

# **WOOD RECYCLING MITIGATES CLIMATE CHANGE**

**COST E31 Dublin, 25 April 2005**

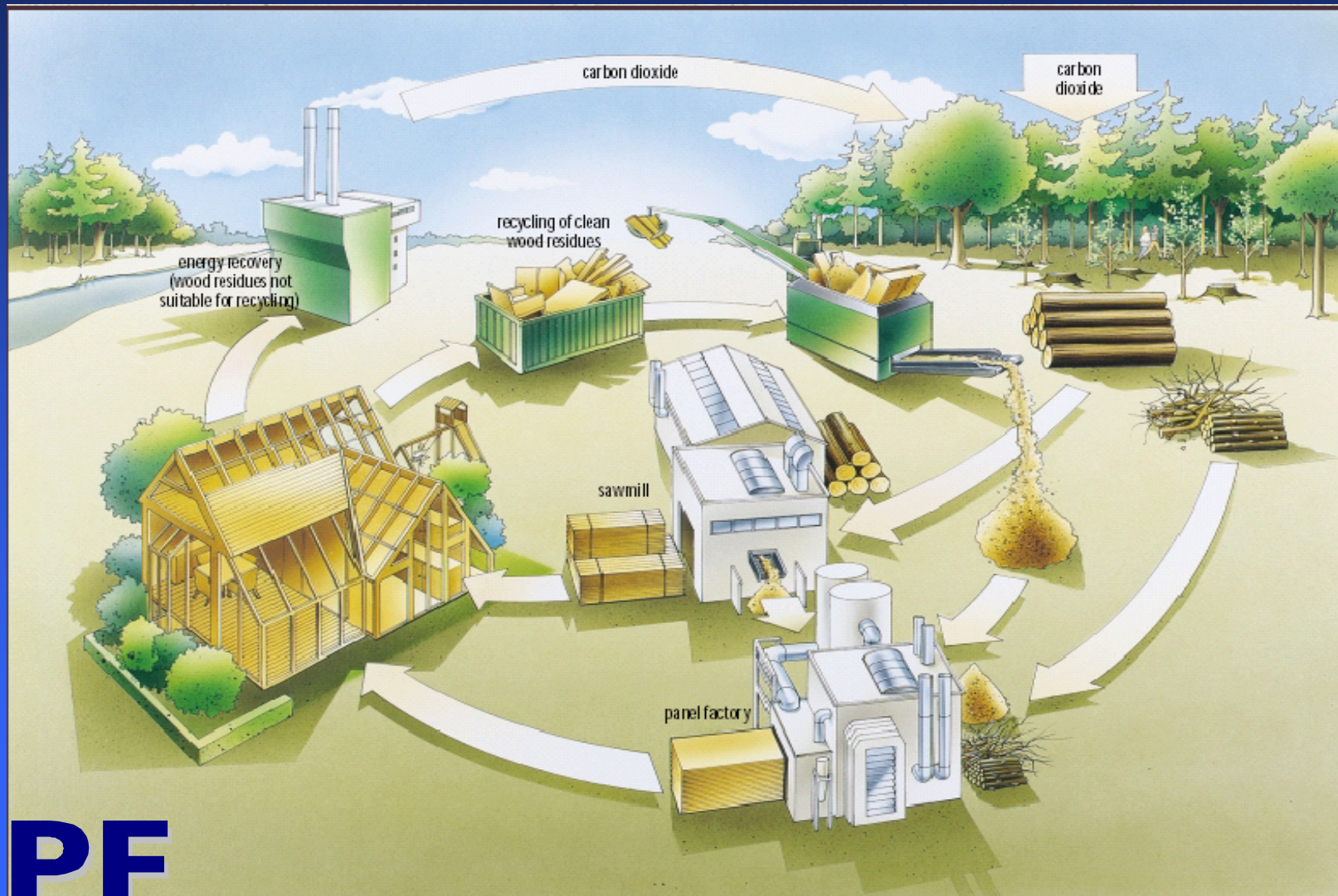
**Chris Van Riet**

**European Panel Federation**

# Wood recycling mitigates climate change

- Introduction: wood & wood-based panels
- Indicators for sustainable management of resources & respect for the carbon cycle
- EU energy policy impact study 2000
- Impact on the woodworking industries
- Conclusions and recommendations

# The wood-based panels industry respects the carbon cycle



# The EU woodworking industry

- The EWWI (EU25):
  - Two million employees
  - 140,000 companies,
  - 165 billion EUR/year turnover
- Pioneer in sustainable use of resources
  - Process heating (up to 70% of needs) and CHP with wood biomass unsuitable for recycling
  - Supporting sustainable forest management
  - Continuously improving recycling rates

# European Panel Federation in 2004

Members in 22 countries

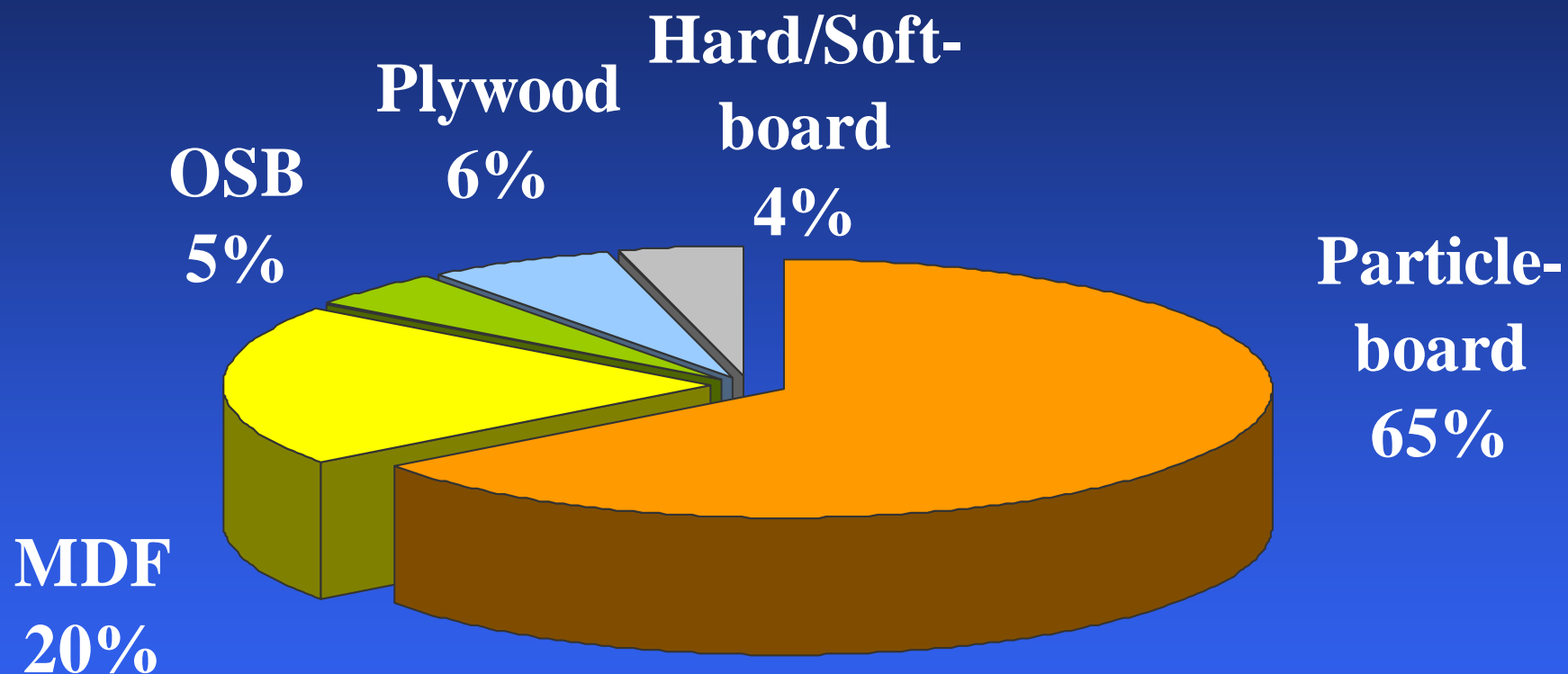
Particleboard 34 million m<sup>3</sup>

MDF 11.9 million m<sup>3</sup>

OSB 2.8 million m<sup>3</sup>

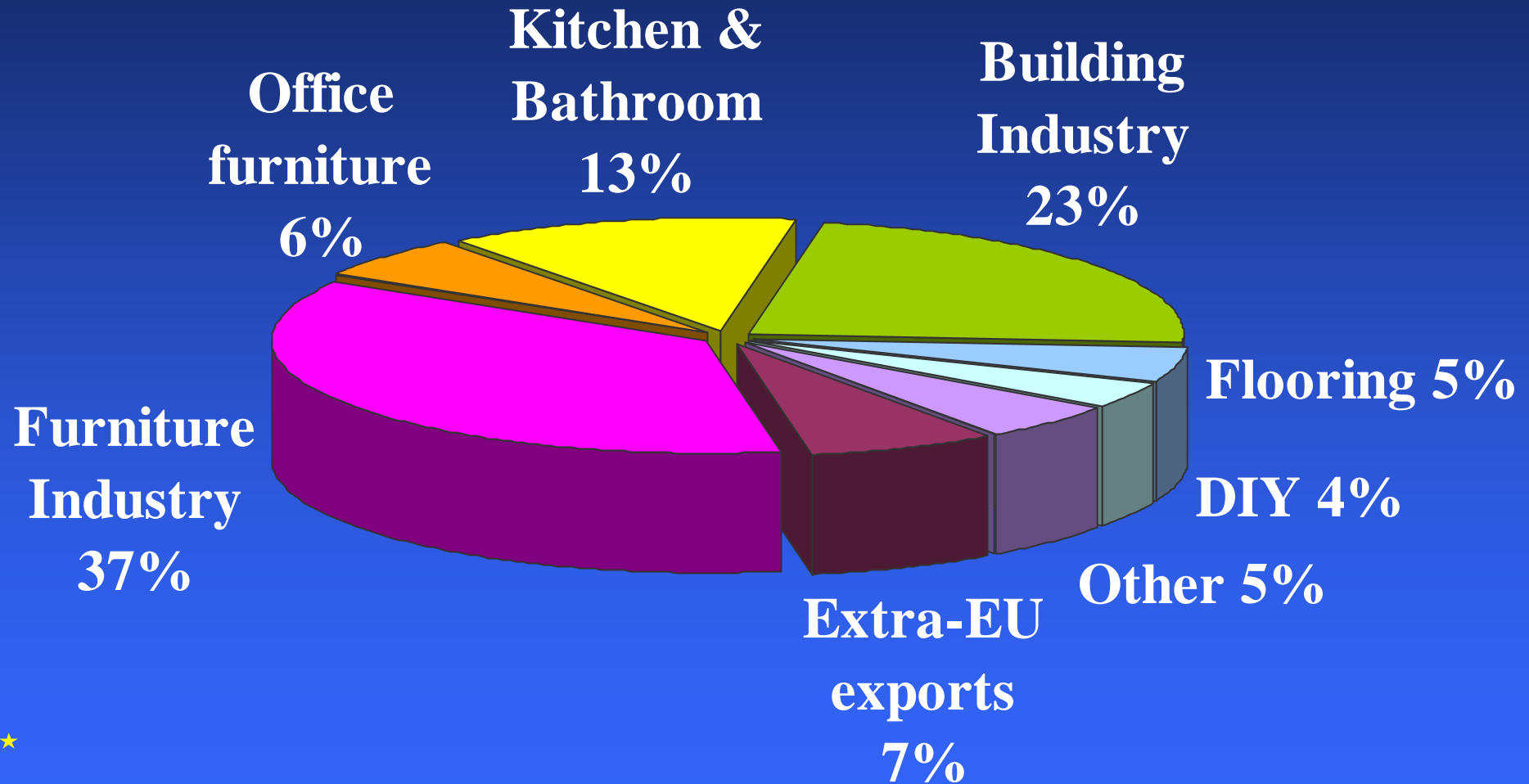


# Wood-based Panels in Europe\* 2004

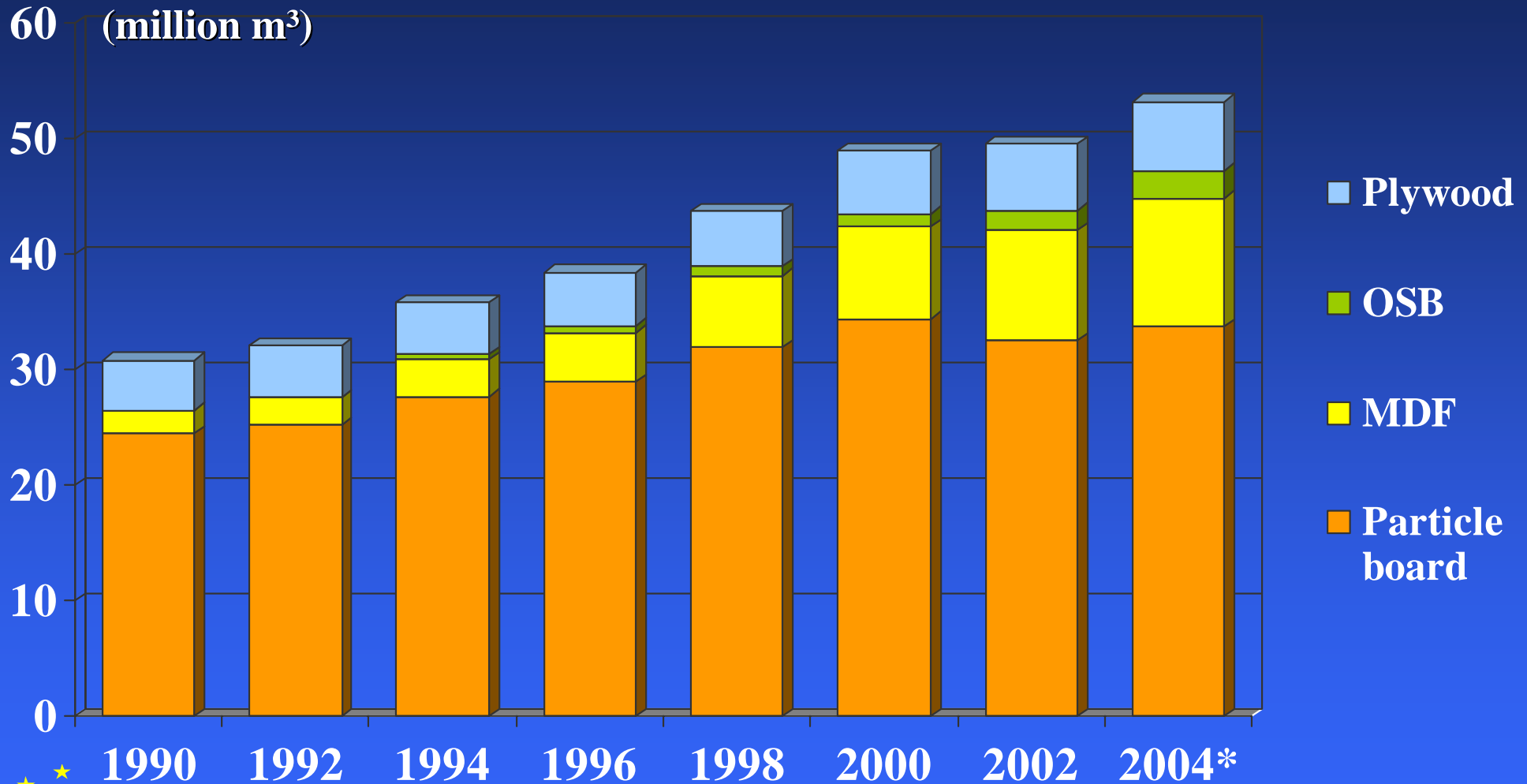


**total 58.7 million m<sup>3</sup> (+5.6%)**

# Particleboard User Industries 2004

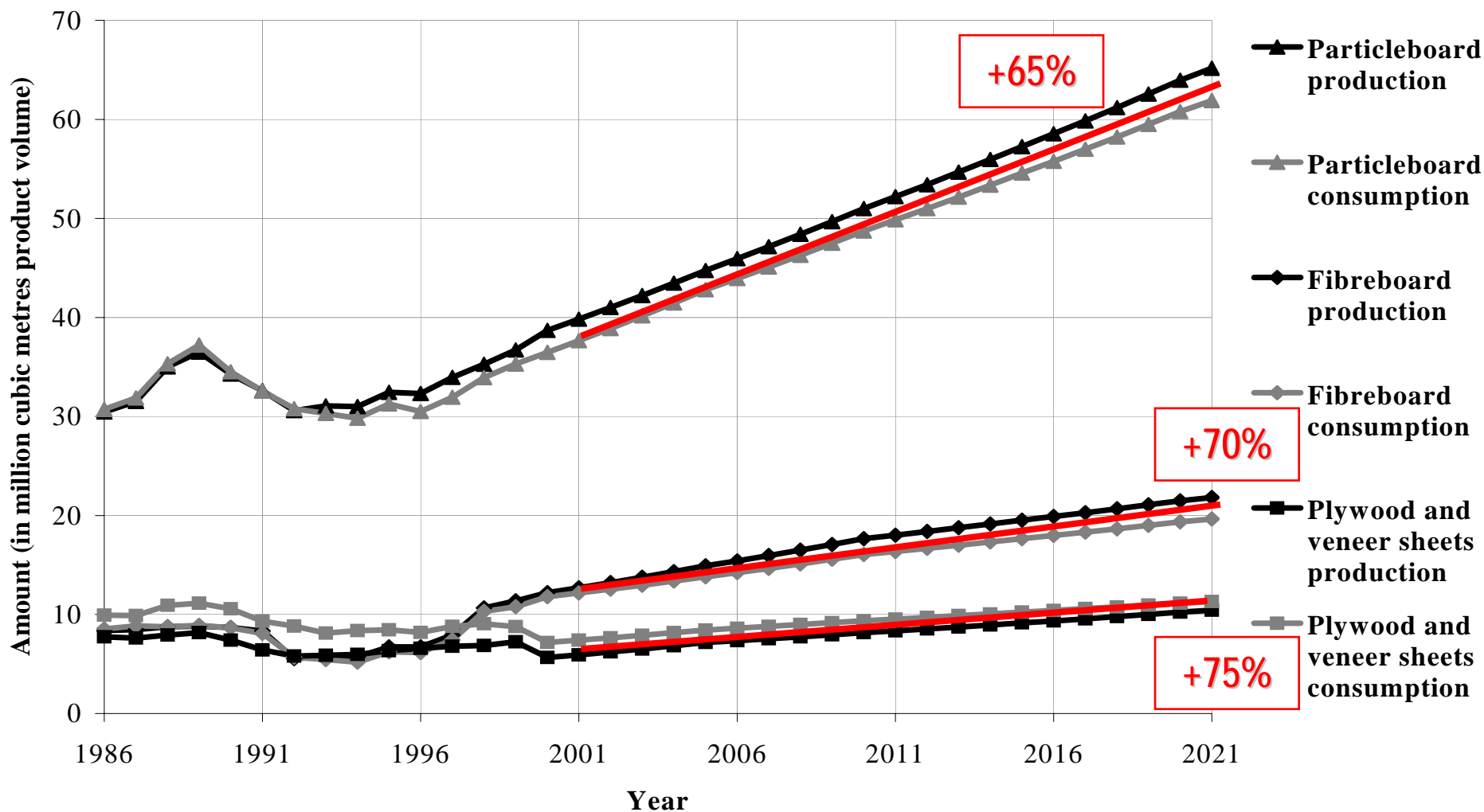


# Consumption Wood-based Panels in Europe



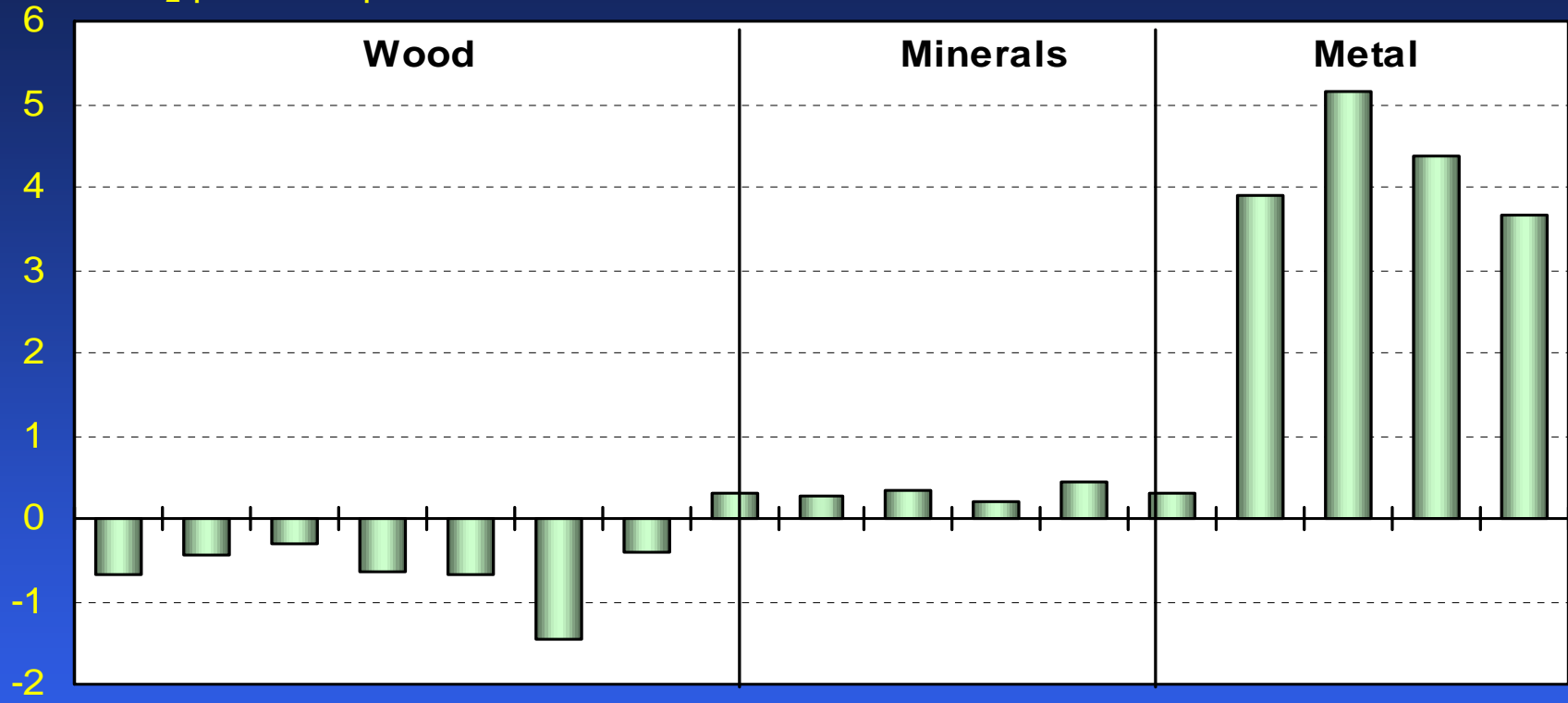


# Outlook: trends and projections for wood based panels in Europe (FAO, 2004)



# Carbon sequestration

t CO<sub>2</sub> per m<sup>3</sup> of product

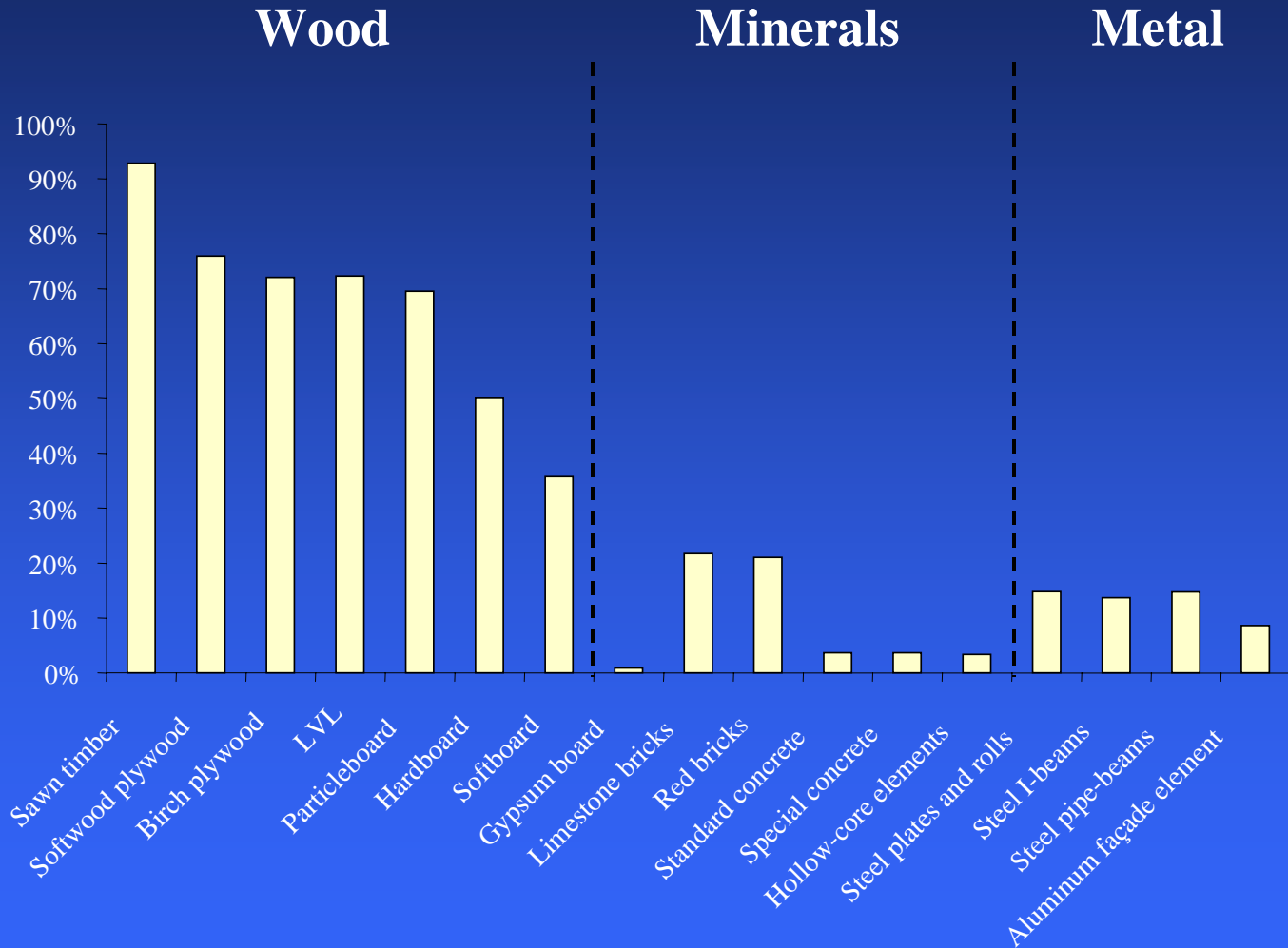


Aluminum facade element

# Embodied energy (Lawson, 1996)

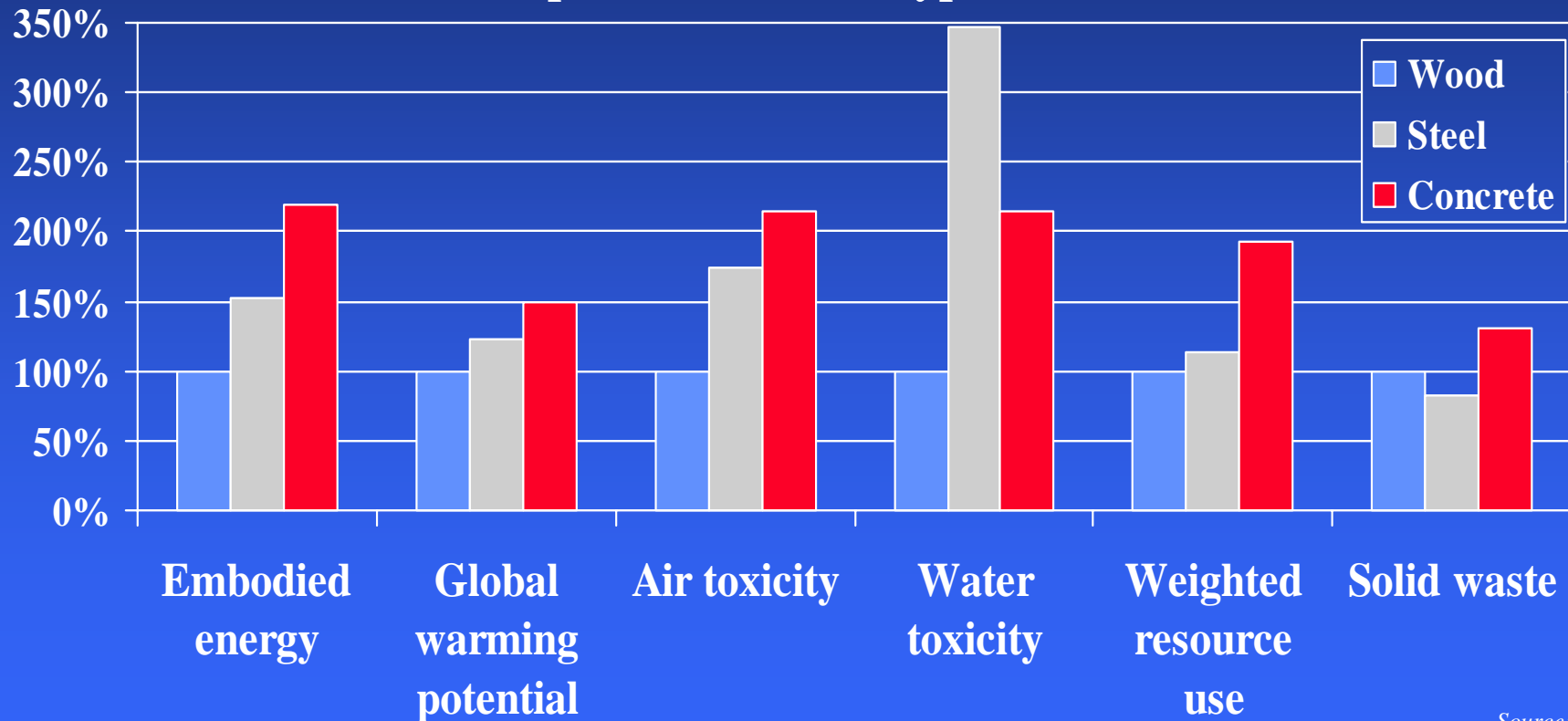
Material	Embodied Energy (MJ/kg)
Kiln dried sawn softwood	3.4
Kiln dried sawn hardwood	2.0
Air dried sawn hardwood	0.5
Particleboard	8.0
Medium Density Fibreboard (MDF)	11.3
Plywood	10.4
Glued-laminated timber	11.0
Laminated veneer timber	11.0
Plastics (general)	90.0
PVC	80.0
Acrylic Paint	61.5
Glass	12.7
Mild steel	34.0
Galvanised mild steel	38.0
Aluminium	170.0
Copper	100.0
Zinc	51.0

# Share of Renewable Energy of Total Energy Use in Selected Building Materials



# Wood frame buildings have a lower environmental impact than buildings made of competing materials

Environmental impact relative to a typical wood frame home



Source: Indufor

# Using wood to tackle climate change

European Commission writes (March 2003):

- 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
- The Commission is examining ways to encourage these trends

# EC WG Climate Change Recommendations

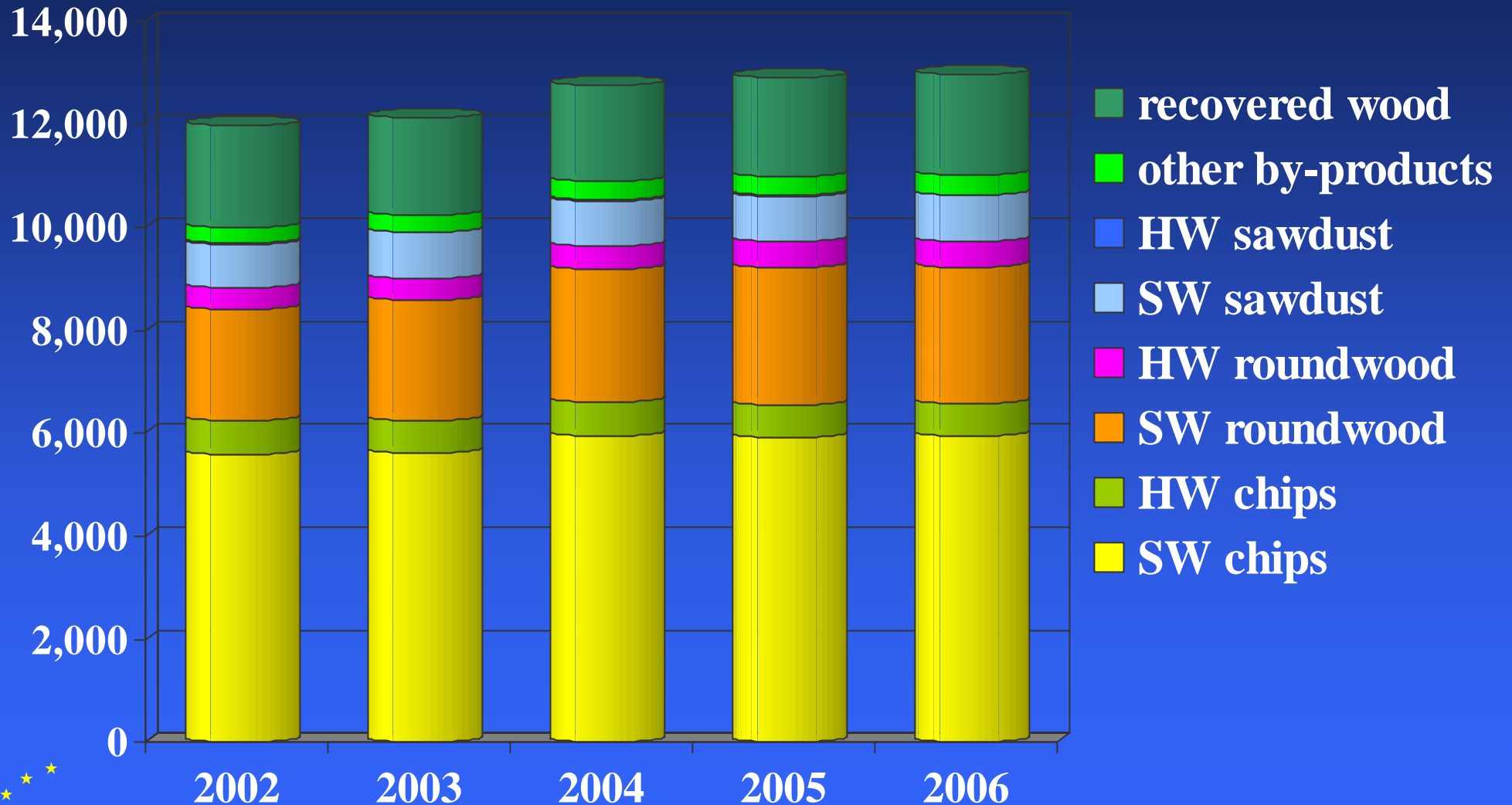
- Replace fossil fuels and energy intensive materials with sustainably produced wood products
- Incentives and subsidies to increase the use of wood products on the model of subsidies granted for the use of wood as fuel
- Incentives to increase wood collecting, sorting and recycling

## EC WG Climate Change Recommendations (2)

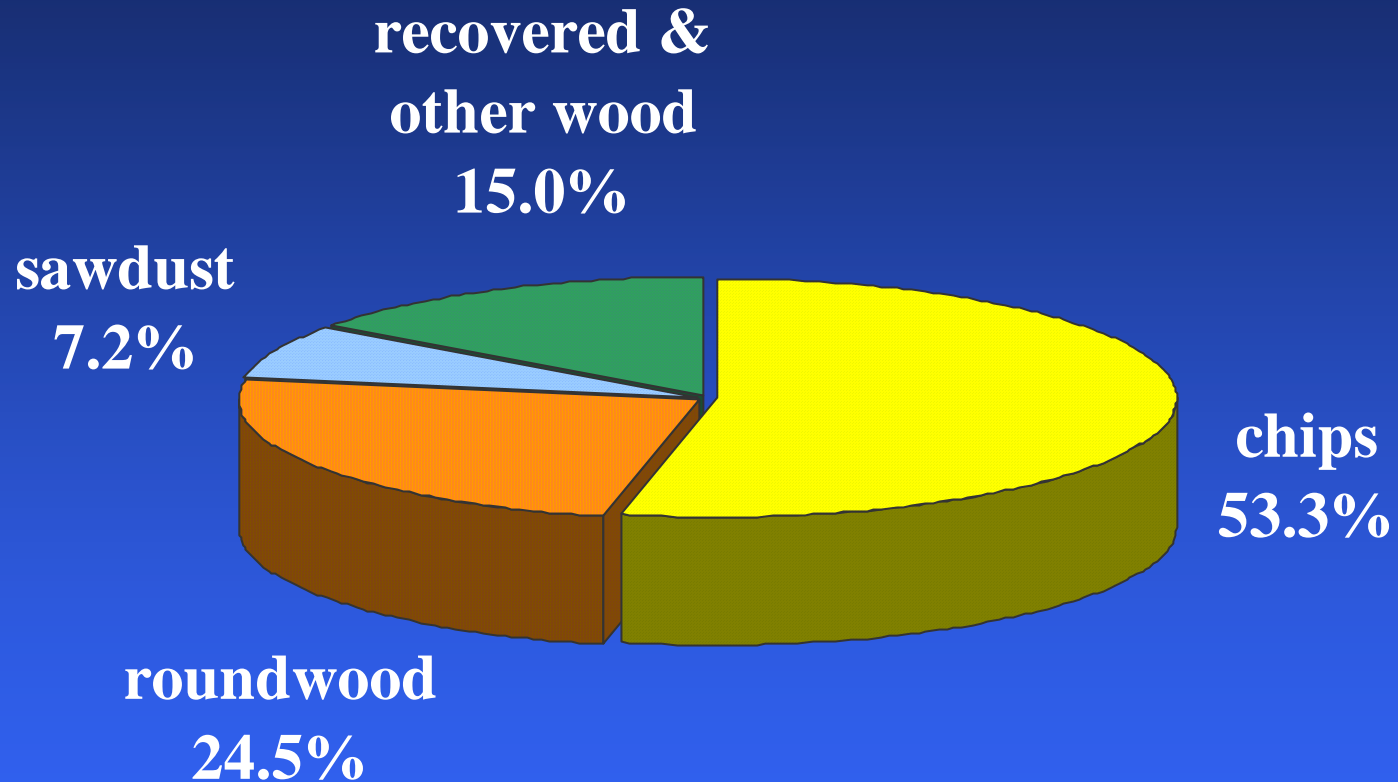
- Fiscal incentives such as reduced VAT for wood products from sustainably managed forests
- Market incentives such as public procurement clauses to encourage the use of wood products such as minimum wood content in public buildings
- Raising awareness on the role of wood products for fighting Climate Change



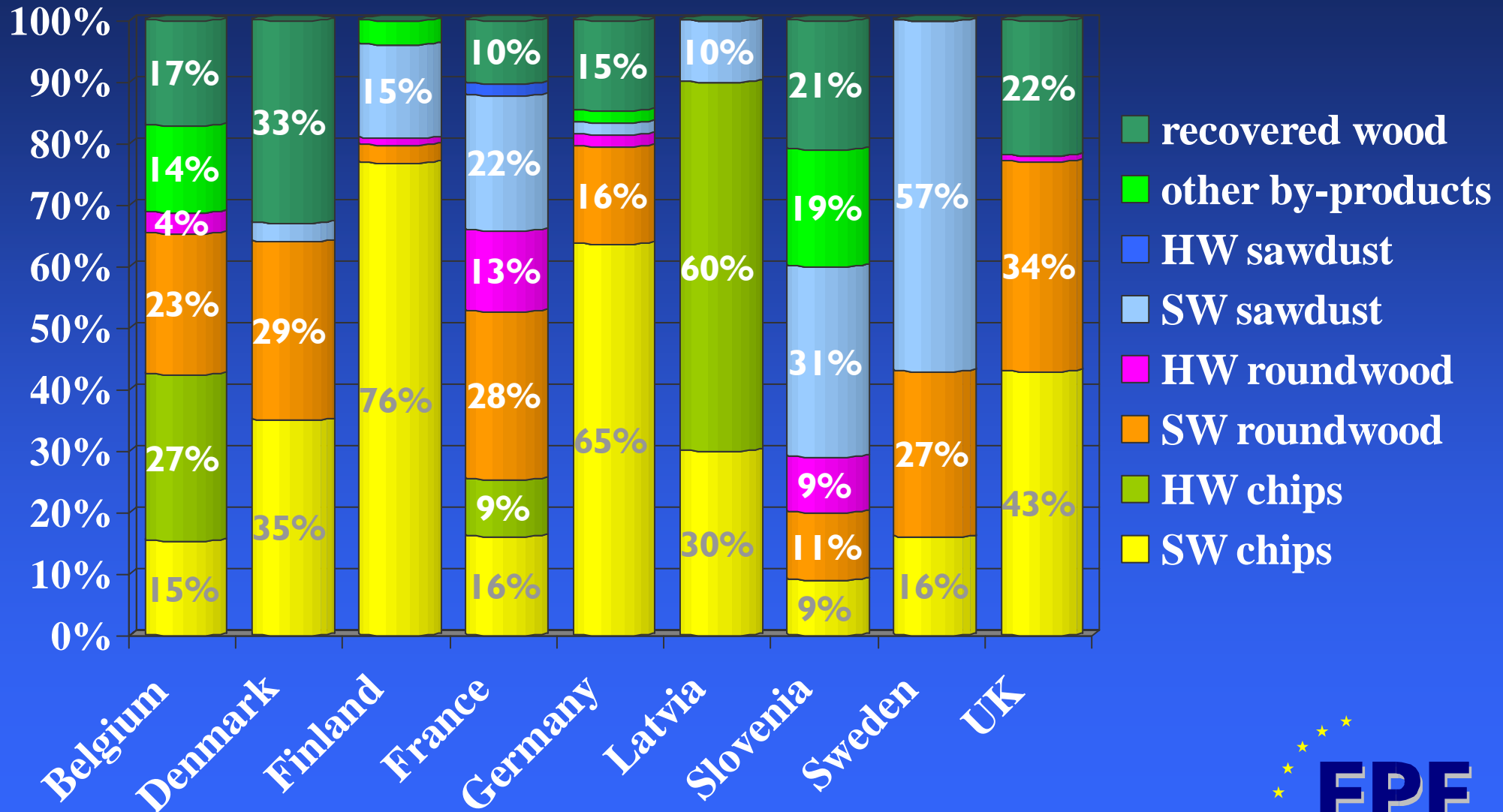
# Particleboard Wood Demand 2002-2006



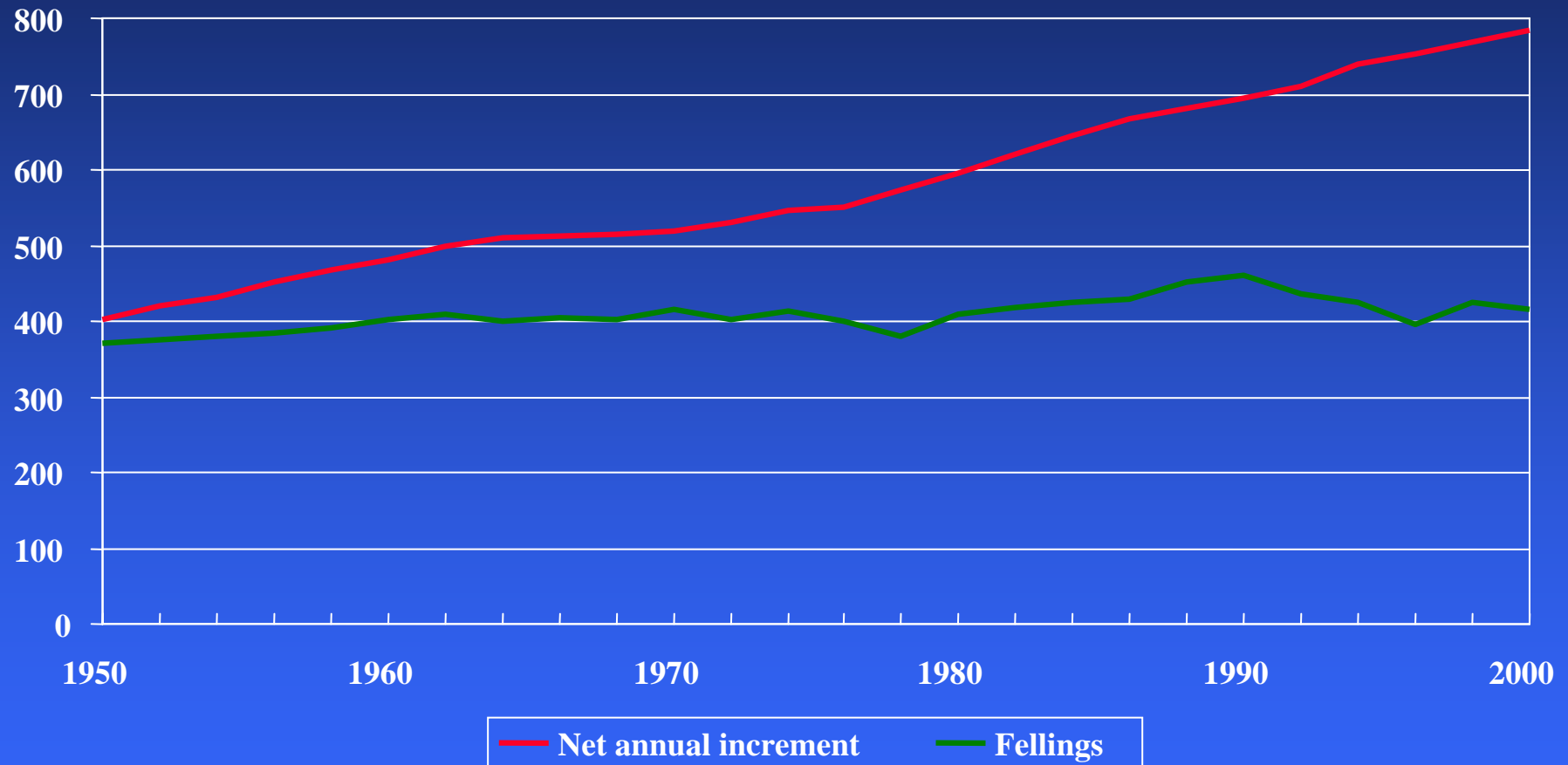
# Particleboard Raw Wood Mix 2004



# Particleboard Raw Wood Mix 2004

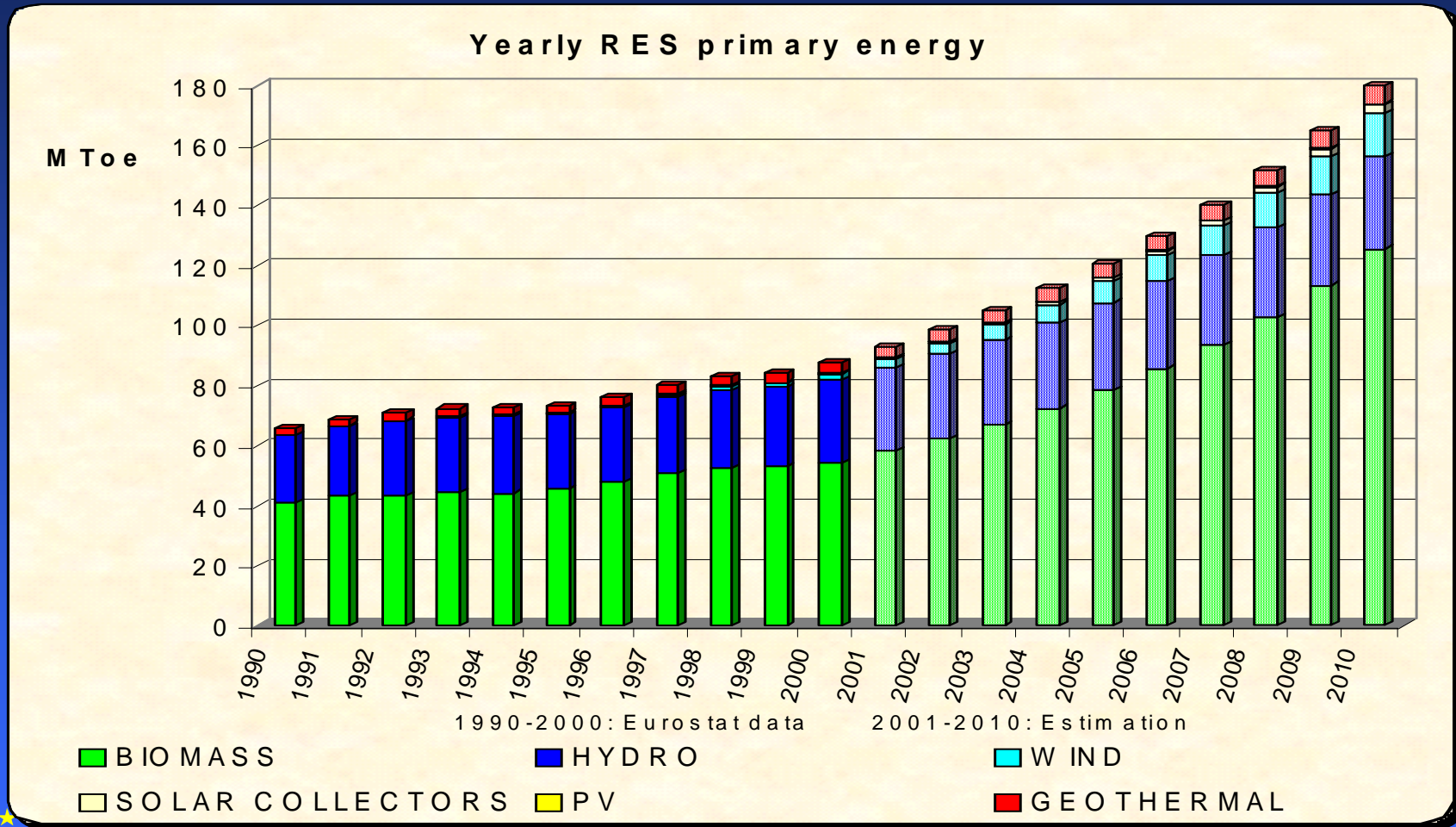


# ROOM for MANEUVER ?



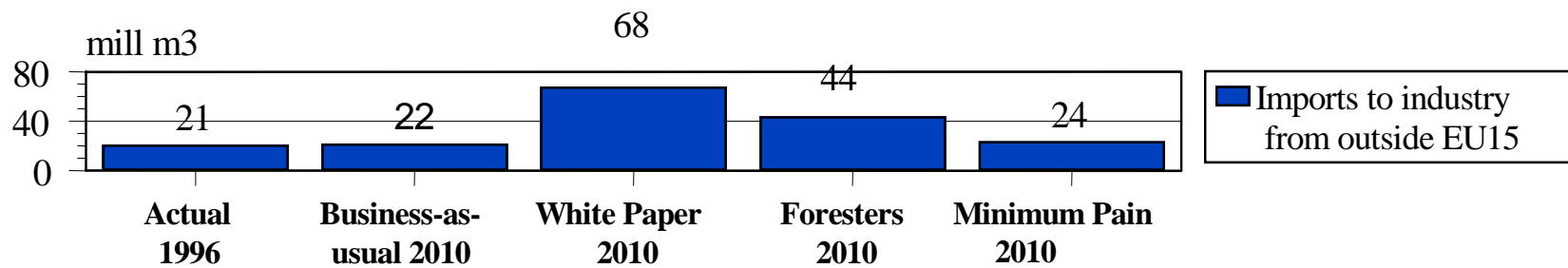
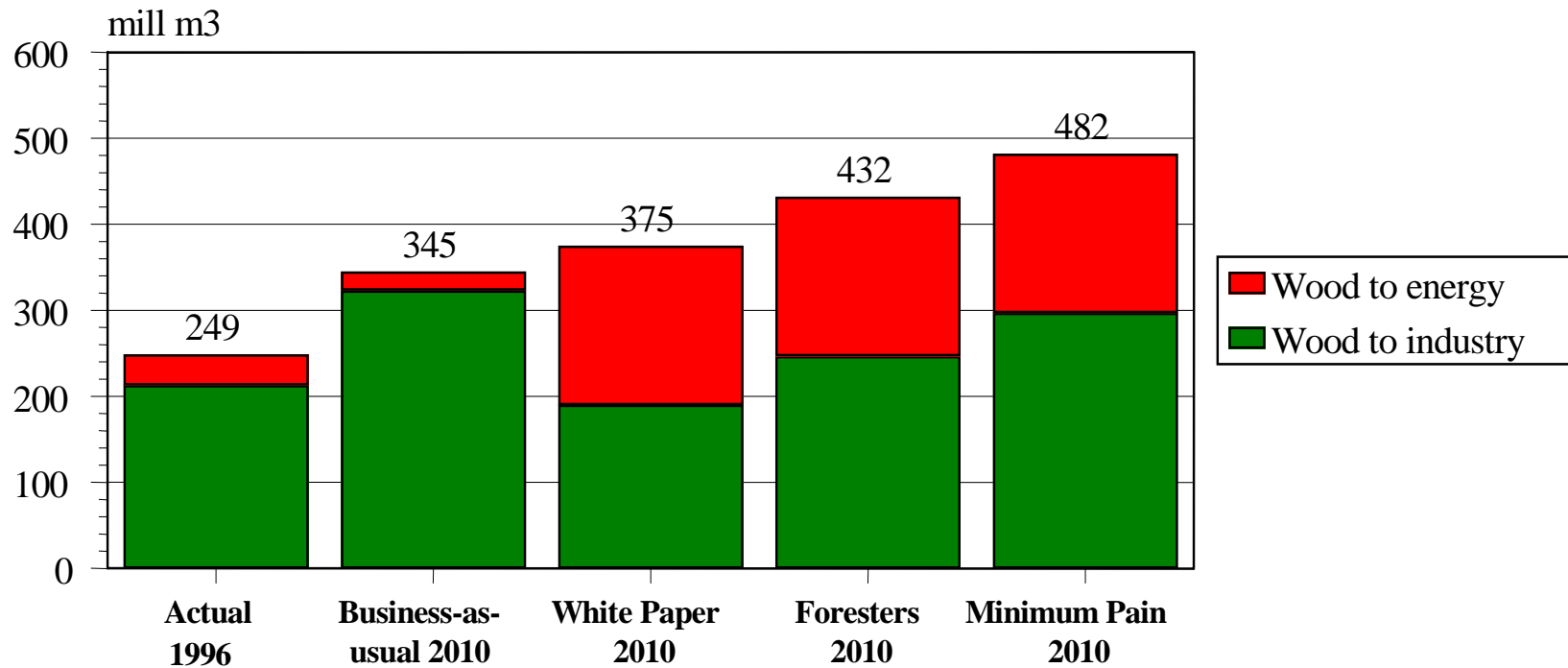
(Mm<sup>3</sup>/y – source : STORA ENSO)

# Expected RES progress in EU-15



# EU energy policy impact study 2000

- 1997: White Paper on renewable energy
- Target WP: double the contribution of renewable energy by 2010;
- Biomass, mainly wood, to triple its contribution
- => Scenario analysis:
  - White Paper
  - Business as Usual
  - Foresters
  - Minimum Pain



# Estimated wood price change 1996-2010

<i>Supply/scenario</i>	<i>Low wood supply (inelastic)</i>	<i>High wood supply (elastic)</i>
<b>Business as usual</b>	+ 18%	-
<b>White Paper</b> = Additional 163 Mio m <sup>3</sup> for energy	+ 75%	+ 39%
<b>Foresters</b> = Higher price, new raw materials	+ 49%	+ 29%
<b>Minimum Pain</b> = More industrial and post-consumer residues	+ 26%	+ 18%



# EU energy policy impact study 2000 conclusions

- The industry “*will hardly, if at all*” be able to absorb the shift which will be induced by the White Paper “*without detrimental effects*”
- “*A reduced target for wood could be compensated by increased targets for other bio-fuels*”

# Sustainable resource management ??

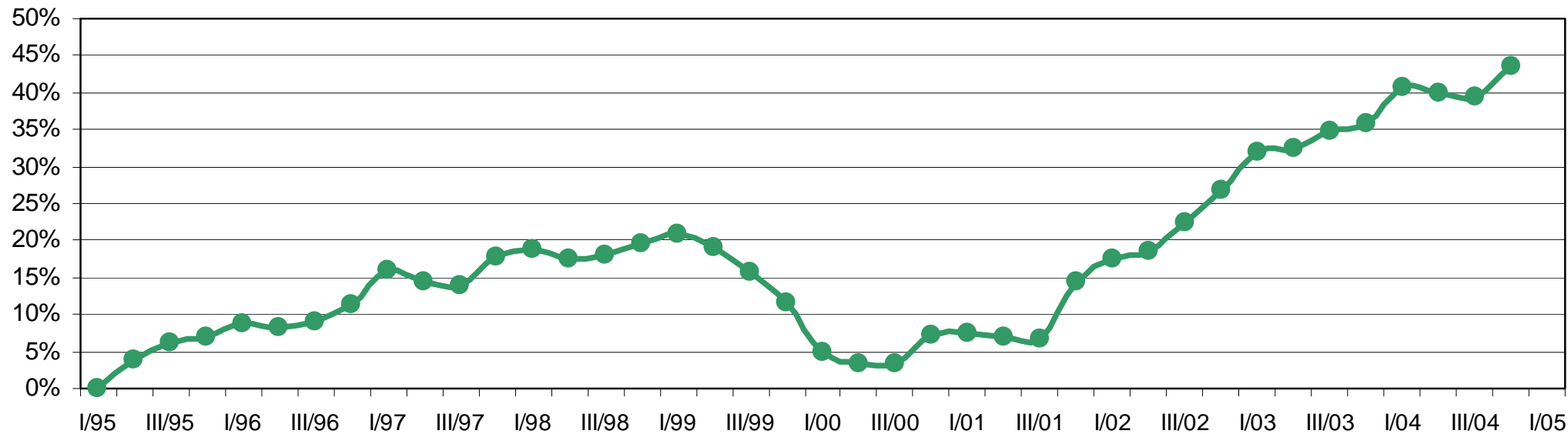
- The value chain of the wood resource is presently not respected:
  - => material suitable for the production of wood-based products, is used directly for energy generation**
- The energy market is not governed by free market principles:
  - => unbalanced financial energy support**

# Impact on woodworking industries, as observed by mid 2004

- Increasing shortage of wood raw material for the wood-based panel industry
- Growing use of other materials and products which are:
  - not renewable
  - sometimes recyclable and
  - always less energy-efficient
- Increasing pressure on the forest resource

# Cost evolution wood raw material

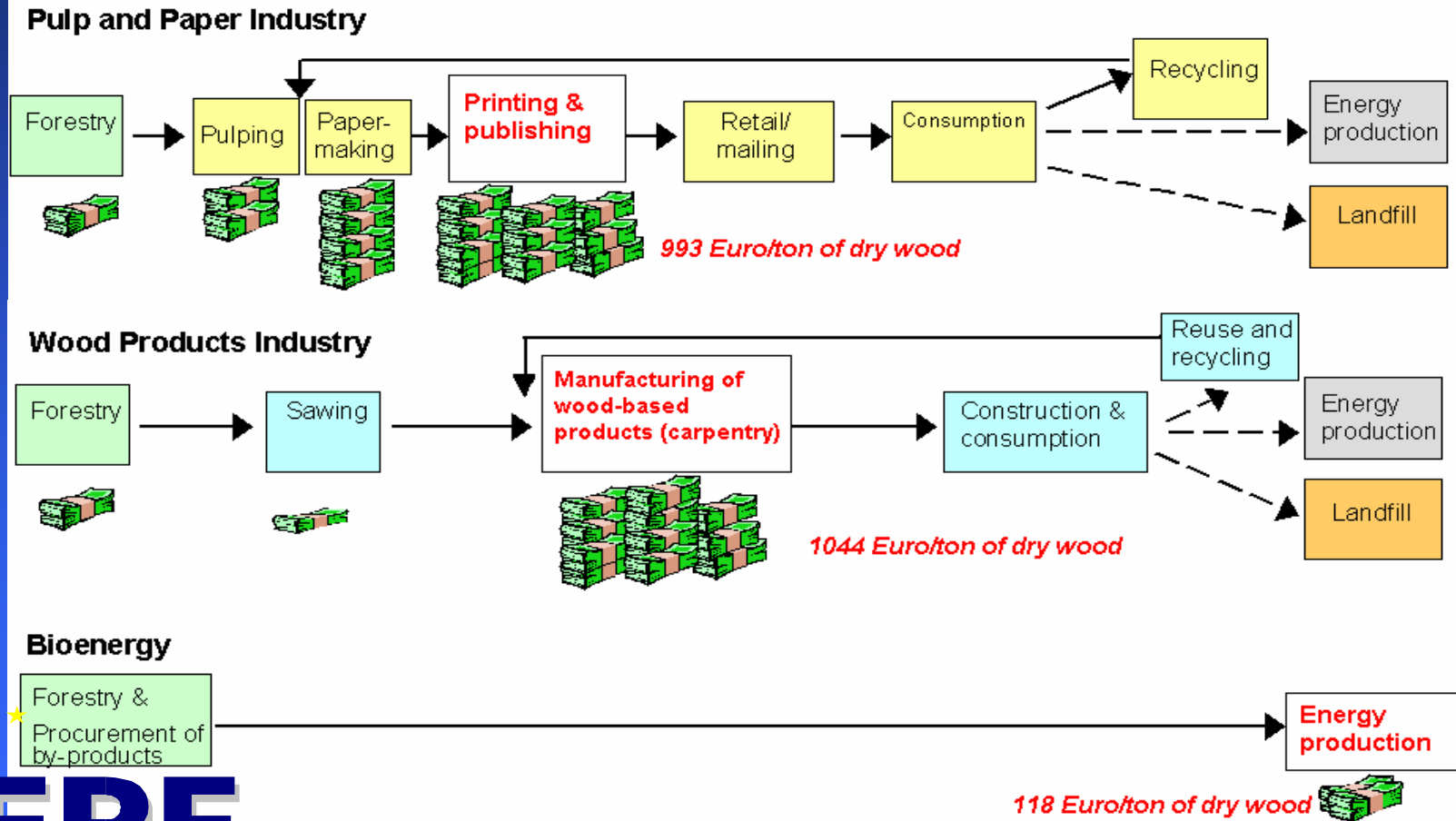
Overall wood cost development in % 1995-2004



# Recognizing the economic value chain

## VALUE ADDED

 = 100 Euro/ton of dry wood

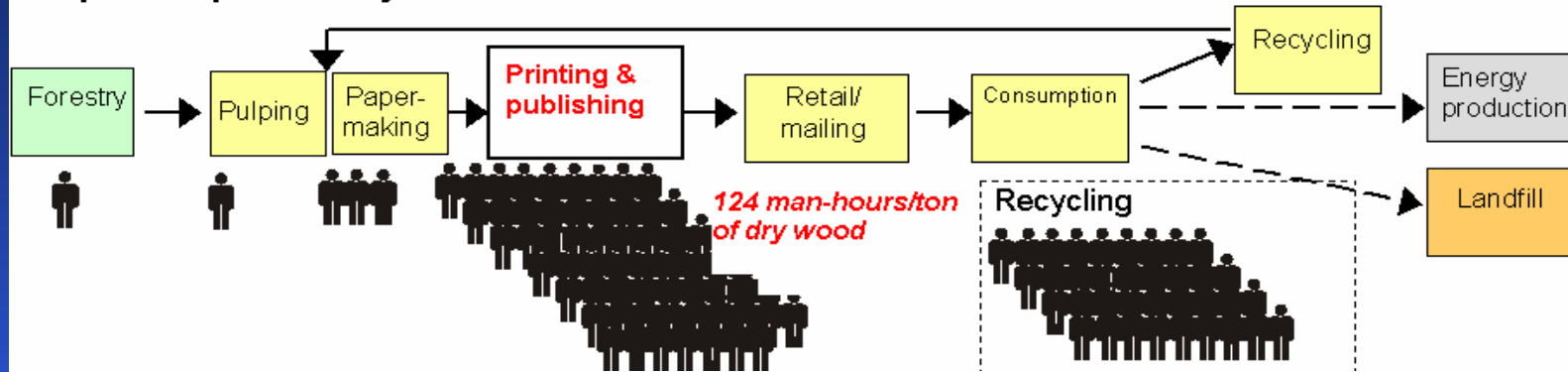


# Recognizing the social value chain

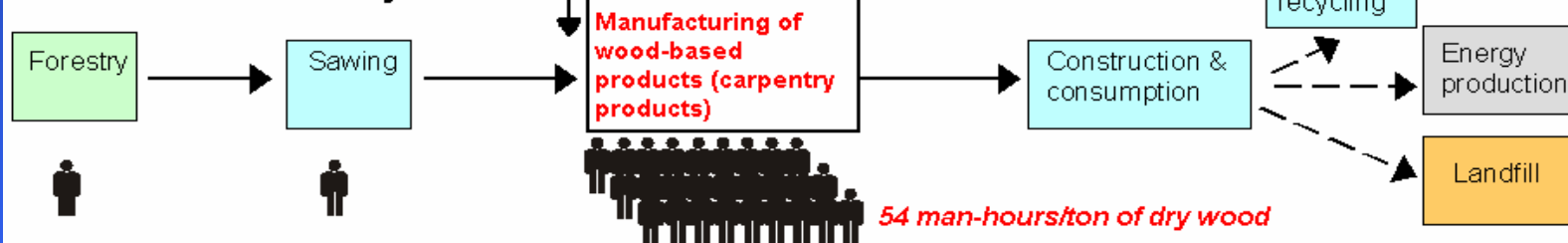
## EMPLOYMENT

 = 2 man-hours/ton of dry wood

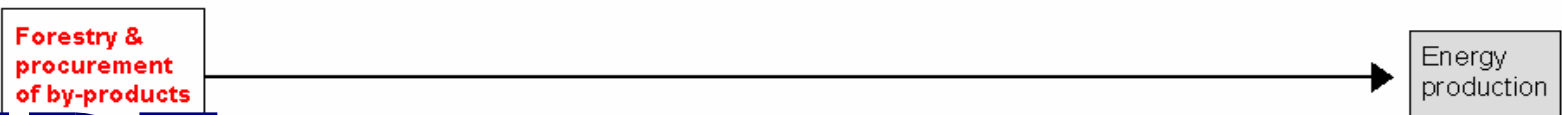
### Pulp and Paper Industry



### Wood Products Industry



### Bioenergy



# Commissions communication on RES

- By the end of 2005 the Commission promises to come up with a coordinated biomass plan that will ensure that “the use of biomass for energy purposes does not lead to the undue distortion of competition”.
- Main actions will still be in the hands of national and local authorities

# Conclusions and recommendations

- **Avoid massive burning** of wood for purely energetic reasons
- **Respect the value chain** of wood-based products as long-lasting pools of carbon, substantially contributing to climate change mitigation
- **Do not “subsidise away”** wood as a raw material for durable applications by favouring the firing of trees, unless locally socio-economic and environmental considerations are compelling



## Conclusions and recommendations (2)

- Recognise the superior **eco-efficiency** of wood-based products and their supreme properties in recycling, with minimal energy use, as compared to other materials;
- Focus future EU and member states research policies on **efficient recovery** of forest residues and development of **biomass crops** specifically grown for energy generation;
- Adapt the “163 million m<sup>3</sup> fuelwood” to a **realistic target level**

## Conclusions and recommendations (3)

- Adopt sincere and **visionary thinking** about long-term strategies for wood resource use
- Use a **realistic and balanced** approach considering **all three pillars** of sustainable development
- And: **only burn wood after it has been fully and soundly used**

**For more Information**

**[www.europanel.org](http://www.europanel.org)**

**or contact**

**[info@europanel.org](mailto:info@europanel.org)**