

# Wood Energy in the UNECE region: Current Use and Trends

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# Why Wood Energy?



- Climate change targets
- Energy security
  - diversification of sources
  - reduction of dependence on fossil fuel imports
- Rural development and poverty reduction
  - Increased rural economic activity
  - Development of small and medium enterprises
  - Increased employment: 135 jobs/10,000 inhabitants
  - International trade opportunities
- Environmental Benefits
  - Increased forest management: less forest fire risk, reduction of industrial waste





# Current Use of Wood Energy





# Joint Wood Energy Enquiry

## Overview

- Data on Wood Energy use in 2005 & 2007
- UNECE/FAO/IEA/Eurostat collaboration
  - Fully compatible with international energy and forestry statistics
  - Data categories reflected in the EU National Renewable Energy Action Plan template
- JWEE 2009 launched this week.
  - Questionnaire has been sent to National Correspondents.
  - Responses expected by January 2011.
  - Presentation of key findings at the Working Party on Forest Economic and Statistics in Rome, March 2011



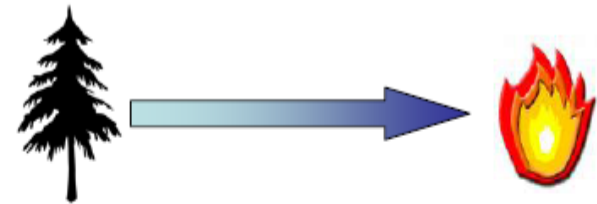


# Joint Wood Energy Enquiry 2007

## Wood Fuel Sources

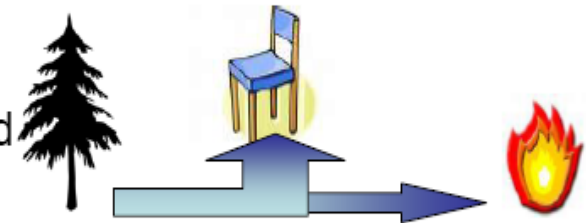
### S1 Direct:

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



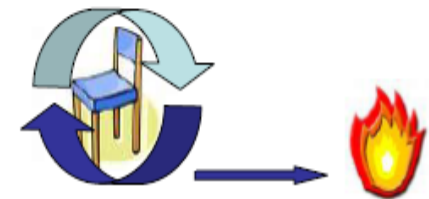
### S2 Indirect:

Residues, enhanced/densified processed wood based fuels (pellets, charcoal, biofuels), etc.



### S3 Recovered:

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





# Joint Wood Energy Enquiry

## Wood Energy Use

### U1 Power and heat:

Transformation of woody biomass for commercial power and heat production - "Main activity producer" (IEA).



### U2 Industry internal use:

Heat and energy generated for internal use by the forest based industries (sawmills, pulp, panel) for processing and drying.



### U3 Residential:

Wood energy generated by private households



### U4 Other:

Wood energy generated by public and private services, agriculture, forestry and fishery





# Joint Wood Energy Enquiry

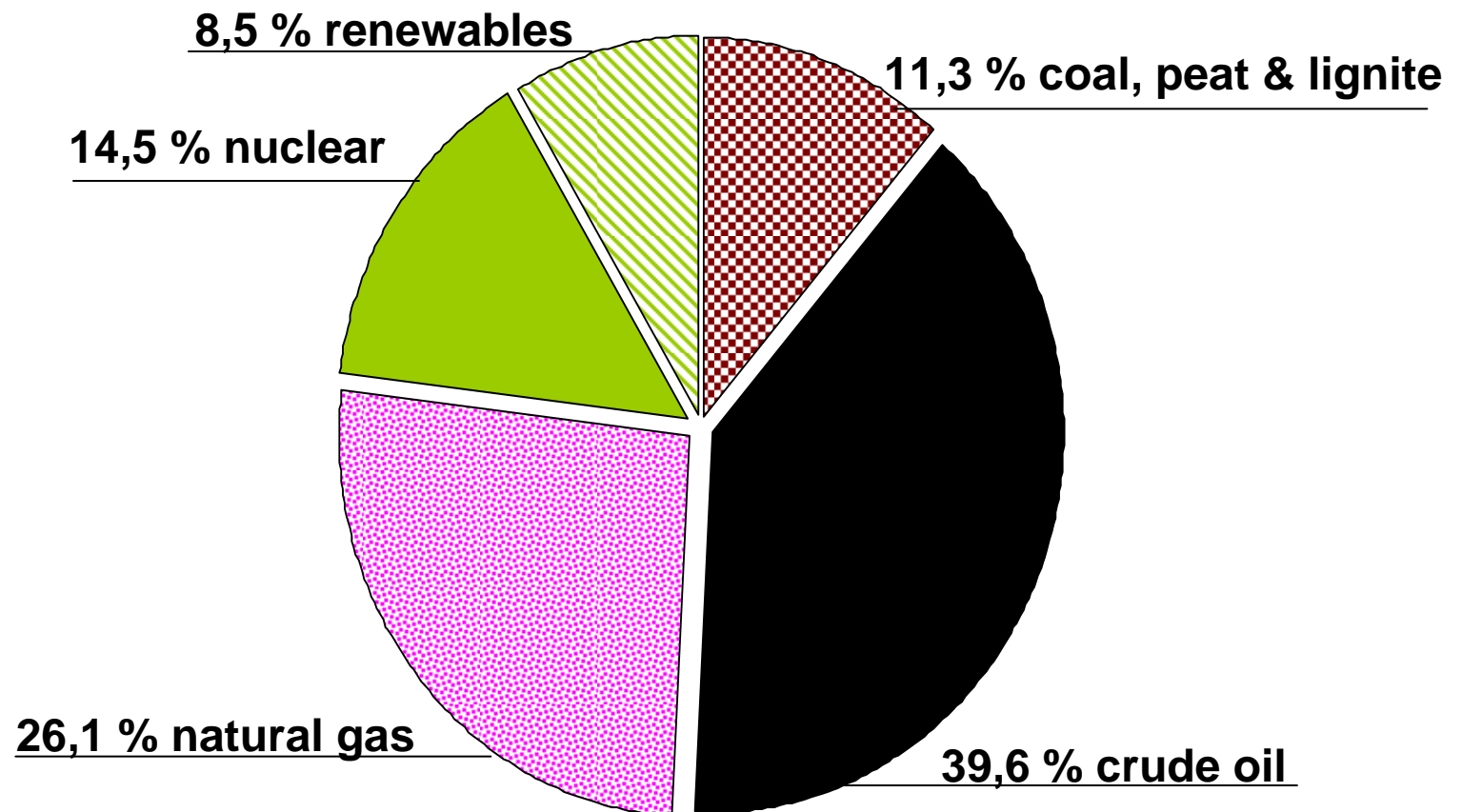
## Findings & Outcome

- Confirmation of high wood use of energy
  - Between 2005 and 2007, wood energy use grew annually by +3.5%
  - Use for commercial power and heat generation has developed strongly, +18% between 2005 and 2007.
  - Private households are currently the biggest users of wood energy: a situation that is expected to continue.
  - Wood energy markets grew despite the economic downturn has seen demand for other forest products decline
- Improvement/establishment of communication between national energy and forestry bodies
- Improved country statistics

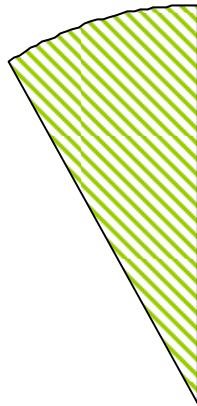


# Gross Inland Energy Consumption EU27 (2007)

Source: Eurostat 2009



# Gross Inland Energy Consumption EU27 (2007)



**8,5 % renewables:**

**Woody Biomass  
49,5 %**

Solar  
0,9 %

Wind power  
6,4 %

Geothermal  
4,1 %

Hydraulic power  
18,9 %

**Wood: N° 1 Renewable energy source**

**Other solid Biomass and  
wastes 20,3 %**



Source: Eurostat 2009

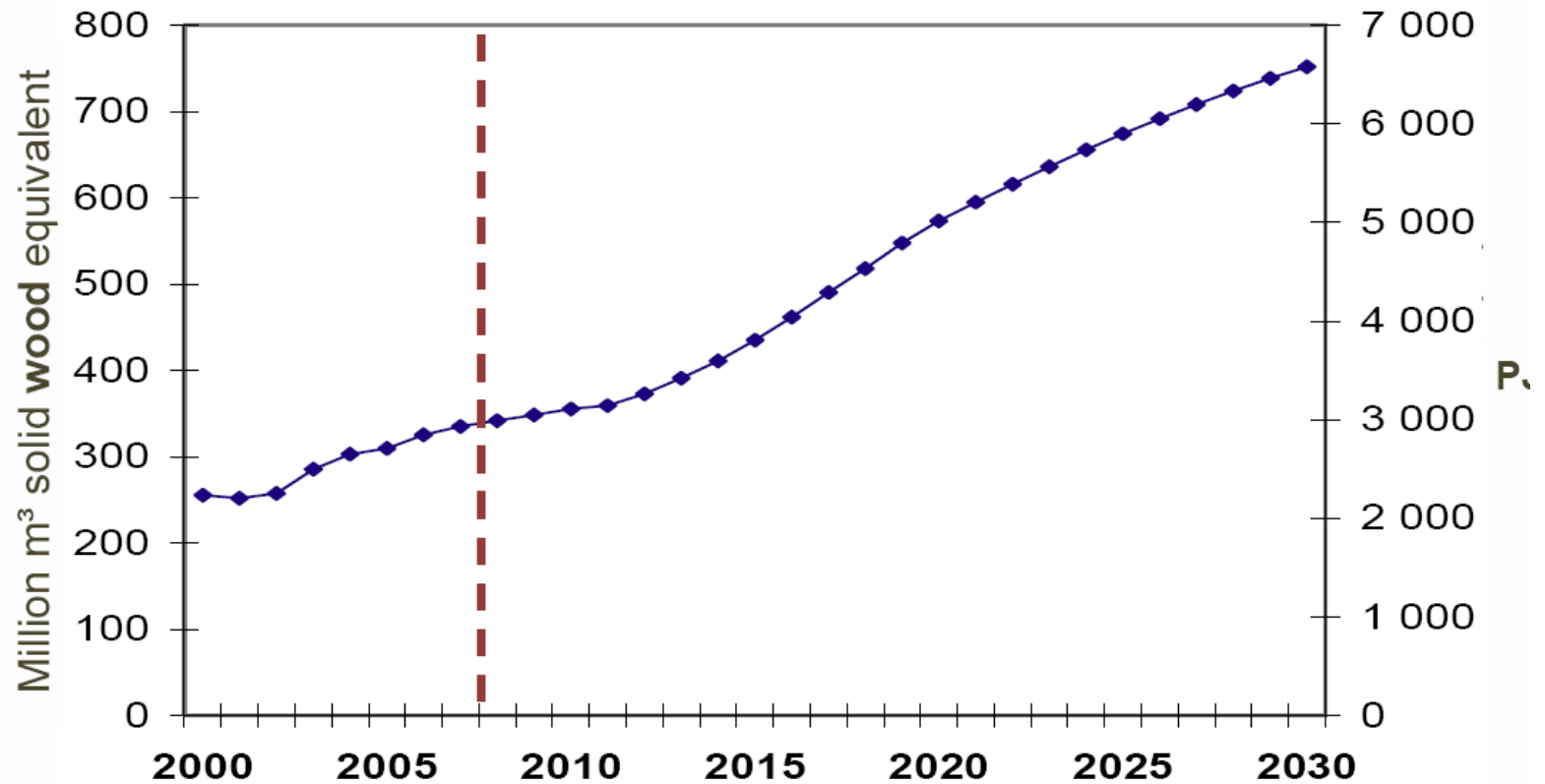


# Trends & Outlook





# Energy Use EUWood

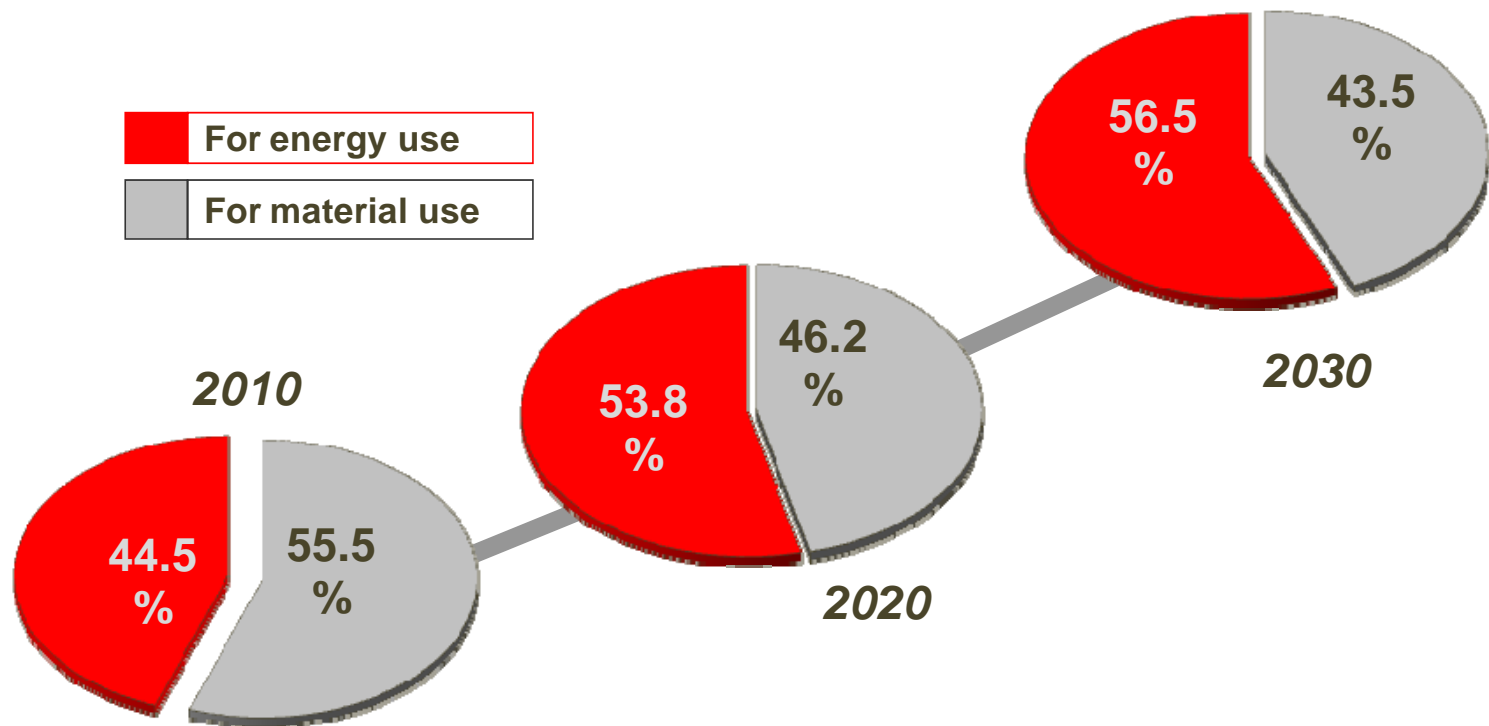


- EU27 energy efficiency targets are met, such that total energy consumption grows slowly
- Wood energy maintains its current role among RES
- No change in the efficiency of wood use for energy



# Energy vs. Material Use

## EUWood



# Fuel Trends



- Shift from “traditional” fuels (e.g. round and split logs) towards “modern” fuels (briquettes, pellets)
- In 2008 alone, wood pellet production capacity increased by 80% to an annual production capacity of 15 million metric tonnes. In the same period, wood pellet consumption increased by over 30% to over 8 million metric tonnes.
- Annual number of installed new pellets boilers is steadily increasing year by year. Italy had the strongest growth over the last years. The main reasons for the growth in those countries are due to financial support programs for private households (Germany, Austria, Sweden, Denmark) and/or high taxes on heating oil (Italy, Sweden) and electricity (Denmark).
- Existing political measures could see private household consumption reach 50 million metric tonnes by 2020, i.e. +16.5% year on year (Source: AEBIOM)



# Wood Energy Potential



- Bosnia and Herzegovina has an estimated unused wood potential of 1 million m<sup>3</sup> wood residue annually, which could be used to heat 130000 flats (300 000 citizens).
- In FYR Macedonia, wood waste from forests could substitute approximately 58 ktons of heavy fuel oil.
- In Serbia wood based energy consumption in 2008 (13.7% of total) decreased natural gas imports by USD 650 million.
- Only half of firewood and wood waste potential in Belarus is used (6.9 million m<sup>3</sup> equivalent to 1.4 Mtoe)





# Policy Aspects



# A comprehensive approach



- SUPPLY
  - Mobilise more wood from existing forests
    - Raise harvest levels
    - Use more parts of the tree (above and below ground biomass)
  - Increase supply of wood from outside the forest
    - Industry residues
    - Landscape care wood
    - Post consumer recovered wood
  - Expand Forest area
  - Increase imports from other regions
- DEMAND
  - Promote energy efficiency
  - Promote use of other renewables
  - Use wood more efficiently





# Sustainable Wood Mobilisation

- EC/MCPFE/UNECE/FAO Good practice guidance
  - Land tenure, management, coordination and planning
  - Transport and logistics
  - Markets and marketing
  - Improved recovery channels
  - Education, training and skills
  - Sources of and mechanisms for financing
  - Legal and fiscal measures
  - Silvicultural measures



# Cooperation with the Sustainable Energy Division



- Joint EE21 Project Proposal  
“Modern and sustainable heat and power from woody biomass in South-Eastern Europe:”
  - Demonstrating the feasibility of converting municipal heat and power systems in the Western Balkans to woody biomass
  - Laying foundation for future investment projects
  - Detailed project proposals for one or two municipalities in each of the participating countries



# Challenges



- To mobilise enough wood on a sustainable basis to reach renewable energy targets and to incorporate wood biomass fully into national renewable energy plans
- To find the most effective strategy balancing raw material and energy needs while maintaining sustainability and fulfilling the many roles of forests, especially protection of biodiversity and climate change mitigation and adaptation
- Adequate and timely data/information about current and future wood energy sources, potential and uses
- Forest sector policy should be shaped in cooperation with energy policy makers, and vice-versa, to help achieve a more renewable energy future, and shape an optimized climate change mitigation mix.





**THANK YOU**  
for your attention

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