



European Commission



## **Second Expert Meeting on National Biomass Action Plans**

**Brussels, 13/03/2007**

**Strategic supply and demand  
considerations on the competing  
end uses of wood for energy and  
wood-based products**

**Jeremy Wall**

**European Commission,**

**DG ENTR/G/4**

**[Jeremy.wall@ec.europa.eu](mailto:Jeremy.wall@ec.europa.eu)**

## **What has happened in the last eight months?**

- Oil and gas prices eased and stabilised
- Stern Report
- Energy and Climate Change Package (10/01/2007)
- Council conclusions 09/03/2007 (- 20 % CO<sub>2</sub>, etc.)

## **Wood biomass market:**

- prices have eased in some cases, (e.g. wooden pellets), but:
- supply remains tight in many regions, esp. Central Europe
- supply difficulties and costs have reduced competitiveness of wood-processing industries, esp. panels and pulp (closures)
- heightened concern by forest-based industries (F-BI) that trend will continue

### **What has DG Enterprise done?**

- contributed to inter-service co-operation, incl. Energy & Climate Package
- reconvened RES Working Group of the EU F-BI Advisory Committee
- co-operated with international organisations (FAO/IEA/UNECE)

### **RES Working Group :**

- three meetings (09/2006 – 01/2007): two WGs, one plenary
- output: a consensus working document, drafted by DG ENTR
- recommendations by Advisory Committee that:
  - i) document be published (?)
  - ii) document be made available to Standing Forestry Committee and Experts on National Biomass Plans
  - iii) recommendations contribute to guidelines for nBAPs (?)

## **Document structure and contents?**

- not a meetings report but a compilation of messages from presentations + enhanced analysis, conclusions & recommendations:

**A: Overall conclusions arising directly from the meetings:**  
general situation; demand for wood/price trends; factors influencing wood availability; regional variations; trade; wood in « RES targets »; wood mobilisation; integrated wood harvesting & utilisation; use of economic instruments; institutional considerations; policy aspects

**B: Additional and enhanced conclusions**

**C: Summary of recommendations**

## **Co-operation with international organisations:**

### **1. 1st European (EC/IEA/UNECE) Wood-energy Survey (07-10/2006)**

- based on recent co-operation, esp. with the FAO/UNECE JWPFS, the three agencies drew up a survey sent to both forestry statistics and energy use correspondents in the network countries (26 IEA + 56 UNECE (EU))
- only 19 replies, but from key wood-producing & –using countries; results:
- surprisingly showed a much higher level of energy-wood production and use than had even been estimated
- much production and use not officially recorded
- how to follow up? Meeting Geneva 19/03/2007, experts will refer to:
- Joint FAO/UNECE Working Party on Forest Economics & Statistics

Further info: <http://www.unece.org/trade/timber/Welcome.html>

## **Co-operation with international organisations 2:**

**International Seminar on Energy and the Forest Products Industry,**  
Rome, 30 – 31/10/2006 in collaboration with UNECE, ITTO and WBCSD  
(<http://www.fao.org/forestry/site/34867/en/>)

**Mobilising wood resources » Geneva 11-12/01/2007**  
(FAO/UNECE/MCPFE/EFI/CEPI)

<http://www.unece.org/trade/timber/workshops/2007/wmw/mobilisingwood.htm>

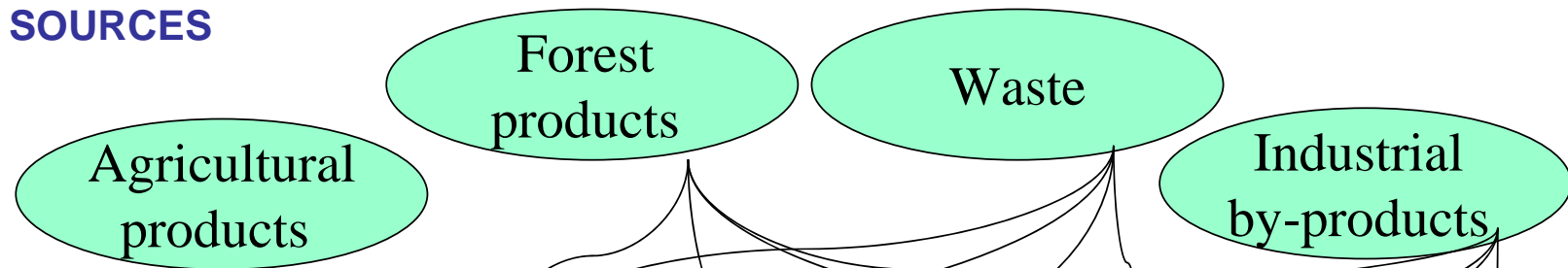
## **Opinion of the European Economic & Social Committee:**

Wood as an energy source in the enlarging Europe » (Kallio)

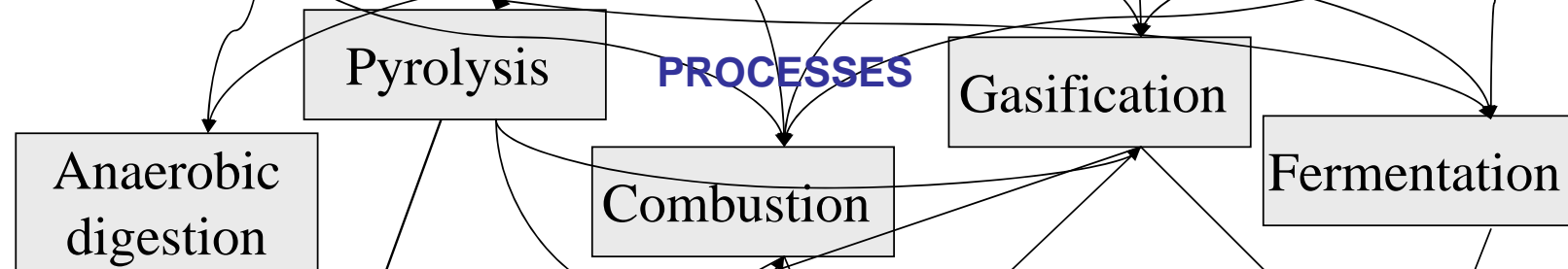
[http://eesc.europa.eu/activities/press/registry/index\\_en.asp](http://eesc.europa.eu/activities/press/registry/index_en.asp)

# THE BIO-ENERGY MATRIX

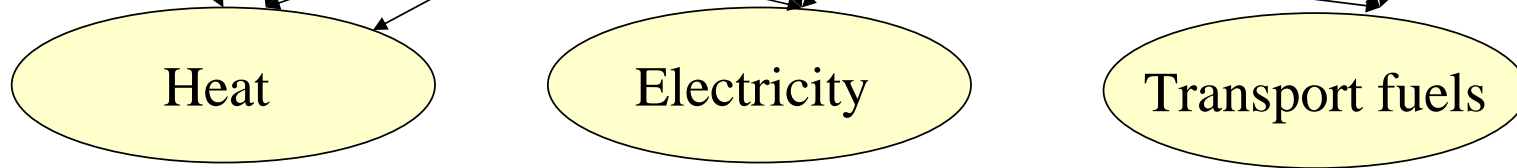
## SOURCES



## PROCESSES



## END USES



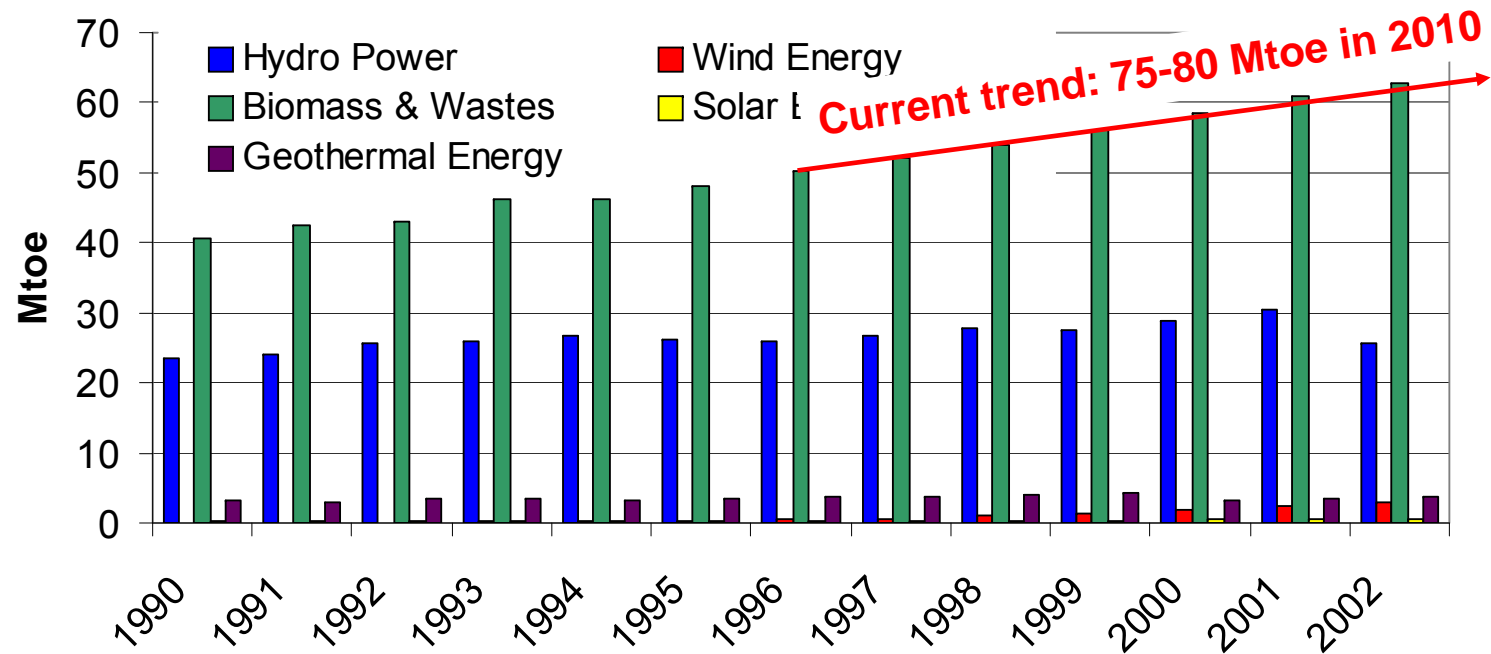
## A comprehensive but complex framework for RES and EE (energy efficiency) is already in place

| Political and legislative instruments: |   | Sector |    | Supply | Demand |    |     |
|--|---|--------|----|--------|--------|----|-----|
|  |   | RES    | EE |        | BLD    | TR | IND |
| 1997                                   | White Paper on RES                              | X      |    | X      | X      |    | X   |
|  | Green Paper on Security of Energy Supply        | X      | X  |        | X      | X  | X   |
|  | Directive on RES-electricity                    | X      |    | X      | X      |    | X   |
|  | Directive on Energy Performance of Buildings    | X      | X  |        | X      |    |     |
|  | Directive on Biofuels                           | X      |    | X      |        | X  |     |
|  | Directive on a Scheme for GHG Allowance Trading | X      | X  | X      |        |    | X   |
|  | Directive on the Taxation of Energy Products    | X      | X  | X      | X      | X  | X   |
|  | Directive on Co-generation                      | X      | X  | X      | X      |    | X   |
|  | Green Paper on Energy Efficiency                |        | X  |        | X      | X  | X   |
|  | Green Paper on Energy                           | X      | X  | X      | X      | X  | X   |
| 2006                                   | To be continued....                             | X      | X  | X      | X      | X  | X   |

# 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 »

**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**

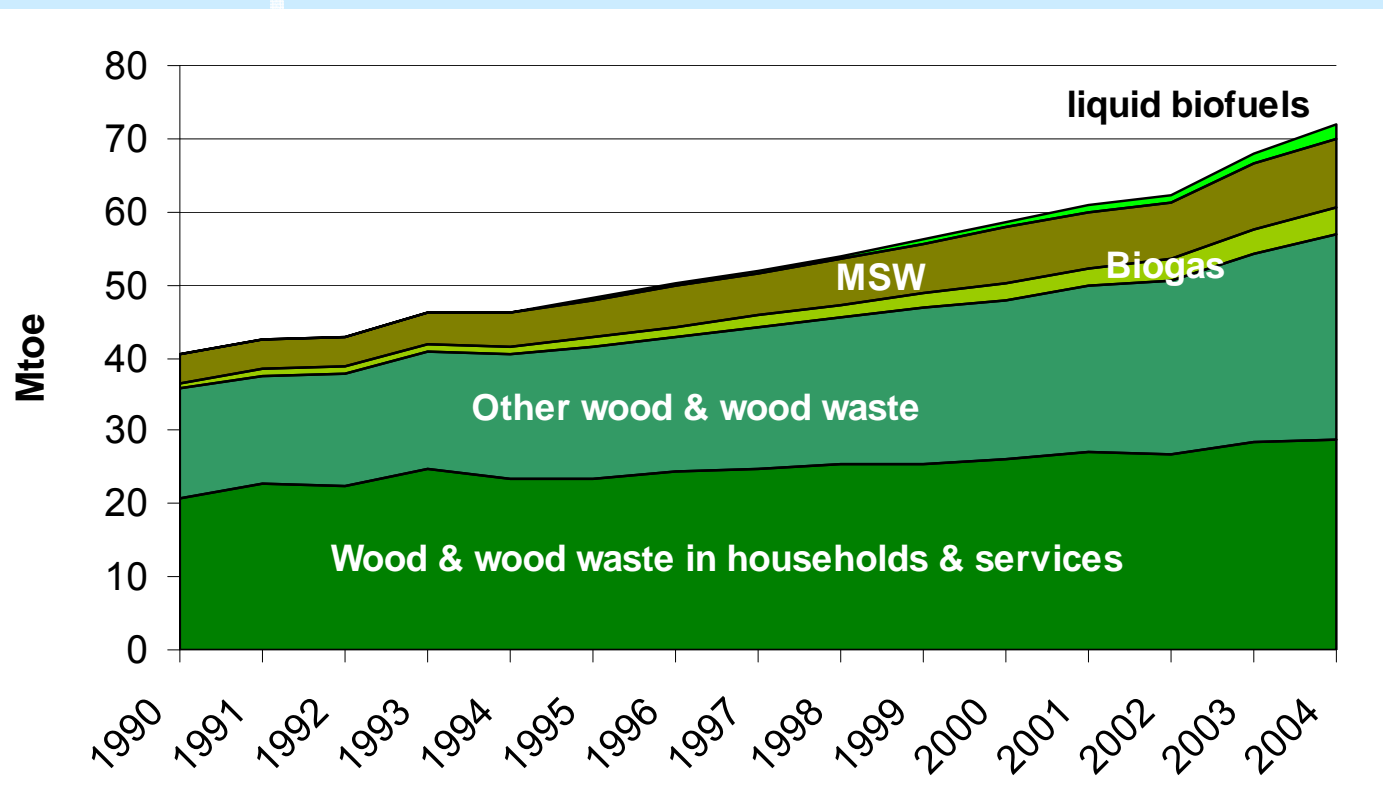
**European Strategy for Sustainable, Competitive and Secure Energy**

**Action Plan for Energy Efficiency – COM (2006) 545**

## 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

## EU forest resources:

- EU has 160 M ha. forests (5 % global FOWL), mostly small, private lots (16 M owners), yielding 315 M m<sup>3</sup> (o.b.) of wood annually **(55% NAI)**
- EU-25 forests grow 574 M m<sup>3</sup> wood each year (o.b. NAI)
- EU forest-based industries use only 55% (315 M m<sup>3</sup>)
- So, the EU forest standing wood volume is constantly increasing (+ 290 M m<sup>3</sup>/yr) and so is the area (+ 400 000 ha/yr)
- Logically, EU forest resources can be more intensively used (85 % NAI fellings **+ 173 Mm<sup>3</sup>?**) 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 m<sup>3</sup>) of the supply of wood for industries (in Finland +/- 25 % wood raw material is imported)
- NB 01/01/2007 EU enlargement to include Bulgaria and Romania adds 10.5 M ha forest and significant wood production and use

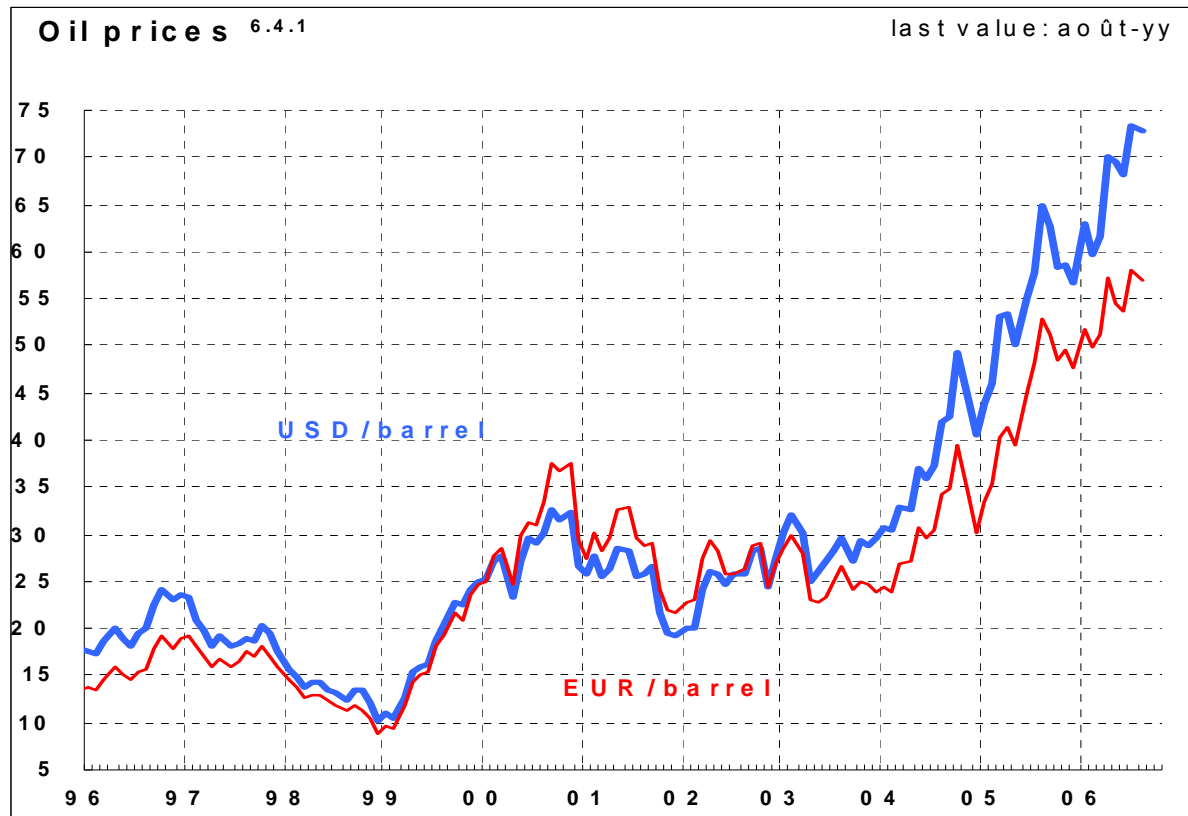
**“Targets” for EU BAP & Bio-fuels Strategy:**

scale of biomass energy use – scenario all biomass = wood  
 (NB not all will biomass foreseen to come from wood but agro residues,  
 waste and liquid bio-fuels should play a significant role).

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

Ex. “The share of renewable energy” COM 366/2004 (For EU-25)

# PRICE OF OIL



## European energy policy is facing key challenges – new & renewed:

- **High and volatile prices** for oil and gas will stay
- **Global energy demand** – and CO<sub>2</sub> emissions - is predicted to increase by 60% over the next 30 years
- Until 2030 the **EU energy dependency** could rise from 50% to 70%, mostly from regions threatened by insecurity
- According to the **Kyoto Protocol**, EU has to reduce its GHG emissions from 1990 until 2008/2012 by 8 %

Thus, January 2007: **“Energy Package”**, including Renewable Energy Road Map

## **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 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)

### **NB roles of forest-based industries as:**

- raw material operator and “co-ordinator” **(i.e. « mobiliser »)**
- 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 industries must be maintained and enhanced for: **products > jobs > wealth > growth**

**BUT:** mostly SMEs, so: low investment in R&D & education; high costs; risk of relocation outside EU & limited scope to improve wood supply on own

**Sectorial issues: forests & forest-based industries (F-BI)**  
**from BAP, Bio-fuels Strategy & other RES measures:**

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

## **Regional variations:**

**There are considerable national and regional variations in the use of wood for energy and the effects of increased competition from demand on wood prices.**

**Consequently, wood supply (and its further scope) varies markedly between and even within the EU Member States (MS). Bearing these and other factors in mind, the following EU regions appear to be distinguishable:**

- Nordic countries (excl DK);**
- Central Europe (Benelux, S. Germany, Austria, CZ, Hungary, Slovakia, Slovenia);**
- UK, Ireland, DK, N.W. Germany;**
- Baltic Region N.E. Germany, Poland, Baltic States;**
- N. & Central France;**
- Southern Europe I: Iberia;**
- Southern Europe II: S. France, Italy, Greece.**



### Opportunities:

- forest owners can have **more markets** for using more wood, incl. residues. (More revenue available for forest management?);
- sawmills benefit from increased **demand for their by-products** like wood chips and sawdust, especially for e.g. pellets;
- pulp industry can use e.g. black liquors not only for CHP, but as “**bio-refineries**”, using current & new technologies, also new opportunities (bio-fuels: (m)ethanol from black liquors or directly from cellulose)

### Risks:

- policy changes require (better and more) wood mobilisation, but existing market, institutional and fiscal frameworks may inhibit it
- Unfocused demand for wood, unmatched by supply, can create bottlenecks and high prices to the detriment of both the energy & forest-based industries
- end-use subsidies, e.g. the use of high feed-in tariffs for the production of “green electricity”, may not pull previously unused biomass from the forests or gather post-consumer residues, but compete with F-BI
- **energy efficiency** may not be optimised and/or
- optimal use/full **added value** may not be derived from wood
- Wood-based products may be priced out of market by less sustainable

## STRATEGIC CONSIDERATIONS FOR MOBILISING MORE WOOD

1. How much (more) wood could/should be used and how can that best be managed? i.e. at national, regional & local (+ company) levels
2. Which points in the forest/wood flow system should be addressed? (A? B? C? Others?)
3. Logistics and harvesting costs are crucial. How can such costs be overcome without unduly distorting markets?
4. Which specific (new) measures are needed?
5. Added value of F-BI value chain is substantially higher than that of energy sector and wood products can be recycled. But what about F-BI profitability, capital intensity and returns on investments?
6. How to get better statistical and other information?
7. How can other EU policies & actions help mobilise wood?

## EU Forest Action Plan (FAP)

Adopted by the Commission 15.06.2006 (document COM(2006)302) – Council Conclusions 24.10.2006

The **FAP builds on** the EU Forestry Strategy of 1998, respecting the Subsidiarity Principle w.r.t. forest-related policies

The **overall objective** of the Action Plan is to enhance sustainable forest management and the multi-functional role of forests. **Its four operational objectives are to:**

- **improve** long-term competitiveness of the forest sector
- **maintain** & enhance biodiversity, carbon sequestration, integrity, health and resilience of forest ecosystems
- **contribute** to life quality by preserving and improving the social & cultural dimensions of forests & forestry
- To **improve coherence**, co-operation and communication in forest related matters

## **The Forest Action Plan will:**

- **provide a framework for forest-related actions at Community and Member States level**
- **serve as an instrument of coordination between EU level actions and forest policies of the Member States**

This is to be achieved through « **Key Actions** », for example:

### **Competitiveness**

- Valuation of non-marketed forest goods and services
- Promote the use of forest biomass, assess feasibility of mobilisation

### **Environment**

- European Forest Monitoring System
- Enhance the protection of European forests

### **Quality of life**

- Maintain and enhance the protective function of forests

### **Co-ordination and communication**

- Improve working methods and coordination
- Strengthen EU profile in international processes
- Encourage the use of wood from sustainably managed forests

## EU Forest Action Plan - Key Action 4

Promote forest biomass use for energy generation through:

- Assessment of the availability and possibilities for increased mobilisation of small/low-value timber and harvesting residues for energy; disseminate good practices
- Assessment of the feasibility of using forest residues and tree biomass for energy in the context of sustainable forest management; examination of environmental limits
- Examination of possibilities for co-operation between forest owners in energy projects
- Support for R&D for heating and cooling, green electricity and fuels from forest resources

## **Support from Common Agricultural Policy**

- CAP reform (2003)
  - ▶ De-coupled income support
  - ▶ Non-food (energy) crops on set-aside areas
  - ▶ Energy crop premium
  - ▶ Reduced scope for steering production

## **Rural Development Policy (2007-2013)**

- ▶ Menu of measures in support of renewable energy, e.g. biomass supply chains, processing capacity, bio-energy installations, including energy use of forest material)

# Rural Development Regulation 2007-2013

## Axis 1: Improving Competitiveness

Measures aiming at restructuring physical potential and promoting innovation:

- Investments adding value to agricultural & forestry production (forestry: activities prior to industrial processing e.g. harvesting)
- Cooperation for development of new products, processes and technologies (e.g. biomass for energy)
- Improving and developing infrastructures related to the development and adaptation of agriculture and forestry (eg. energy supply)

## Axis 2: Land management/environment

- First afforestation of agricultural land  
(including fast-growing species for short-term cultivation)
- Forest fire prevention (i.e. removal of dry materials for preventive silviculture)

## Axis 3: Diversification, quality of life

Diversification of rural economy (diversification to non-agricultural activities; support for micro-enterprises)

- Improvement of quality of life (basic services; small-scale infrastructure)
- Training and capacity building

## **EU Forest-based industries:**

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

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

**(This is in follow-up to the 1999 communication: « The State of the Competitiveness of the EU Forest-based & Related Industries »)**

The new communication will address **sectorial challenges:**

- **Increased Global Competition**
- **Wood Raw Material**
- **Secondary Raw Material**
- **Energy**
- **Demand for wood and paper products**
- **Structural Change**

**NB three of these relate to wood mobilisation**

## **F-BI communication - principles & 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**

## **CONCLUSIONS (as identified by RES WG):**

### **More woody biomass can be mobilised by:**

- Mobilising more of the existing EU forest resources (financially & physically) – a responsibility for both forest owners (private, state, other) and industry
- Developing new forests and other wood-fibre crops (as well as “energy crops”)
- 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

### **Factors influencing the availability of wood and its increased use for energy:**

- forest resources, including:
- their status (e.g. Natura 2000) and management;
- the fragmented forest ownership structure;
- forest stocking rates, growth rates and harvesting rates;
- specific price/supply effects on harvesting volumes;
- resulting wood supplies;

**Factors influencing the availability of wood and its increased use for energy (continued):**

- presence, scale & intensity of wood-processing industries, in turn influenced by:
  - trends in forest products (cost factors; demand effects on prices);
  - trade-flows in roundwood, forest & wood residues and wood-based products;
  - presence and intensity of energy-producing industries and the financial instruments supporting them;
  - population densities and their effect on demand for domestically consumed firewood, such as through buildings stock (e.g. apartments v. single houses), cultural traditions etc.
- Access and transport costs;
- technical capability;
- operational efficiency;
- a lack of market structure and /or information;
- limitations of the capacity/motivation of forest owners to harvest.

## **Economic instruments**

**These, especially subsidies, should be used with caution so as :**

- **to act directly to mobilise more forest resources, not wood-industry residue streams**
- **not to support established technologies;**
- **not to support those technologies requiring little investment:**
- **To stimulate the biomass supply side, including supply-chain development (such as the organisation of forest owners), rather than the energy demand side;**
- **to encourage the diversion of biomass away from waste streams such as land-fill;**
- **to co-ordinate between MS so as to minimise cross-border differentials.**

**Forest and agri-energy resources can better be developed by using a package of co-ordinated measures including:**

- **policy framework (at EU and MS levels)**
- **institutional framework (public authorities, forest owners, forest contractors, wood-processing industries)**
- **a business model**
- **finance (means and money)**

## EC sectorial “next steps”- for BAP, Bio-fuels Strategy & RES Road Map:

1. under political guidance from the High-level Group (Competitiveness, Environment, Energy), EC DGs to develop national BAPs, integrating emerging policy & legislation (Energy Package) on Bio-fuels, Heating & Cooling, Renewable Energy Road Map; Energy Efficiency, etc.  
(Sectorially: 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?);
2. cataloguing & dissemination of **best practices** (e.g. regional & local case studies)
3. Devise supporting RTD thematic programmes & calls; sectorially: relevant Technology Platforms, Strategic Research Agendas, etc.
4. development of “**packages**” of **technical, institutional, financial & fiscal measures**, which are market-based, realistic & affordable; encouraging synergies not conflicts, which build on « **win/win/win** » **strategies** to enhance competitiveness of (orest-based industries and other sectors by optimising resource use, together with society’s energy, job and product needs at EU and (sub-)national levels
5. Re-convene Renewable Energy Sources Working Group (**RES WG**): stakeholders – forest-based industries + Member States (26/09/2006, 06/12/2006, 09/01/2007)
6. information: co-operation e.g. **EU/IEA/UNECE wood-energy sources, flows & use survey 2006 and wood mobilisation workshop – follow-up?**

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](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](mailto: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](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](http://ec.europa.eu/regional_policy/index_en.htm)

**EC, DG AGRI: EAFRD**

- [http://ec.europa.eu/agriculture/rurdev/index\\_en.htm](http://ec.europa.eu/agriculture/rurdev/index_en.htm)

**European Investment Bank (EIB)**

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

**European Sustainable Energy Week 29/01- 02/02**

- <http://www.eusew.eu/>