* captures the essence of the discussions, and incorporates all available expert papers and presentations.

**UNECE Timber Committee and FAO European Forestry Commission**

Further information about forests and forest products, as well as information about the UNECE Timber Committee and the FAO European Forestry Commission is available on the website www.unece.org/trade/timber. Information about the UNECE may be found at www.unece.org and information about FAO may be found at www.fao.org.

UNECE/FAO Timber Branch  
UN Economic Commission for Europe  
Palais des Nations  
CH-1211 Geneva 10, Switzerland  
Fax: +41 22 917 0041  
E-mail: info.timber@unece.org  
http://www.unece.org/trade/timber