

Presentation 1.1: An overview of existing and emerging EU policies relating to energy from biomass and their effects on forest based industries

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Abstract

This presentation firstly gives an over-view of the main EU policies and measures which already influence the inter-actions of the forest products and wood-energy markets. Bearing in mind present EU forest resources and trends, the scope for more wood and residue production is then examined quantitatively in relation to both the needs of multifunctional forestry and the EU's growing expectations for renewable energy from biomass. The major issues and implications for the EU forest-based sector as a whole are identified and discussed as an input to the global debate.



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“An over-view of existing & emerging EU policies relating to energy from biomass and their effects on forest-based industries”

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Response to Climate Change challenges: Energy policy (EC + MS)

The challenges: changes in policies are needed to:

- mitigate climate change by reducing GHG emissions, CO₂ capture
- increase EU energy security by diversifying types & sources

EU response – especially from new & renewable energy sources (RES)

1. 1997 « White Paper » 12 % energy from renewable energy sources (RES) by 2010 (1997 = 6 % for EU-15):

Wind

Hydro

Geo-thermal

Photo-voltaic

Solar thermal

Biomass (no wood « target », est. 27 Mtoe)

2. Papers on Energy Security NB other technologies becoming available :

Hydrogen & fuel cells; Zero-emission fossil fuel plants; Smart grids

Another challenge: matching sustainability with competitiveness

Recalling the three components of sustainability (environmental, social, economic), as well as competitiveness, the **Lisbon Agenda**: was re-launched Feb 2005:

« To preserve the EU sustainable development model for the future, the Union's competitiveness must be strengthened; its economy dynamised »:

Other EU policies: Internal Mkt., Industry, Employment, R&D (EC + MS)

- EU + attractive for investment & work (Single Mkt., less & better regulation)
- 2010: R&D 3% GDP - knowledge & innovation for sustainable growth
- 2010 create 6 M new and better jobs

(Essentially: growth & jobs)

NB High-level Group on Competitiveness, Energy & Environment

EU forest-based sector – NB no EU sectoral policy

Communication on implementing the Lisbon Agenda (COM (2005) 474):

EU forest-based industries (**woodworking, pulp & paper; printing**):

- 340 Bn € turnover p.a. (8% of EU manufacturing added value),
- 2.5 M jobs (9 % of EU manufacturing jobs)
- growing export markets for paper and structural timbers
- 90 % of wood from sustainably managed EU forests (SFM)

Forest-based industries have leading roles:

- raw material operator and “co-ordinator”
- as a large energy user of electricity & heat
- as producer of electricity & heat for “export”
- as innovator and developer of new product and process technologies

Therefore the **competitiveness** of the EU forest based sector must be maintained and enhanced (products > jobs > wealth > growth) **BUT:**

Mostly SMEs; low investment in R&D & education; high costs; risk of relocation outside EU

EU FOREST-BASED SECTOR – EU forest resources:

EU has 160 M ha. forests (5 % global FOWL), mostly small, private lots (16 M owners), yielding 315 M m³ (o.b.) of wood annually (**55% NAI**)

- EU-25 forests grow 574 M m³ wood each year (o.b. NAI)
- EU forest-based industries use only 55% (315 M m³)
- So, the EU forest standing wood volume is constantly increasing (+ 290 M m³/yr) and so is the area (+ 400 000 ha/yr)
- Logically, EU forest resources can be more intensively used (85 % NAI fellings **+ 173 Mm³?**) no negative ecological impacts (**EEA: + 40 Mtoe**)
- **But:** large national, regional and local variations in supply & use and
- Not all wood of right species, age, dimension, quality at a distance, price and time suitable for markets (NB also infrastructures)
- Moreover, private forest owners not always “market” actors
- Hence, EU is importing about 10 % (+/- 30 M m³) of the supply of wood for industries (in Finland +/- 25 % wood raw material is imported)

Energy policy: renewable energy sources (RES) legislation

- Green Electricity Directive: 2010 - 21% EU use from RES
- Combined Heat & Power (CHP) Directive
- Directive on transport bio-fuels: 2010: 5.75 % 2010
- Emissions Trading System (ETS)
- (- Directive on Energy Efficiency in (new) Buildings)

Other actions:

- Biomass Action Plan BAP (2005)
- Bio-fuels Strategy (2006)
- Sustainable, Competitive & Secure Energy Strategy (2006)
- Action Plan for Energy Efficiency – 2006 (save 20% by 2020)

Legal framework for electricity, heat & ETS

- **Directive 2001/77/EC of 27.09.01 on RES-E : to establish a framework to increase the share of green electricity from 14% to 21% of gross electricity consumption by 2010**
- **Directive 2004/8/EC, on Cogeneration of Heat and Power : to create a framework for promotion and development of high efficiency cogeneration of heat and power**
- **Directive 2003/87/EC : establishing a scheme for a greenhouse gas emission allowance trading within the Community**

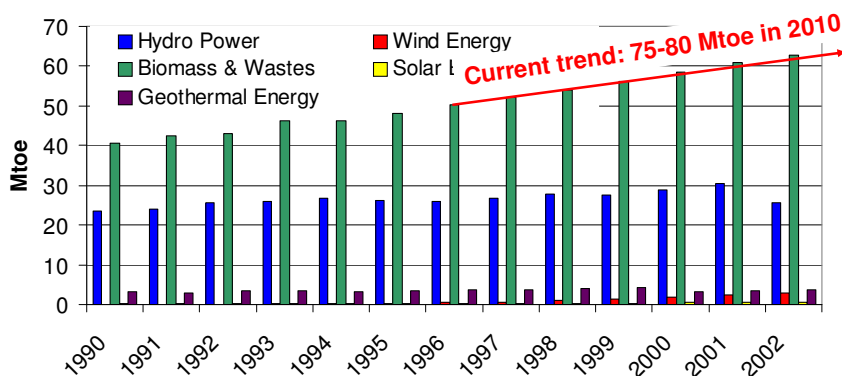
Legal framework for liquid biofuels & taxes

- **Directive 2003/30/EC of 08/05/2003 on biofuels :**
Member States shall ensure by end of 2005 a 2% and by end 2010 a 5.75% minimum proportion of biofuels of all gasoline and diesel fuels sold on their market
- **Directive 2003/96/EC of 27/10/2003, on taxation of energy products and electricity :** Article 16 allows MS to apply exemption or reduced rate of taxation on “biofuels and other products produced from biomass”

Danger of missing EU targets for 2010

White Paper target for EU-15: 135 Mtoe biomass use in 2010

Adjusted targets for EU-25: 150 Mtoe biomass use in 2010



Source: EUROSTAT

COM(2004)366 final: « biomass is lagging behind »

EU Renewable Energy Policy developments 2004-6



EU Biomass Action Plan & Bio-fuels Strategy



Essentially, four groups of measures:

- Heating & cooling (new) (BAP)
- Green electricity (revision) (BAP)
- Transport fuels (Bio-fuels Strategy)
- Cross-cutting issues (Common)
- Research & innovation (Common)

Biomass Action Plan - COM(2005) 628 final

- **Biomass heating:** RES-H legislation?, DH, CHP
- **Biomass electricity:** Res-e, CHP, co-fired, COM(2005)627

Bio-fuels Strategy - COM (2006) 34

Transport biofuels: Directive, imports, fuel standards

Common Impact Assessment - SEC(2005) 1573

Security of supply, Greenhouse gases (GHG) reduction, employment (rural/global), cost

Cross cutting issues: SFM, bio-diversity, waste, Forest Action Plan, CAP, (nat.) BAPs, structural & cohesion funds

R&D: FP7, CIP, technology platforms: F-B sector, Bio-fuels

Energy security - COM (2006) 105 (SEC(2006) 317

**European Strategy for Sustainable, Competitive and Secure Energy
Action Plan for Energy Efficiency – COM (2006) 545**

Implementation of the BAP 1

*The Commission will work towards a proposal for Community legislation in 2006 to encourage the use of renewable energy, including biomass, for **heating and cooling** (not exclusively BAP, but major role)*

Action:

- Public consultation on RES heating/cooling (end 10/06)
(issues: how to measure and monitor progress? Targets?)
- Expert Impact Assessments of future policy options on RES in general and RES heating/cooling in particular
- Legislation on RES heating/cooling (Res-H)?

NB also: progress report on Green Electricity Directive: end 2006? (Greater biomass use is a key to progress)

Implementation of the BAP/BS 2

*The Commission will bring forward a report in 2006 in view of a possible revision of the **bio-fuels directive**. This report will address the issues of .. bio-fuel targets, ...bio-fuel obligations... minimum sustainability requirements.*

Issues:

- Does the Directive need strengthening?
- Targets for 2015 and 2020? (up from 5.75 % in 2010?)
- Certification to reward “better performing” bio-fuels?
- Encouragement of second-generation bio-fuels?

Fuel standards: revision of **Fuel Quality?**

Trade: balanced approach to bio-fuels from the EU & 3rd countries: WTO Doha Round blocked; **certification** as proof of sustainable production?

Implementation of the BAP/BS 2

Bio-fuels - action:

Public consultation on bio-fuel policy (summer 2006)

Impact Assessment of future policy options by experts

Workshop on sustainability criteria & certification (with WWF) tender on sustainability criteria

Revised bio-fuel Directive to be proposed by the Commission in late 2006 ? final decision to be made by the EP and the Council

Implementation of the BAP 3

Cross-cutting issue - the Commission will assess the implementation of the CAP energy crop scheme.

Action: The Commission has assessed the implementation of the energy crop scheme & proposed (to the Council) the following changes:

- Extension to 8 MS which do not benefit from it yet
- Increase of maximum area to 2 million hectares
- Allowing MS to grant national aid of up to 50% of the cost of establishing multi-annual crops (in addition to the energy crop premium)

Implementation of the BAP 4

Cross-cutting issue - the Commission will bring forward a forestry action plan in which energy use of forest materials will play an important role.

Action:

- ✓ The Commission in its Forest Action Plan has proposed 18 key actions to be implemented jointly with the MS during the period of five years (2007–2011), including:
 - **Key action 4:** Promote the use of forest biomass for energy generation, i.e. the Standing Forestry Committee supporting the BAP implementation and pellet/ wood chip markets, MS assessing the availability of wood and wood residues, the Commission continuing its research efforts [...]

Implementation of the BAP 5 – other issues

Cross-cutting issues -

- European Council – positive about BAP
- BAP discussed in 5 EP cte.s – adoption November?
- Encourage national BAPs (first MS meeting on 06/07/06, second planned by the end of 2006)
- High-level Group on Energy & Competitiveness: 1st report June 2006; 2nd Oct 2006?
- study of the impacts of the use of biomass for energy on the forest-based industries?
- Action Plan for Energy Efficiency – save 20% by 2020

Legislative proposals: Res-H, Res-E?, bio-fuels?

RES Road Map: overall strategy for RES from 2010-2020 as part of Strategic Energy Review (late 2006/early 2007)

Implementation of the BAP 6 - RESEARCH

- Technology Platforms: sectoral vehicles for co-operation to develop Strategic Research Agendas (SRAs) which set R&D goals & priorities (based on long-term vision).

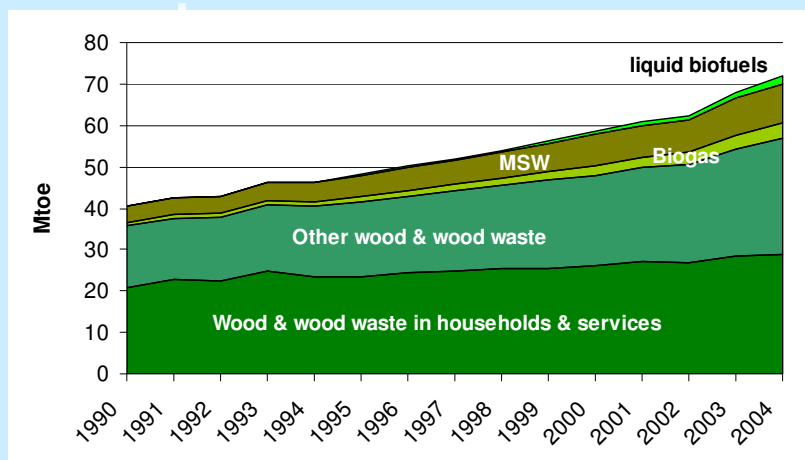
Examples:

- Forest-based Sector Technology Platform
Web-site: www.forestplatform.com
- Bio-fuels Technology Platform
“Biofuels Research Advisory Council” (**BIOFRAC**):
launched June 2006
- **7th RTD framework programme** under development, followed by 1st call for proposals
- increased profile for biomass research e.g. bio-refineries
NB also CIP (Competitiveness & Innovation Programme)

Impacts of EU RES policy measures on forest-based industries

(1997 White Paper estimated: + 27 M toe wood by 2010)

EU25 1990-2002: biomass & waste only as RES – real



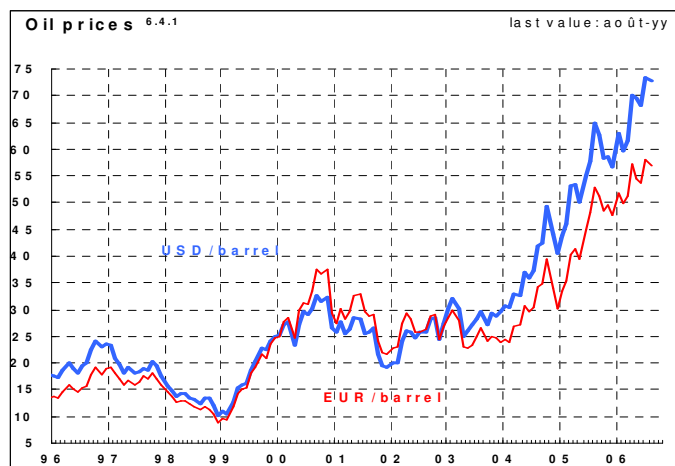
Source: EUROSTAT

“Targets” for EU BAP & Bio-fuels Strategy:
scale of biomass energy use – if all wood?

(M toe)/Mm ³	(2003)	(2010)	Difference
Green Electricity	110 Mm ³	303 Mm ³	(35 Mtoe) +193 Mm³
Heating & Cooling	264 Mm ³	413 Mm ³	(27 M toe) +149 Mm³
Transport Bio-fuels	6 Mm ³	105 Mm ³	(18 M toe) +99 Mm³
TOTAL	380 Mm³	820 Mm³	+440 Mm³

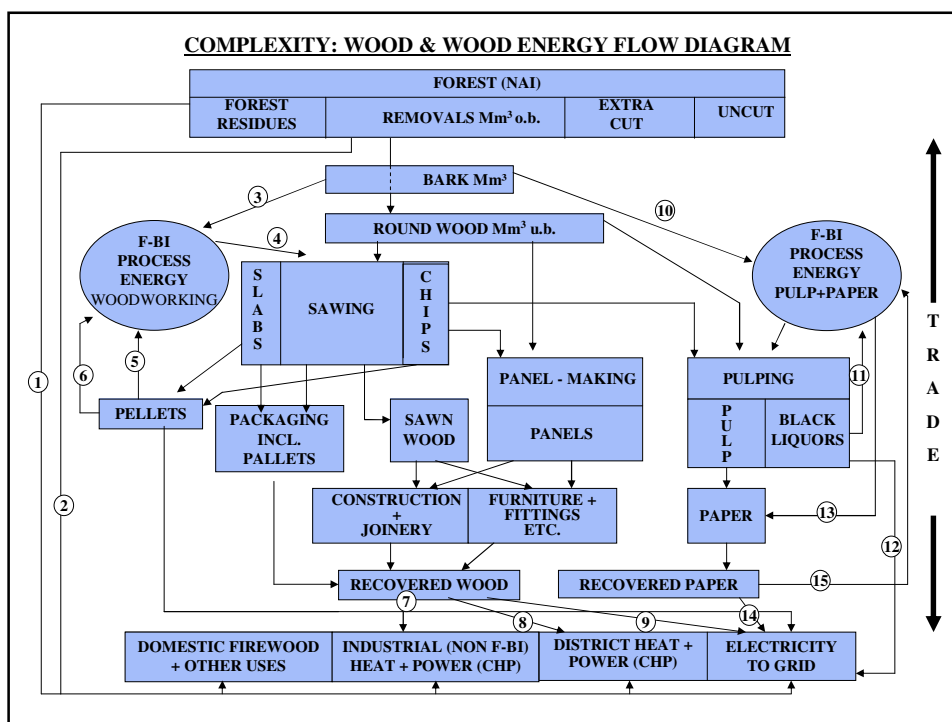
This scenario is drawn from the 2004 communication
“The share of renewable energy”, expanded to the EU-25.

PRICE OF OIL



Major factors arising for forest-based sector from EU Biomass Action Plan & Bio-fuels Strategy:

1. EU-level figures hide: **complex market structures; national & regional variations** related to extent, intensity & location of forest resources, population density, financial & fiscal regimes giving rise to several identifiable regions within Europe (NB cross-border effects in Cen. Europe)
2. There are both **risks** and **opportunities** for the forest-based sector, esp. industries
3. **Scale and costs** need to be assessed, esp. in context of **national biomass plans**
4. Need to safeguard (“urban”) forest **resources and access** to them at competitive prices for both industry and energy production



Risks:

- “end-of-pipe” subsidies do not pull previously unused biomass from the forests or gather post-consumer residues (Since costs for harvesting and logistics are crucial, a need exists to mobilise extra forest & other biomass),
- e.g. the use of high feed-in tariffs for the production of “green electricity” can indirectly raise wood and residue prices and thus compete for sawmill + other residues, otherwise used by the wood-based panel & pulp industries;
- energy efficiency may not be optimised and/or
- optimal use/full added value may not be derived from wood

Opportunities:

- forest owners can have more markets for using more wood (incl. residues);
- sawmills benefit from increased demand for their by-products like wood chips and sawdust;
- pulp industry can make black liquors not only into CHP, but other end uses too
- other new business opportunities from current & new technology e.g. “bio-refineries” (bio-fuels (m)ethanol based on cellulose and gasification of black liquors)
- Added value of the forest-based industry value chain is substantially higher than the energy sector value chain (heat or electricity consumption) and the products can be recycled.

STRATEGIC CONSIDERATIONS FOR EU FOREST-BASED SECTOR – 1

Questions arising:

1. How can the overall 2010 biomass « targets » best be met?
2. How much wood should be used as RES and how can that best be managed? i.e. at national, regional & local (+ company) levels
3. Which other kinds of biomass should be developed to fulfil the remaining biomass needs & how can that be done rapidly on a commercial scale?
4. Which specific measures are needed?

Qualitatively, more (woody biomass) can be generated by:

- Mobilising more EU forest resources (financially & physically) – a responsibility for both forest owners (private, state, other) and industry
- Costs for harvesting and logistics are crucial
- Increasing the use of residues – both forest and post-consumer
- Increasing fibre recovery (50% of paper produced from recycled fibres)
- Increasing raw material and energy efficiency in production and use

Sectoral “next steps”- for BAP, Bio-fuels Strategy

1. Political guidance from the High-level Group (CEE)
2. Work by EC DGs on development of national BAPs and emerging policy and legislation on Bio-fuels, Heating & Cooling, Energy Efficiency; Renewable Energy Road Map (in Strategic Energy Review)
3. Devise supporting RTD thematic programmes & calls; sectoral: TPs, SRAs, etc. & supporting studies
4. Sectoral: BAP: the Commission will “review the impact of the energy use of wood and wood residues on forest-based industries.” e.g. demand/price elasticities of wood & competing end-uses as well as other biomass (Other specific studies?); information:

EU/IEA/UNECE wood-energy sources, flows & use survey 2006

Sectoral “next steps” for BAP, Bio-fuels Strategy

5. devise « win/win/win » strategies to enhance competitiveness of (forest-based and other) sectors by optimising resource use, together with society’s energy, job and product needs at (sub-)national levels
6. cataloguing & dissemination of best practices (e.g. regional & local case studies)
7. development of “packages” of technical, institutional, financial & fiscal measures, which are market-based, realistic & affordable; encouraging synergies not conflicts
8. Re-convene Renewable Energy Sources Working Group (RES WG) stakeholders – forest-based industries + Member States – 26/09/2006

EU Forest Action Plan (COM 2006) 302, June 2006) - inter alia actions to:

Promote the use of forest biomass for energy generation through:

- support implementation of EU Biomass Action Plan
- investigate mobilisation of small/low-value timber & residues for energy
- gather information wood & residue availability and use for energy
- assess energy feasibility of using tree biomass & forest residues from SFM
- support R&D for heating & cooling, green electricity & bio-fuels

Facilitate Climate Change compliance & encourage adaptation to CC

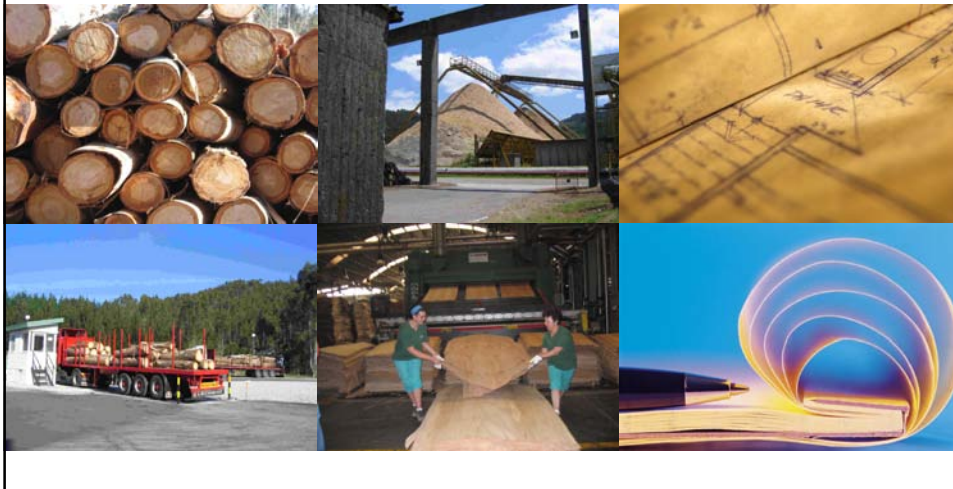
Study effects of globalisation on economic viability of EU forestry

NB other goals and actions for multi-functional forestry

1999: communication:« The State of the Competitiveness of the EU Forest-based and Related Industries »

New communication document foreseen (1st qtr. 2007):

« Innovative & sustainable forest-based industries in the EU »



New Challenges for the EU Forest-based Industries



- Increased Global Competition
- Wood Raw Material
- Secondary Raw Material
- Energy
- Demand for wood and paper products
- Structural Change
- Innovation, Research and Development
- Highlighting the characteristics of F-BI

Overall principles and objectives

- To enhance the competitiveness by taking care of the advanced know-how and competences that the EU forest-based industries possess while also taking into consideration related competences in the chemical industry and the machinery industry.
- To recognise the forest-based industries strategic role in mitigating climate change, enhancing a sustainable energy supply, promoting sustainable forest management and in supporting generally a sustainable development.
- To support an enhanced level of innovation and research and technological development.
- To facilitate the forest-based industries' access to a sufficient raw material supply, both new fibres and recovered, at reasonable costs.
- To facilitate an energy supply at competitive prices.

NB challenges will be addressed through 24 action areas

Thank you for your attention!

Molto grazie!



http://ec.europa.eu/enterprise/forest_based/index_en.html

General information on FP7

- **EU research**
<http://ec.europa.eu/comm/research>
- **Seventh Framework Programme**
http://ec.europa.eu/comm/research/future/index_en.cfm
- **Information on research programmes and projects**
<http://cordis.europa.eu/>
- **RTD *info* magazine**
<http://ec.europa.eu/comm/research/rtdinfo/>
- **Information requests**
research@ec.europa.eu

Energy policy & finance

EC, DG TREN: Biomass Action Plan

http://ec.europa.eu/energy/res/biomass_action_plan/green_electricity_en.htm

EC, REGIO: Structural and Cohesion funds

http://ec.europa.eu/regional_policy/index_en.htm

EC, DG AGRI: EAFRD

http://ec.europa.eu/agriculture/rurdev/index_en.htm

European Investment Bank (EIB)

<http://www.eib.org/>