Wood Energy Workshop:

Woody biomass – the fuel of choice for Serbia

UNECE/FAO Timber Section:

European Wood Resource Balances & the role of accurate wood energy data

- Belgrade 02/03 December 2008 -

Outline

- European Wood Resource Balances
- Role of wood energy data
- The Joint Wood Energy Enquiry
- Conclusions

Purposes

Wood Resource Balance:

- Understand wood fibers flow (energy & material purposes)
- Consistency check within timber and forests statistics (e.g. unrecorded removals?)
- Analyze current and future wood potentials

Joint Wood Energy Enquiry:

- Assess supply & use pattern (woody biomass for energy)
- Improve cross-sectoral cooperation and communication
- Consistency check between energy and forest statistics
- Monitor wood energy development (2005/2007)

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Results – Balance 2005 (EU/EFTA)

Sources

	P+I-X [M.m³]
Industrial Roundwood - JFSQ	381
Industrial Roundwood - other	16
Fuelwood - JFSQ	79
Fuelwood - Maximum other	6
Bark	25
Used logging residues	23
Woody biomass outside forest	20
Chips, particles & co-products	118
Pulp production co-products	70
Recovered wood	29
Processed wood fuel	7
▲ Difference	47
Σ supply total:	**822**

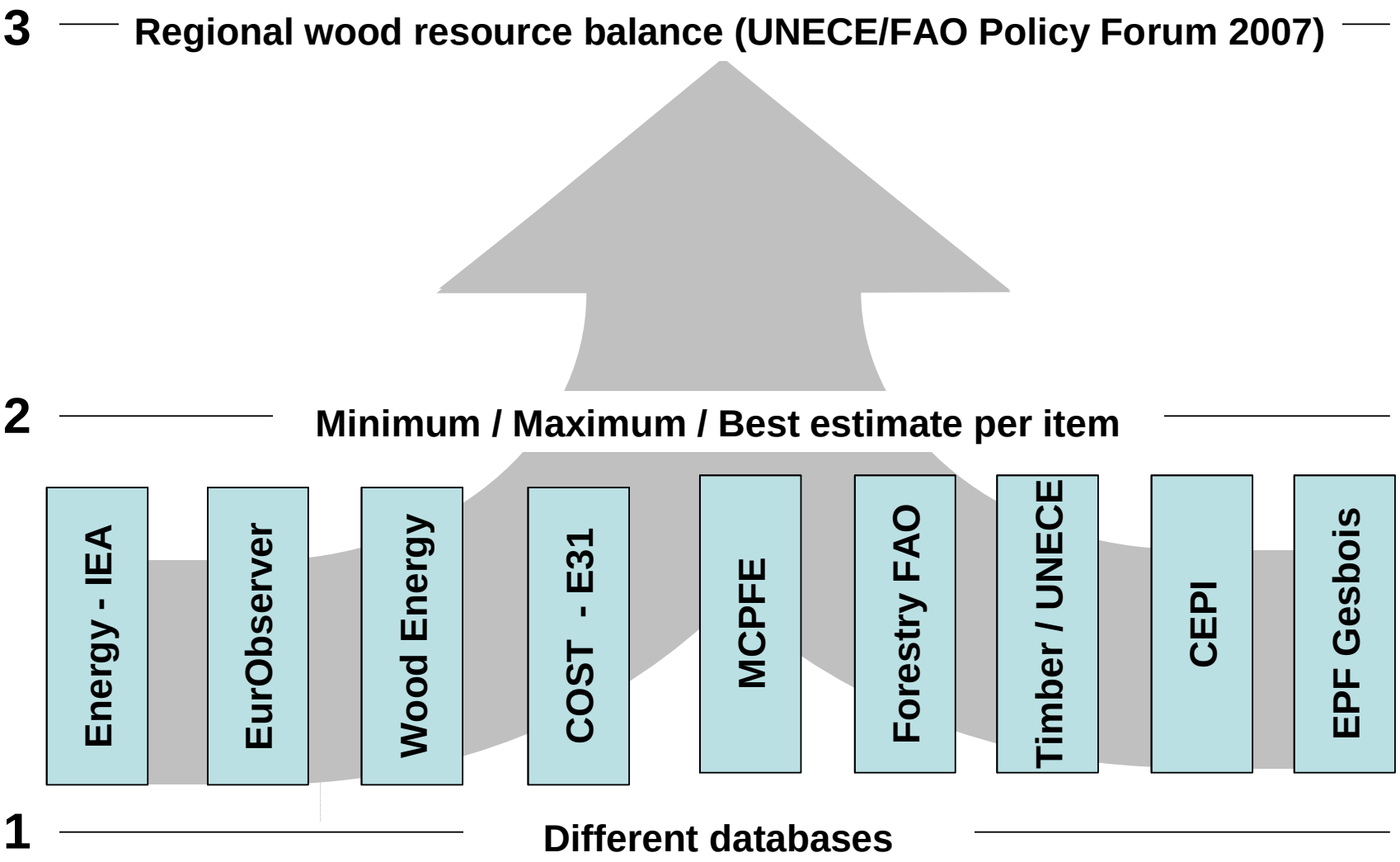
Uses

P+I-X [M.m³]	
217	Sawmill industry
88	Panel industry
155	Pulp industry
7	Pellets, briquetts, etc.
14	Other physical utilization
49	Power and heat generation
65	Industrial internal energy use
92	Energy in private households
135	Energy use unspecified
822	**Σ use**

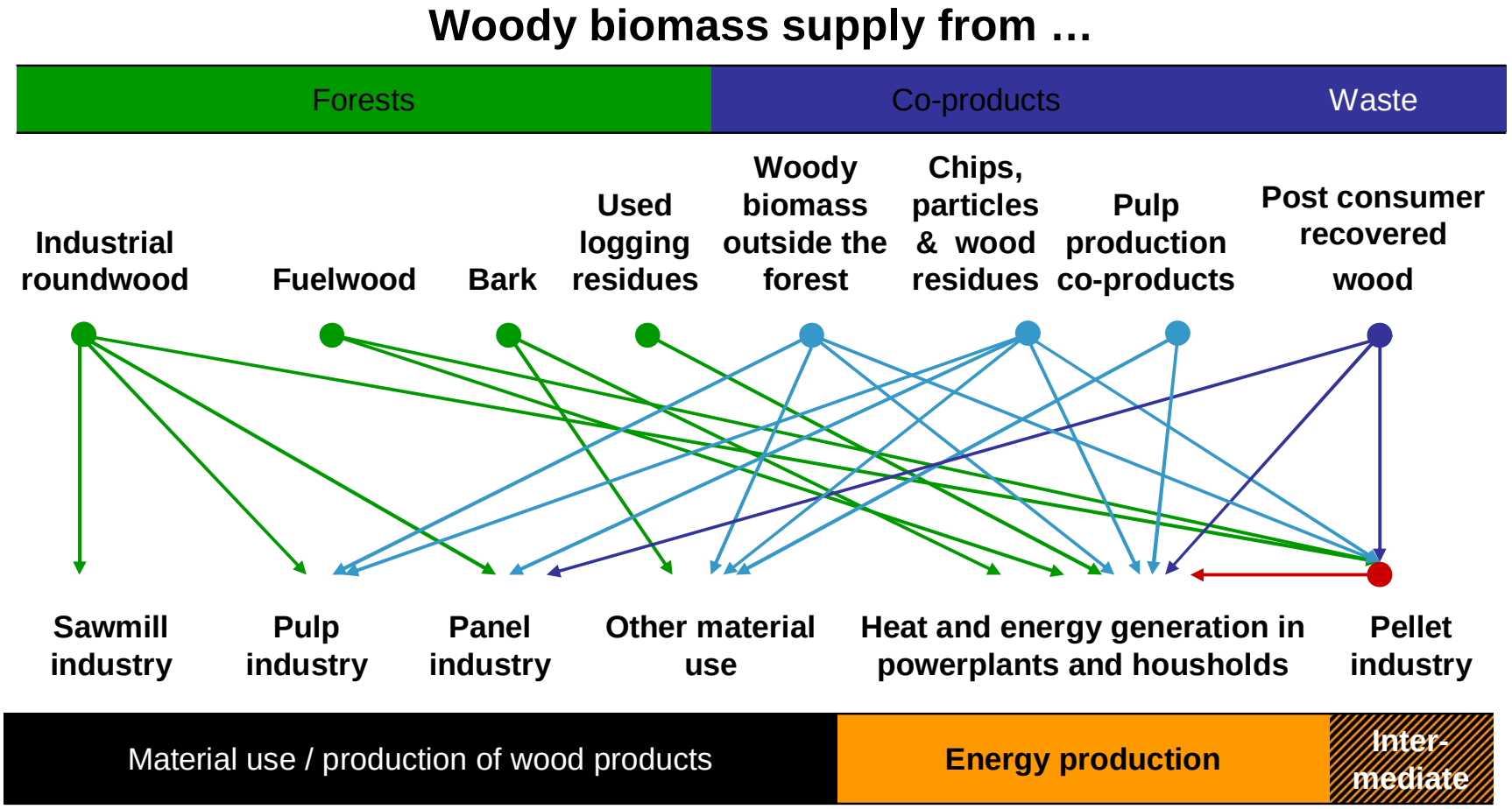
European Wood Resource Balances

- **Publicly available databases**
  - Forestry & Timber
  - Energy
  - Waste
- **Consider any wood fibre flows**
  - Cascaded use
  - International trade
- **Create a balance**
  - Conversion factors
  - Efficiencies

Data sources



Wood fibre flows: sources and uses

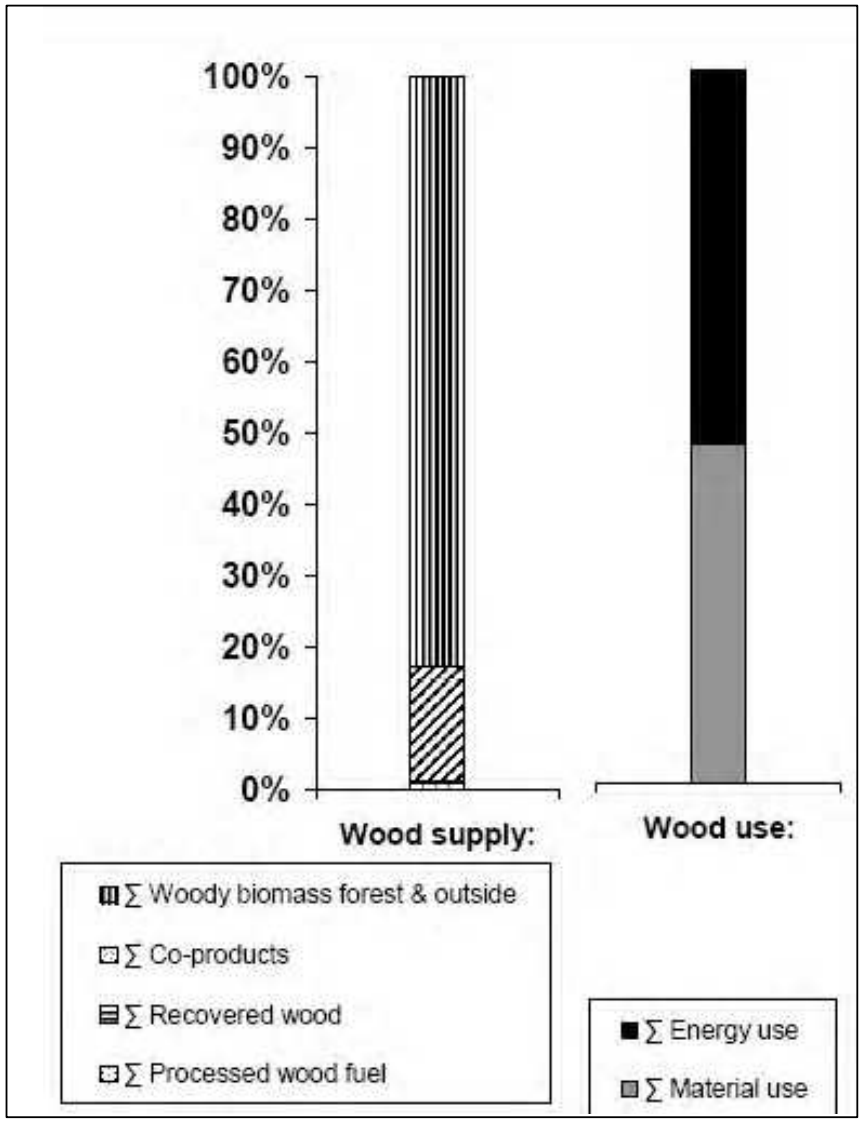


Results – Balance 2005 (Serbia)

Wood supply and use - Serbia (2005)

Wood supply:			Wood use:		
∑ Woody biomass forest & outside	3,200	83%	48%	1,441	∑ Material use
∑ Co-products	618	16%	52%	1,589	∑ Energy use
∑ Recovered wood	10	0%			
∑ Processed wood fuel	29	1%			

Results – Balance 2005 (Serbia)



Findings

- Wood Resource Balance covers any wood fibers flow.
- Unrecorded removals (**not** illegal logging!!!)
- Accounts for national production and net trade
- Considers cascaded use of wood fibers in national economy

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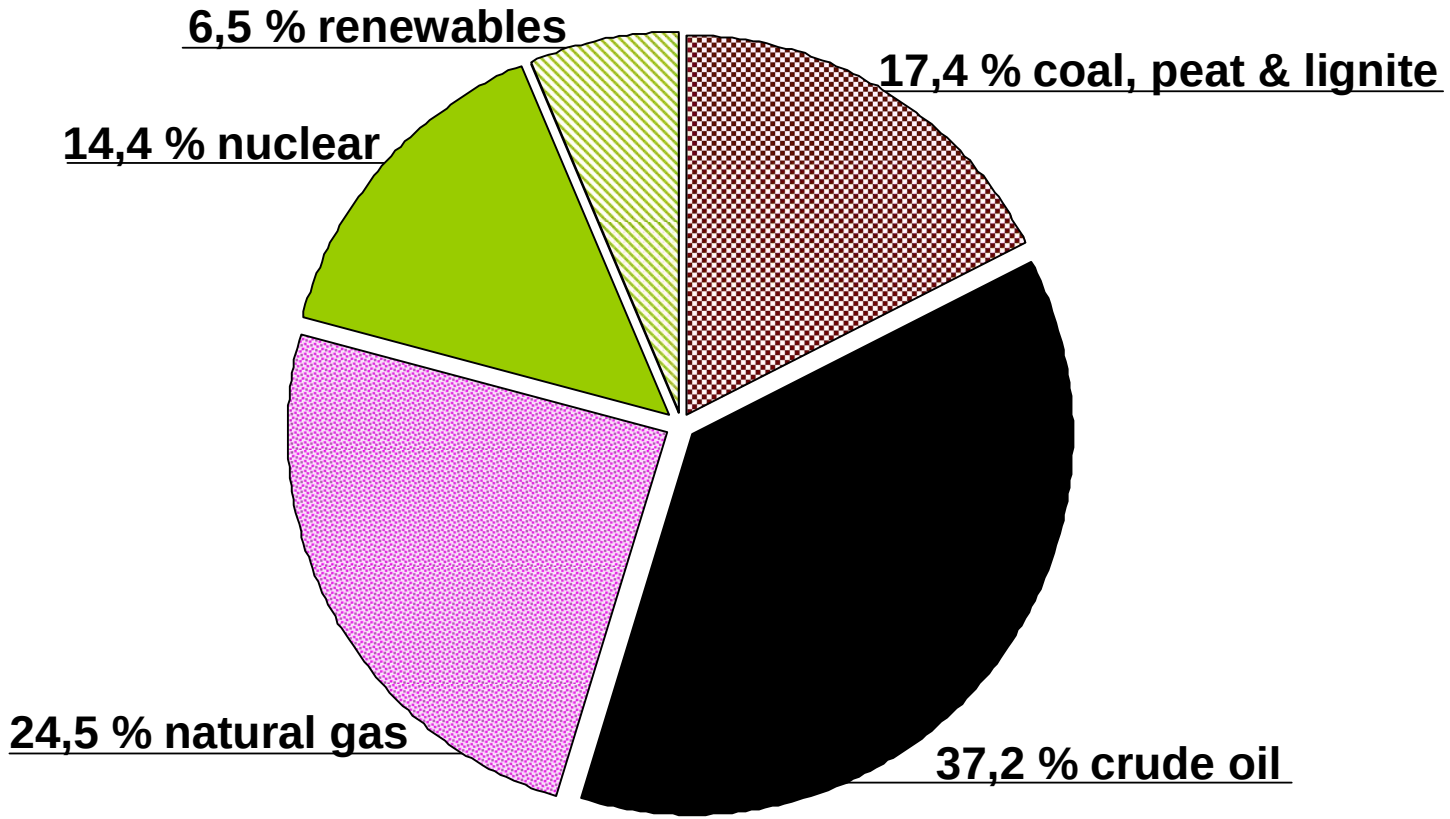
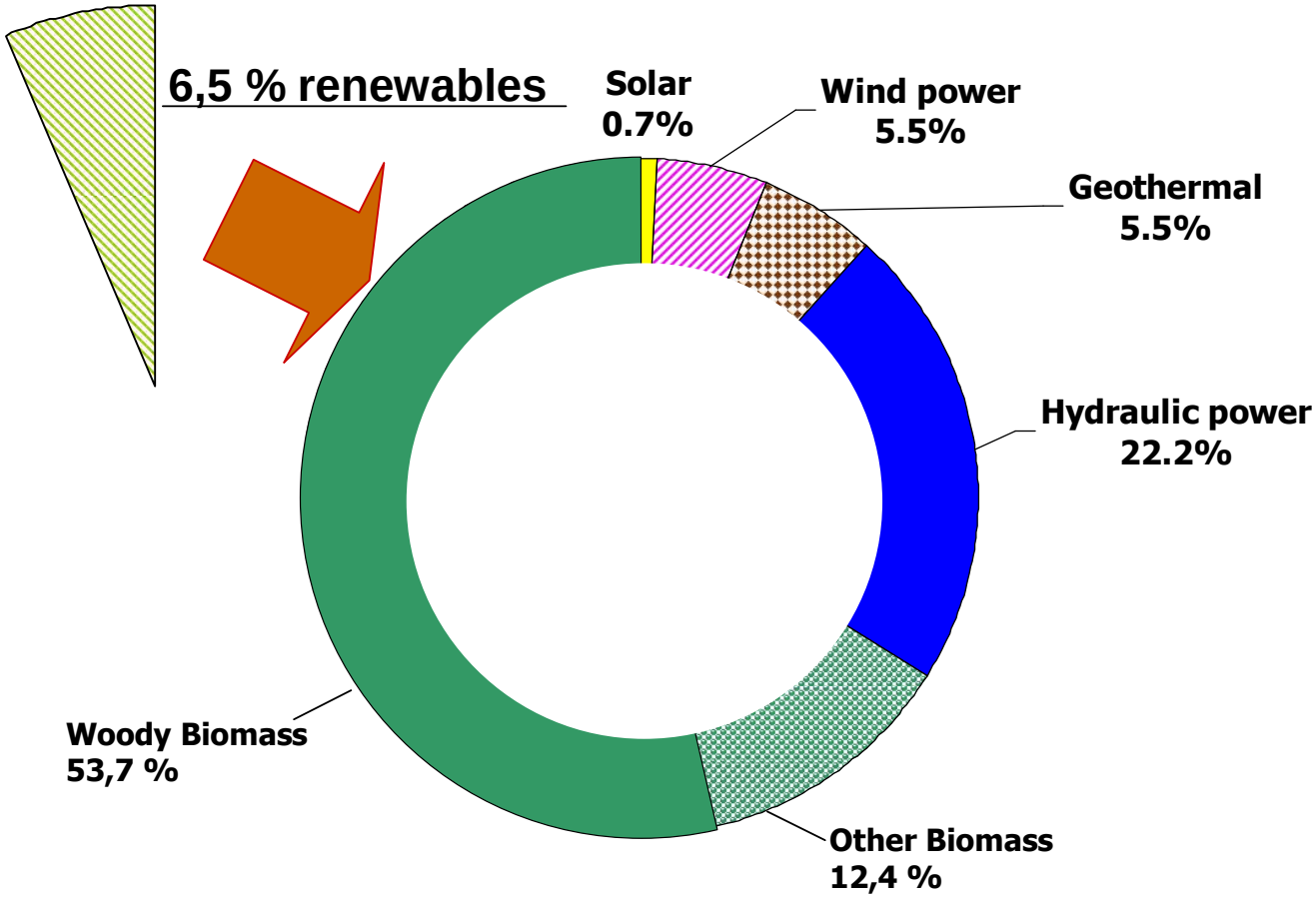
Wood Energy

Gross inland energy consumption (EU27)



Source: Eurostat (2007): Yearly statistics 2005

Renewable Energy Sources 2005 (EU 27)



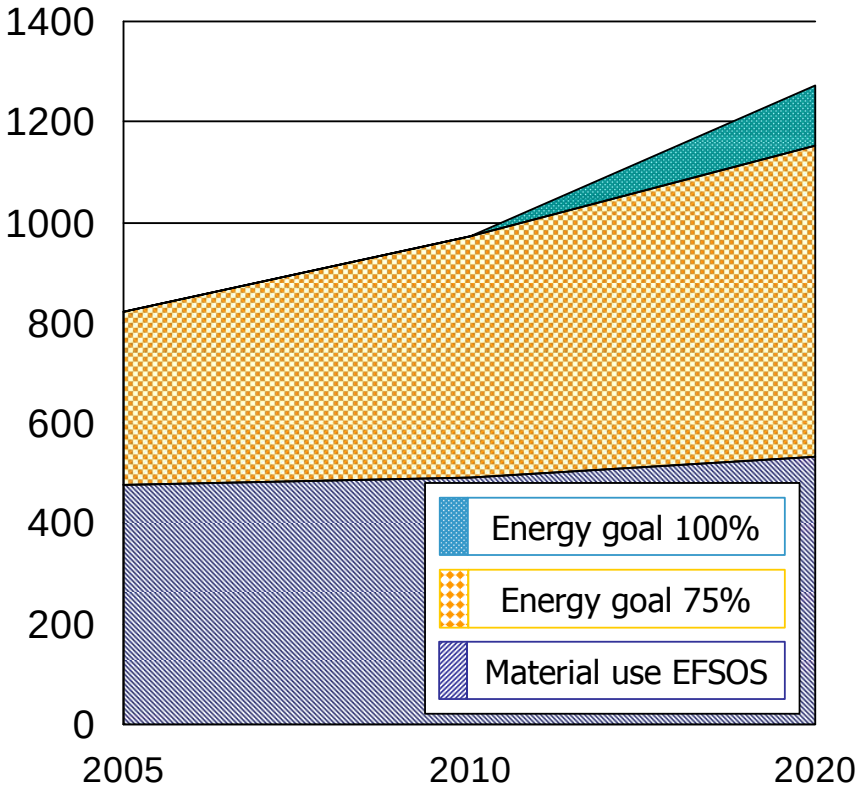
Wood: Nº 1 Renewable energy

Source: Eurostat (modified)

Energy use vs. material use today – and tomorro ?

Source:
Bioenergy International
(No. 4 2007)

Combined wood use [mio m³]
– 2005, 2010, 2020



Source: UNECE / Hamburg University (2007)

Role of wood energy data

- Wood energy plays an important role in the energy sector
- Wood energy will play an important role in achieving the 2020 goals on RES.

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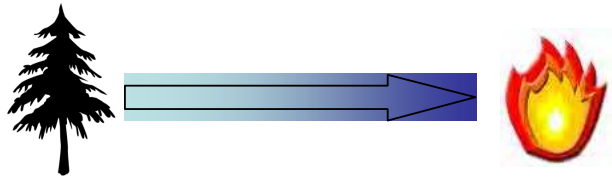
Structure

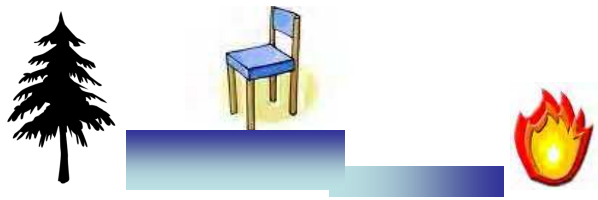
Direct:

Logging residues, thinnings, clearings, short rotation coppice etc.



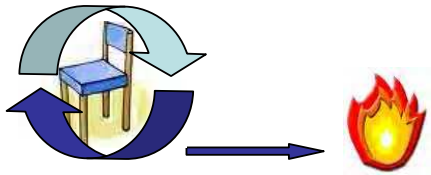
Indirect:

Co-products, enhanced/densified processed wood fuels (pellets, charcoal, biofuels), etc.



Recovered:

Post consumer recycled wood products (often contaminated), construction, demolition, waste etc.



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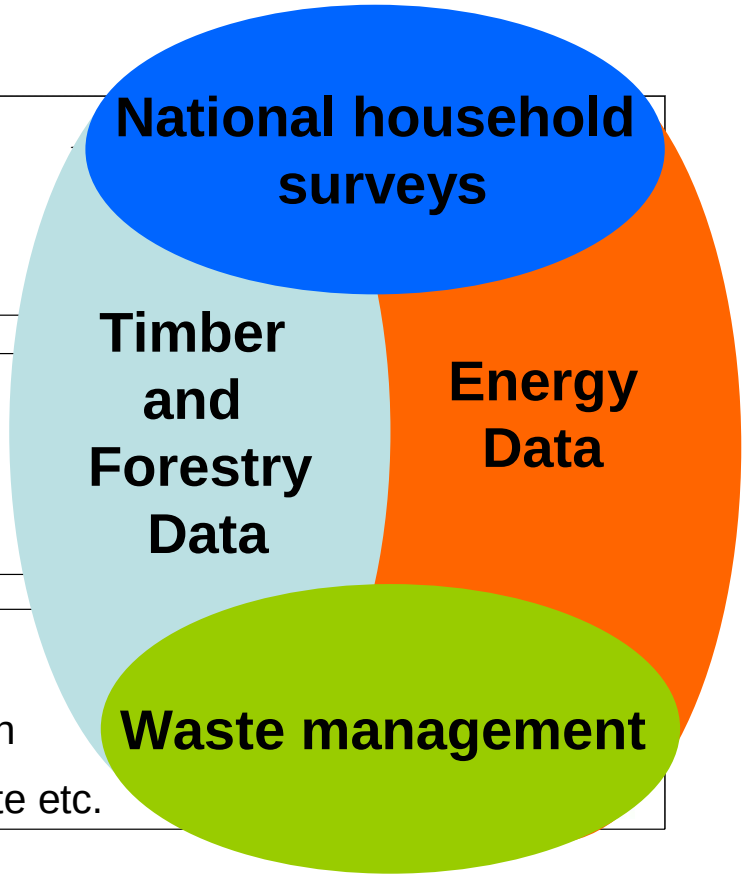
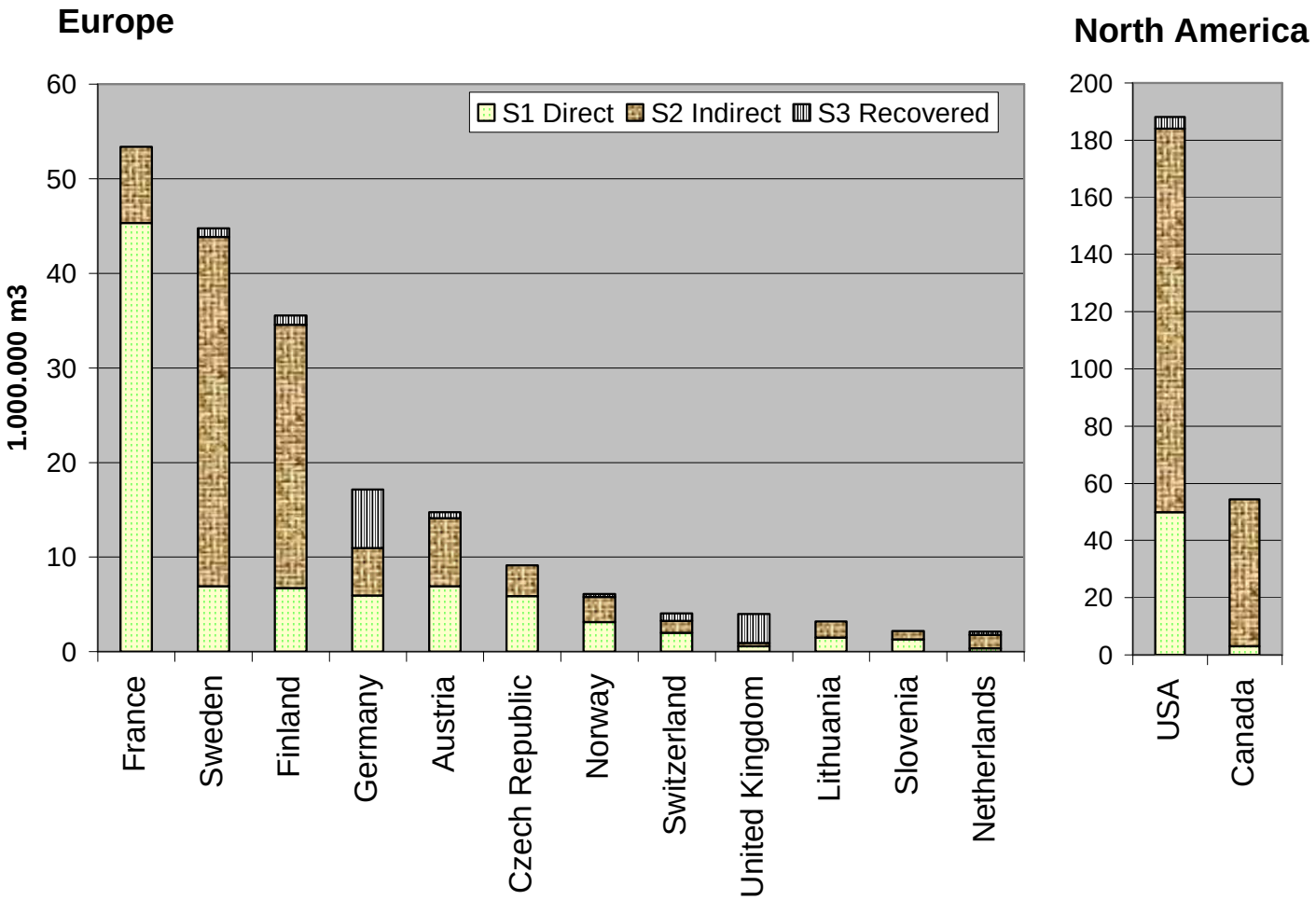
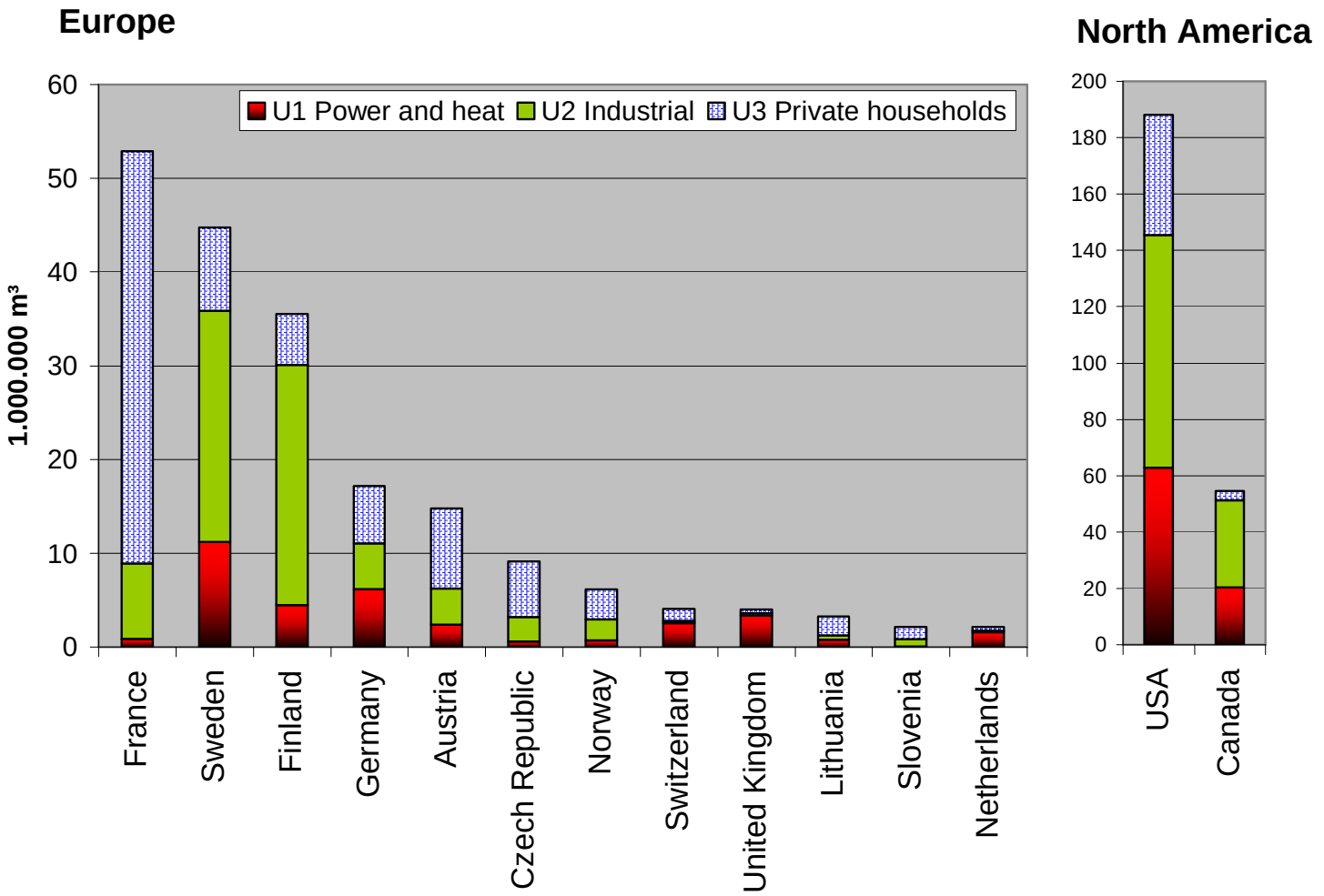


Sources of wood energy (2005)



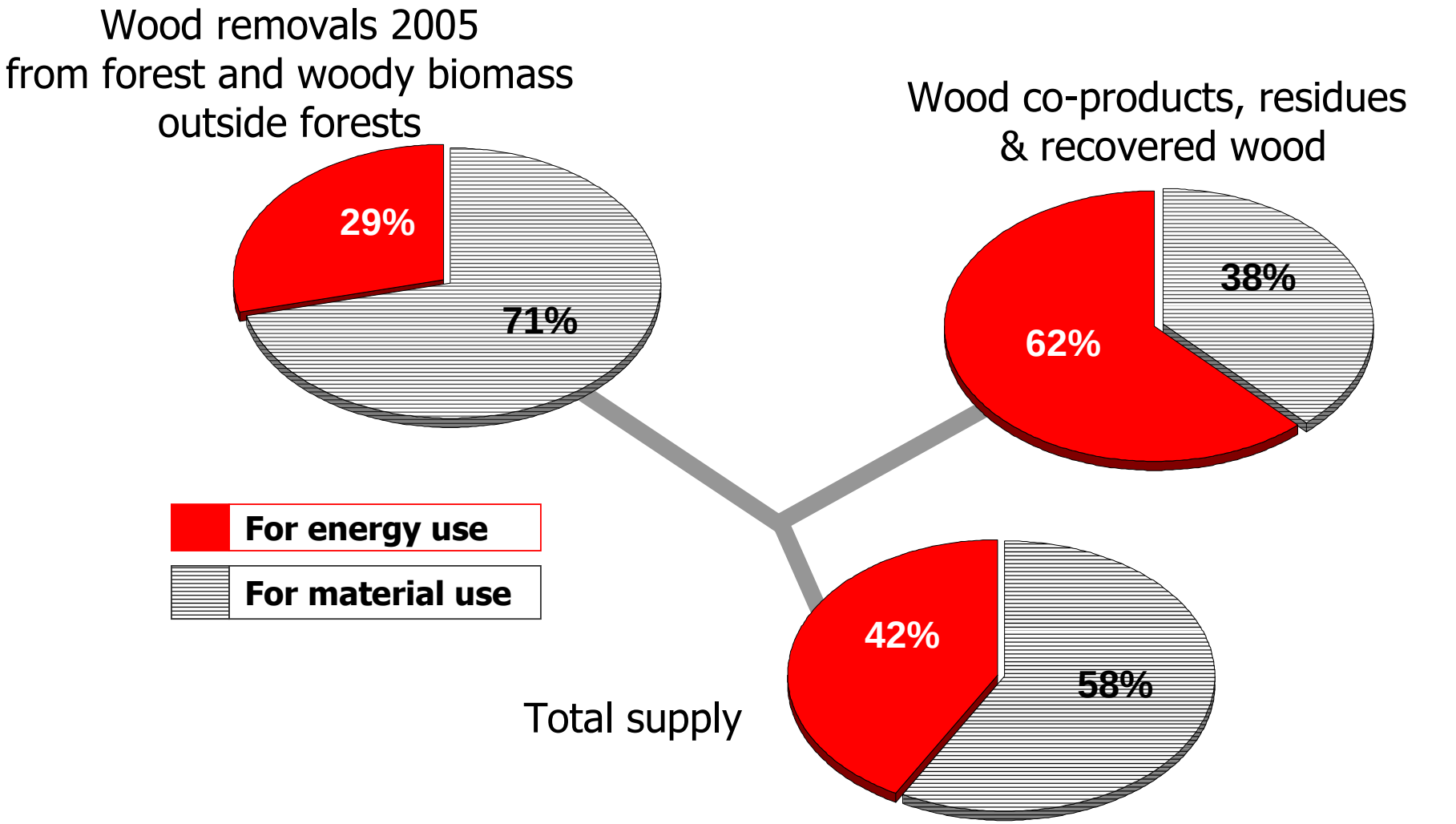
Source: UNECE Joint Wood Energy Enquiry 2006

User of wood energy (2005)



Source: UNECE Joint Wood Energy Enquiry 2006

Energy use vs. material use



Source: UNECE / Hamburg University (2007)

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- Missing wood biomass flows in current accounting
- Wood for energy more important than reflected by international databases
- WISDOM is an excellent initiative and its results are compatible with the JWEE.

Wood Energy Workshop:

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Thank you for your attention !

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European Forest Week
20-24 October 2008