



# Wood resources availability and demands

## Implications of renewable energy policies

### in the EU/EFTA region



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## 1. Background



Phase	Type of activity	Description / Title	Date	Status
I	Enquiry	The Joint Wood Energy Enquiry (JWEE): Improving data on wood energy:	2005 - 2007	done
II	Workshop	Mobilising wood resources (Workshop in Geneva)	January 2007	done
III	Study	<b>Wood resources availability and demands: Overview based on existing data</b>	Mar - Oct 2007	done
	UNECE/FAO Policy Forum	<b>Bioenergy Policies and Forests</b>	10 Oct	
IV	Review / workshop	Review of the data and information presented in the study (phase III) by national correspondents Workshop in spring (March) 2008	Nov 07- Apr 08	ongoing
V	Study	Empirical study on national level in several European countries to gather new and improve existing data on energy use of wood and sources of wood	2008 - 2010	proposed
VI	Study / Process	Incorporating wood supply and demand into sector outlook study	2008 - 2009	proposed

## 1. Background



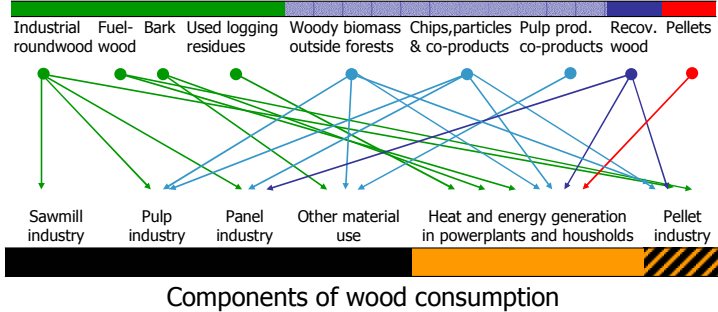
Purpose of the study:

1. How much wood is being used today?
2. What are implications of renewable energy policies?

## 2. Wood uses and supply in 2005



### Components of wood raw material supply

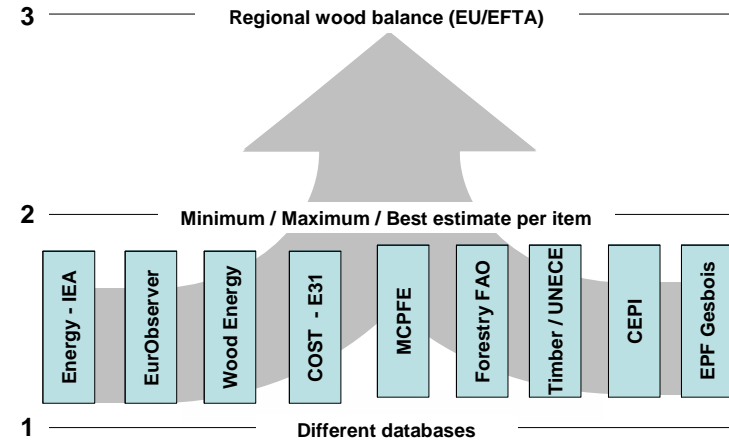


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## 2. Wood use and supply in 2005



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## 2. Wood use and supply in 2005



Sources			Uses		
	[mil. m <sup>3</sup> ]	%	%	[mil.m <sup>3</sup> ]	
Industrial Roundwood - JFSQ	377	49%	26%	214	Sawmill industry
Industrial Roundwood - other	26	3%	11%	89	Panel industry
Fuelwood - JFSQ	56	7%	19%	155	Pulp industry
Fuelwood - Maximum other	29	4%	2%	14	Other physical utilization
Bark	12	2%	1%	6	wood fuel industry
Used logging residues	17	2%	6%	49	Power and heat
Woody biomass outside forest	13	2%	7%	61	Industrial internal
Chips, particles & co-products	122	16%	12%	96	Private households
Pulp production co-products	72	9%	17%	138	Undifferentiated energy use
Recovered wood	42	5%			
Processed wood fuel	6	1%			
<b>Σ supply total:</b>	<b>774</b>	<b>▲ 46</b>	<b>821</b>		<b>Σ use</b>

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## 2. Wood use and supply in 2005



Wood sources unreported to Joint forest sector questionnaire:

- 73 Mio. m<sup>3</sup> from forest
- 13 Mio. m<sup>3</sup> from outside forest

Wood use from forests already higher than refelcted by (trade) statistics.

- Reduced wood potential from forests !

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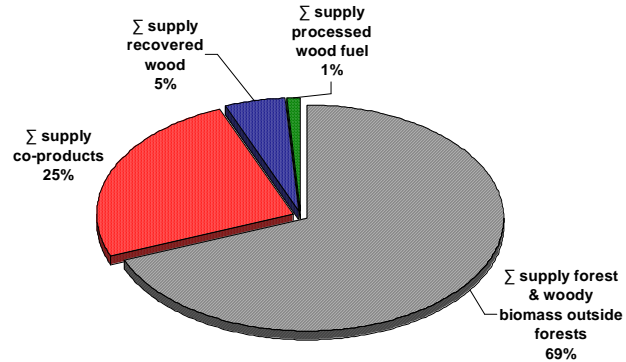
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## 2. Wood use and supply in 2005



Wood supply EU / EFTA (2005)

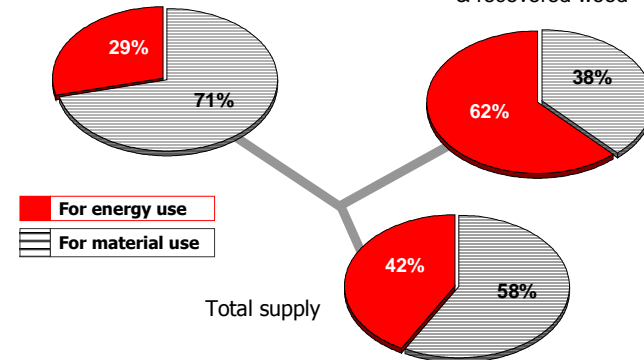


## 2. Wood use and supply in 2005



Wood removals 2005  
from forest and woody biomass  
outside forests

Wood co-products  
& recovered wood



## 3. Future wood use



Based on the wood resource balance 2005

Future sources (2010/2020)	Future use (2010/2020)
Roundwood	Sawmill industry
Fuelwood	Panel Industry
Bark	Pulp Industry
Harvesting Residues	Other Use
Co-products	Fuelwood industry
Recovered Wood	Energy
Processed Woodfuels	

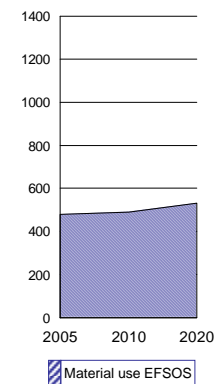
Methods:

- European Forest Sector Outlook Study
- 2005 values
- Policy Analysis (renewable / wood energy)

## 3. Future wood use - EFSOS



Calculated material use EFSOS [mil.m<sup>3</sup>]



### 3. Future wood use - Energy



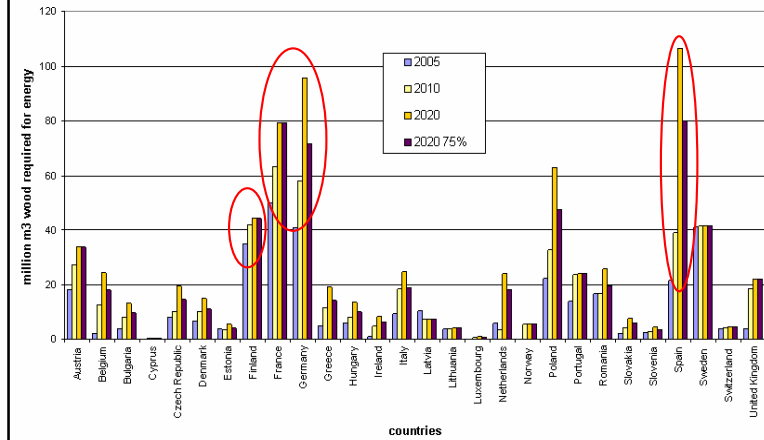
#### Calculation of wood requirements:

- scenario for total primary energy supply
- national policy target for renewable energy
- national target for bioenergy (or 2005 share)
- target for wood energy (or 2005 share)

#### 75% scenario for 2020:

- Decreasing importance of wood energy among RES

### 3. Future wood use - Energy



### 3. Future wood use - Energy

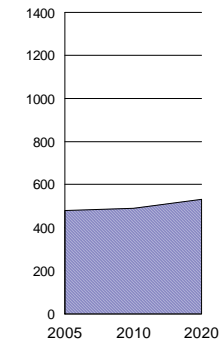


year	2005 [mil.m <sup>3</sup> ]	2010 [mil.m <sup>3</sup> ]	2020 [mil.m <sup>3</sup> ]	2020 75% scenario [mil.m <sup>3</sup> ]
EU 25	313	591	768	768
Sum of national targets in EU 25 countries	313	446	689	581
<b>Sum of national targets in EU/EFTA countries</b>	<b>343</b>	<b>481</b>	<b>738</b>	<b>620</b>

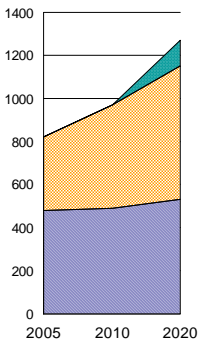
### 3. Future wood use



Calculated material use [EFSOS, mil.m<sup>3</sup>]



Combined wood use [mil.m<sup>3</sup>]



Material use EFSOS Energy goal 75% Energy goal 100%

#### 4. Future wood supply

Different data sources for wood supply:

- EFSOS
- Net Annual Increment (NAI)

BUT, all sources have to be considered:

- Inside the forest, woody biomass outside the forest
- Recovered wood, industry co-products
- Imports

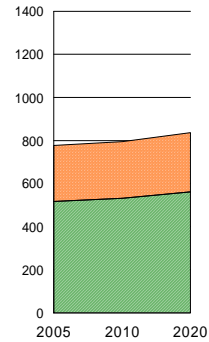
Restrictions:

- Ecological
- Economic
- Social

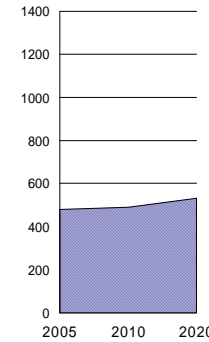
How much wood can be mobilized???

#### 4. Future wood supply - EFSOS

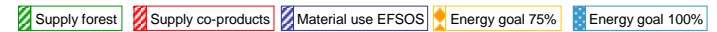
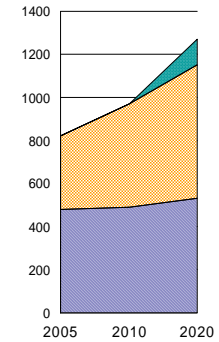
Calculated future wood supply [mil.m<sup>3</sup>]



Calculated material use [EFSOS, mil.m<sup>3</sup>]



Combined wood use [mil.m<sup>3</sup>]



#### 4. Future wood supply - EFSOS

year	wood sources [million m <sup>3</sup> ]	wood use * [million m <sup>3</sup> ]	Difference
2005	775	821	47
2010	791	976	185
2020	825	1 274	448
2020 75%	825	1 156	321

\* required to fulfil EFSOS projections and policy objectives

- Data not directly comparable (different methods)
- No prices included
- Conservative wood supply scenario
- > BUT indicates broad pattern of future demand

#### 4. What options do we have?

- Increased wood supply:
  - Existing forests,
  - Expansion or intensification of forest management
  - Trees outside the forest
  - Other sources (including recovered wood and industry co-products)
  - Imports
- RES policy targets may not be met (with wood)
- Wood-based industries development at question
- Efficiency use of resources

## 5. Conclusions



1. Wood resource balance shows broad patterns of supply and demand.
2. Overall energy and resource efficiency crucial
3. Difference between wood demand and supply has to be discussed, but not general direction
4. Empiric research needed on:
  - Unknown and unrecorded sources and
  - conversion factors
5. Analyse potential wood supply from all sources
6. Discuss concept and level of sustainability

## 6. Next steps



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## Contact



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