



Regional Forest Information Week

State of forests and forest management in the UNECE region
in the context of current needs and challenges

United Nations, Geneva – 21 March 2011



EUwood: estimating the real potential for changes in growth and use of EU forests

By Kit Prins, on behalf of the EUwood team



The EUwood team

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The project

- Tender from DG TREN asking for an estimate of the **real** potential for changes in growth and use of EU forests
- Report backbone: Wood Resource Balance (Mantau)
- Comprehensive approach: all sources of wood and all uses, with explicit treatment of residues and recovered wood
- Estimates, even weak, considered better than gaps!



Pragmatic use of interlocking methods

→ source		use ←	
[mio. m ³]			[mio. m ³]
stemwood	EFISCEN	EFSOS Conversion factors and WRB	Sawmill industry
forest residues			Panel industry
bark			Pulp industry
	other material uses		
Woody biom. outside for.	Literature & modelling	EU RES 2020 calc. enquiries	Wood based fuel industry
post consumer wood			wood industry internal use
sawmill by products	biomass power plants		
other industrial residues	household use		
black liquor	liquid biofuels		
Processed wood fuel	Energy use		



Wood resource balance 2010 EU/EFTA

685 M m³
331 M odt
5,973 PJ

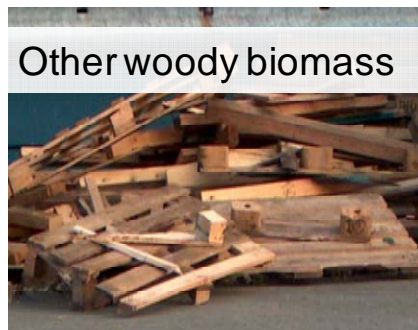


Material uses

458 M m³
229 M odt
3,994 PJ



308 M m³
166 M odt
2,686 PJ



Energy uses

346 M m³
173 M odt
3,017 PJ



Source: MANTAU, Wood resource balance, EUwood – team 2010 (VERKERK/LINDNER/ANTTILA/ASIKAINEN: EFISCEN forest resources and constraints; LEEK, N.: Post-consumer wood; OLDENBURGER J.: Landscape care wood; SAAL, U.: Industrial residues; MANTAU/SAAL: Wood industry; PRINS, K.: Policy options; JONSSON, R. EFSOS calculations)



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Wood Resource Balance 2010

Potential 2010	in M m ³	in M m ³	Demand 2010
Stemwood C, ME	362	196	Sawmill industry
Stemwood NC, ME	182	11	Veneer plywood industry
Forest residues, ME	118	143	Pulp industry
Bark, ME	24	92	Panel industry
Landscape care w. (USE) ME	59	15	Other material uses
Short rotation plantation	-	21	Producer solid wood fuels
Sawmill by-products	87	86	Forest sector intern. use
Other industrial residues	30	83	Biomass power plants
Black liquor	60	23	Private households (pellets)
Solid wood fuels	21	155	Private households (other)
Post-consumer wood	52	0	Liquid biofuels
Total	994	825	Total

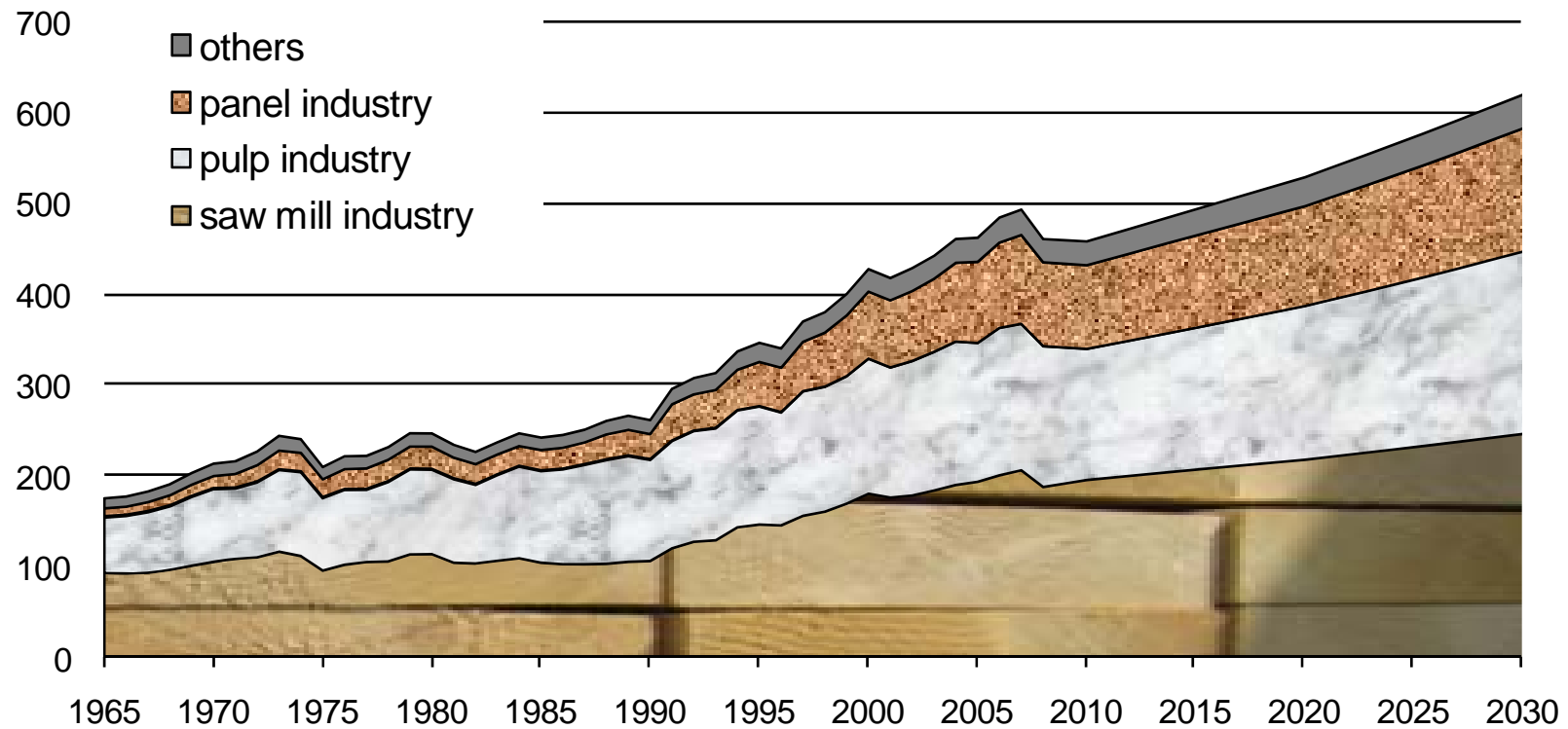
Source: MANTAU, Wood resource balance, EUwood – team 2010 (VERKERK/LINDNER/ANTTILA/ASIKAINEN: EFISCEN forest resources and constraints; LEEK, N.: Post-consumer wood; OLDENBURGER J.: Landscape care wood; SAAL, U.: Industrial residues; MANTAU/SAAL: Wood industry; PRINS, K.: Policy options; JONSSON, R. EFSOS calculations)



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Scenario for material use of wood, to 2030 (Scenario A1, EU/EFTA)



Source: MANTAU, Wood resource balance, EUwood – team 2010 (MANTAU/SAAL: Wood industry; based on UNECE/FAO and JONHSON, R.: EFSOS-calculations)

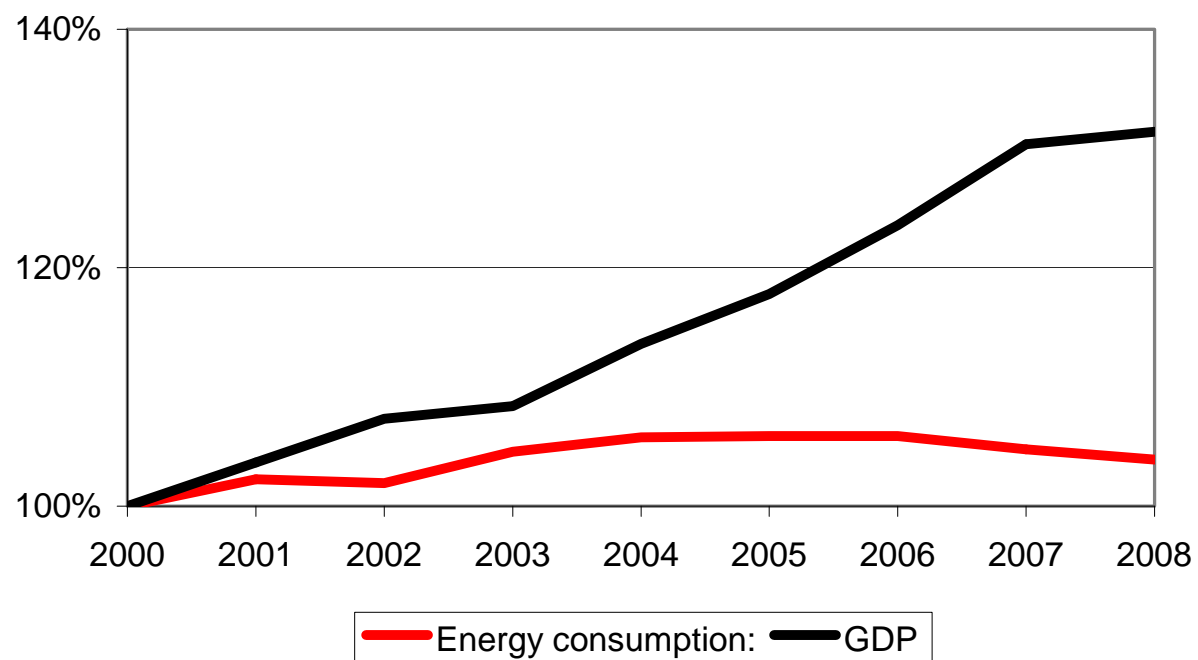


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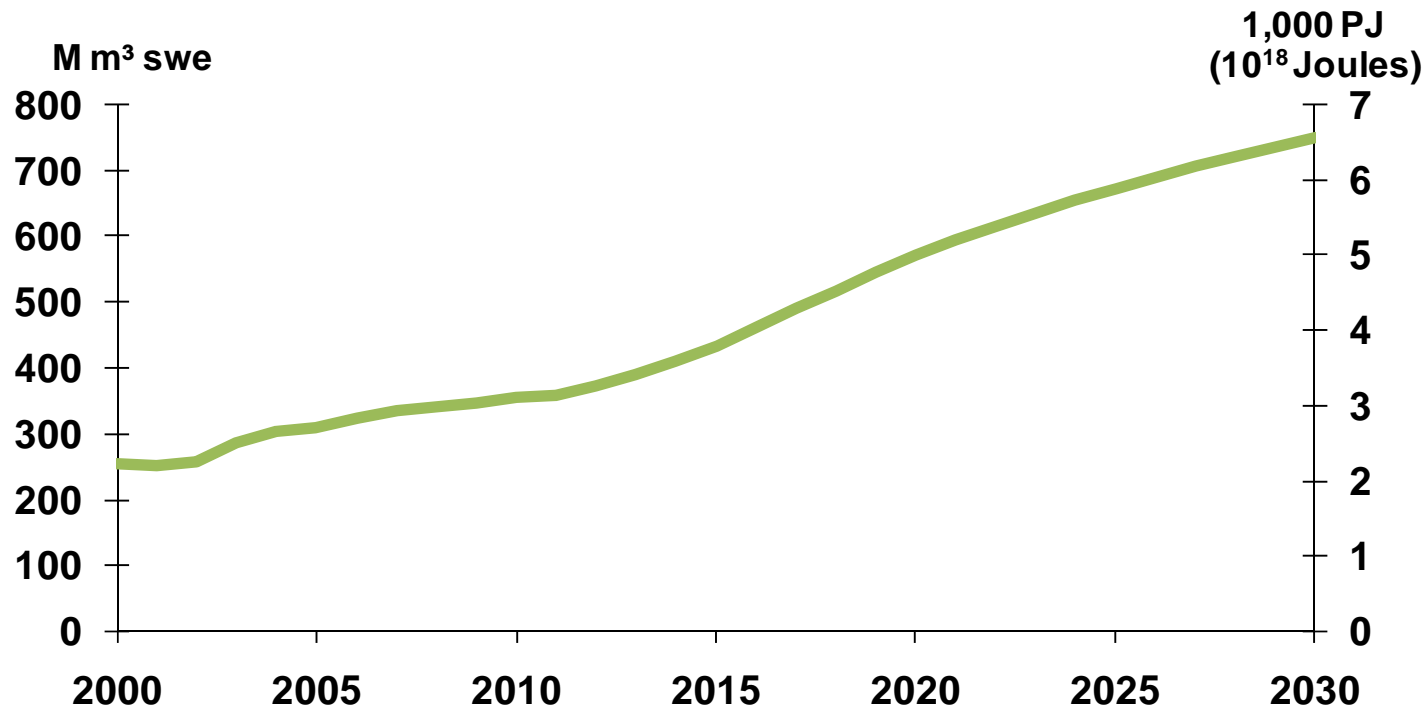
GDP and energy consumption are already “decoupled”

EU 27 (2000 = 100%)



Wood energy consumption: past trends and targets

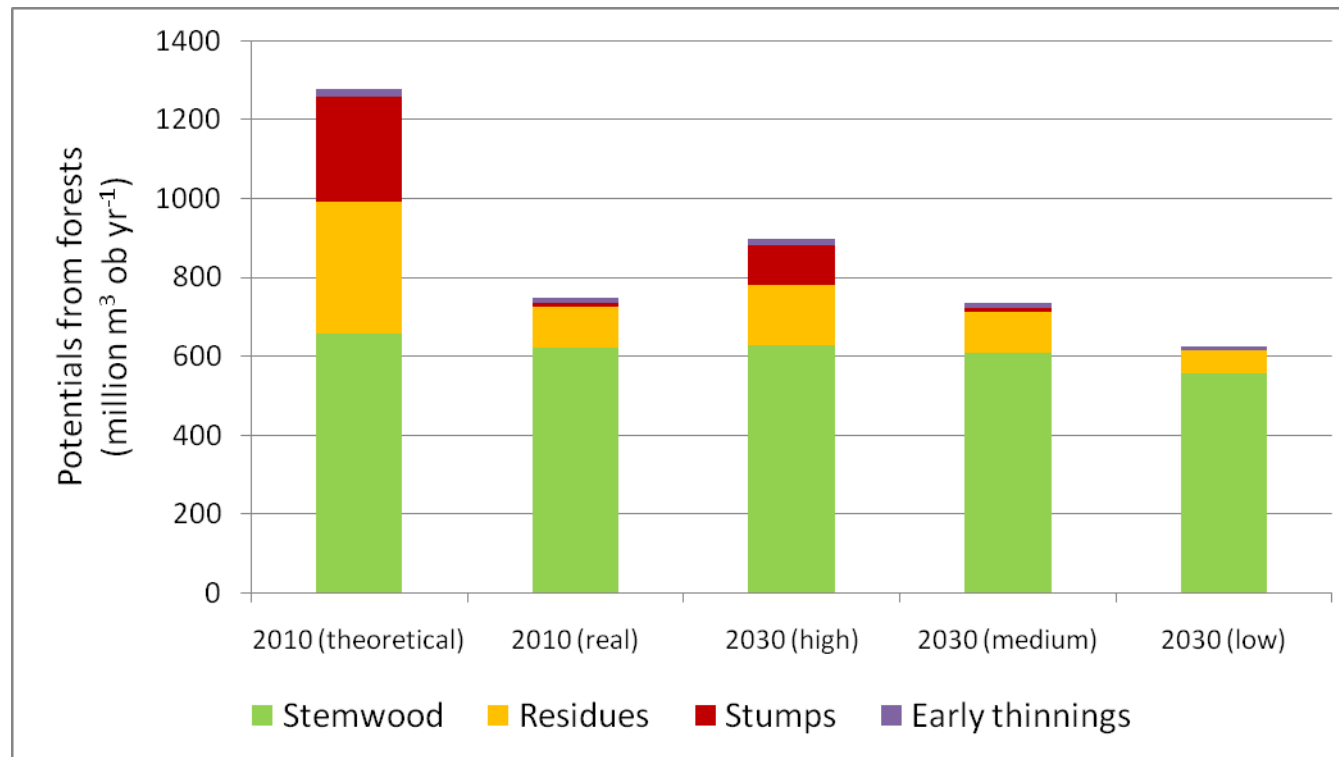
(NB assumptions: energy efficiency, faster growth for other renewables etc.)



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Biomass supply from EU27 forests



Potential for landscape care wood



	2010		2015		2020		2030	
Total potential	86.7		86.7		86.7		86.7	
Used	39.0	45.0%	43.4	50.0%	47.7	55.0%	52.0	60.0%
Disposal and Composting	17.3	20.0%	15.9	18.3%	14.5	16.7%	13.0	15.0%
Unused	30.4	35.0%	27.4	31.7%	24.5	28.3%	21.7	25.0%



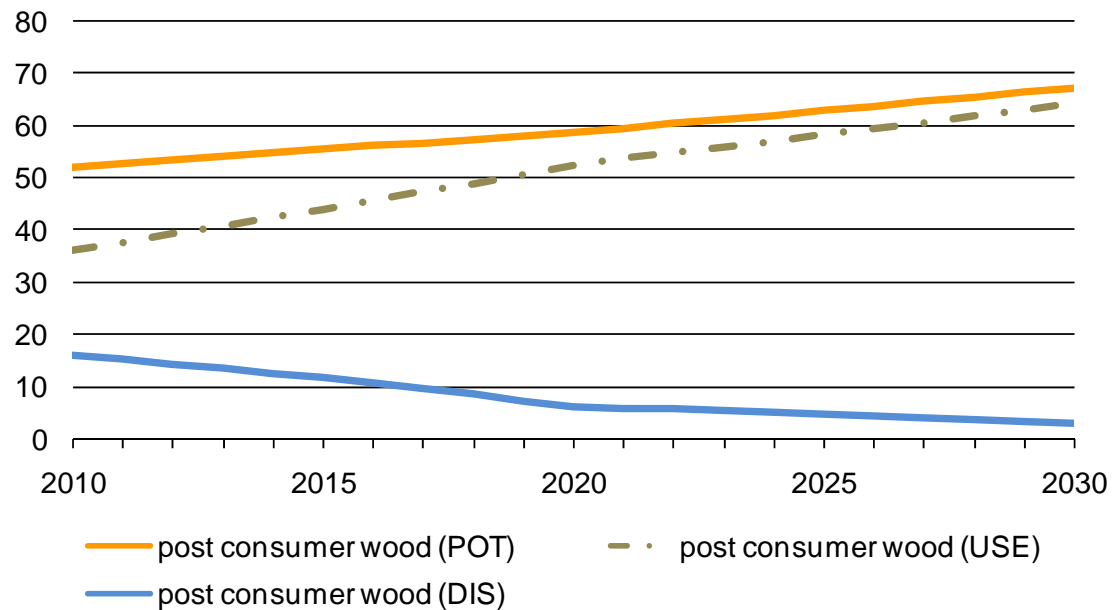
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Potential for post consumer wood



in M m³ - comparing plot



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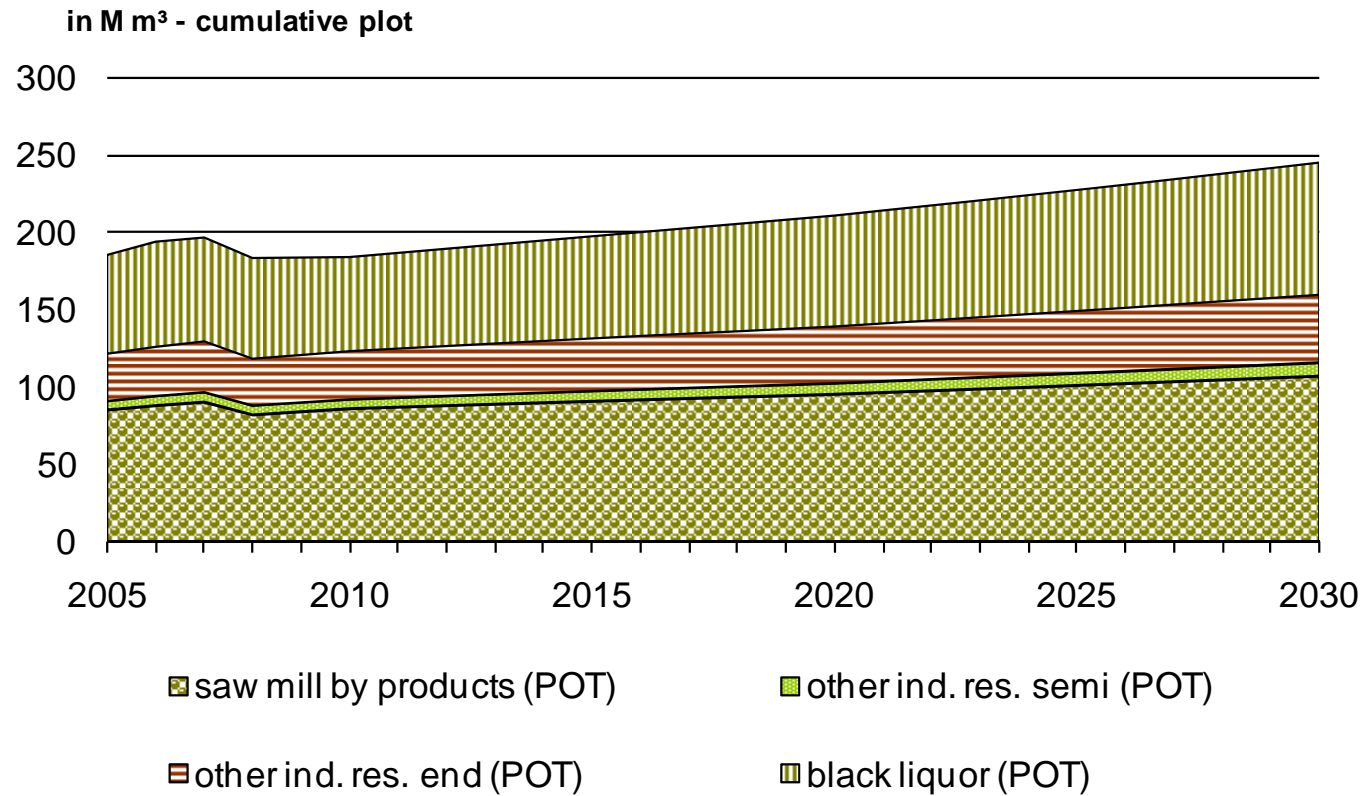


Short rotation coppice: how many hectares needed to fill the “gap”?

Scenario	Example: Resource deficits in [million m ³ rwe]	Needed area for SRC [million ha]	
		4 t DS/ha*a	12 t DS/ha*a
First	350	35	12
Second	240	24	8
Third	75	7.5	2.5



Potential supply of industrial wood residues

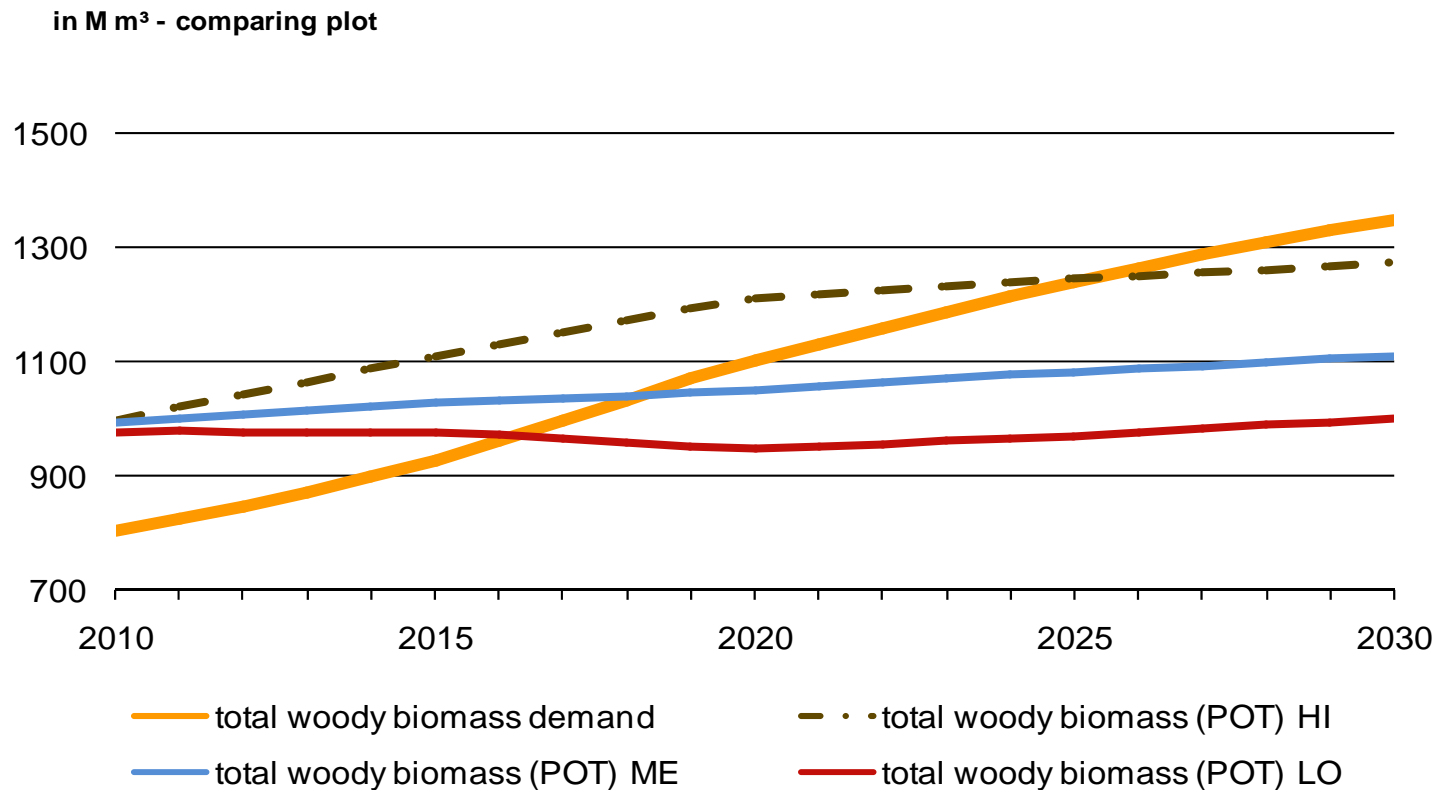


Wood resource balance 2010 and 2030

Potential in M m ³	2010	2030	2010	2030	Demand in M m ³
Stemwood C, ME	362	356	196	247	Sawmill industry
Stemwood NC, ME	182	181	11	17	Veneer plywood industry
Forest residues, ME	118	120	143	200	Pulp industry
Bark, ME	24	23	92	136	Panel industry
Landscape c. w. (USE) ME	59	74	15	20	Other material uses
<i>Short rotation plantation</i>	-	-	21	54	Producer of wood fuels
Sawmill by products	87	108	86	114	Forest sector intern. use
Other industrial residues	30	42	83	377	Biomass power plants
Black liquor	60	85	23	82	Households (pellets)
Solid wood fuels	21	54	155	151	Households (other)
Post consumer wood	52	67	0	29	Liquid biofuels
Total	994	1,109	825	1,427	Total



Woody biomass demand and supply, 2010-2030, EU27



Source: MANTAU, Wood resource balance, EUwood – team 2010 (VERKERK/LINDNER/ANTTILA/ASIKAINEN: EFISCEN forest resources and constraints; LEEK, N.: Post-consumer wood; OLDENBURGER J.: Landscape care wood; SAAL, U.: Industrial residues; MANTAU/SAAL: Wood industry; PRINS, K.: Policy options; JONSSON, R. EFSOS calculations)

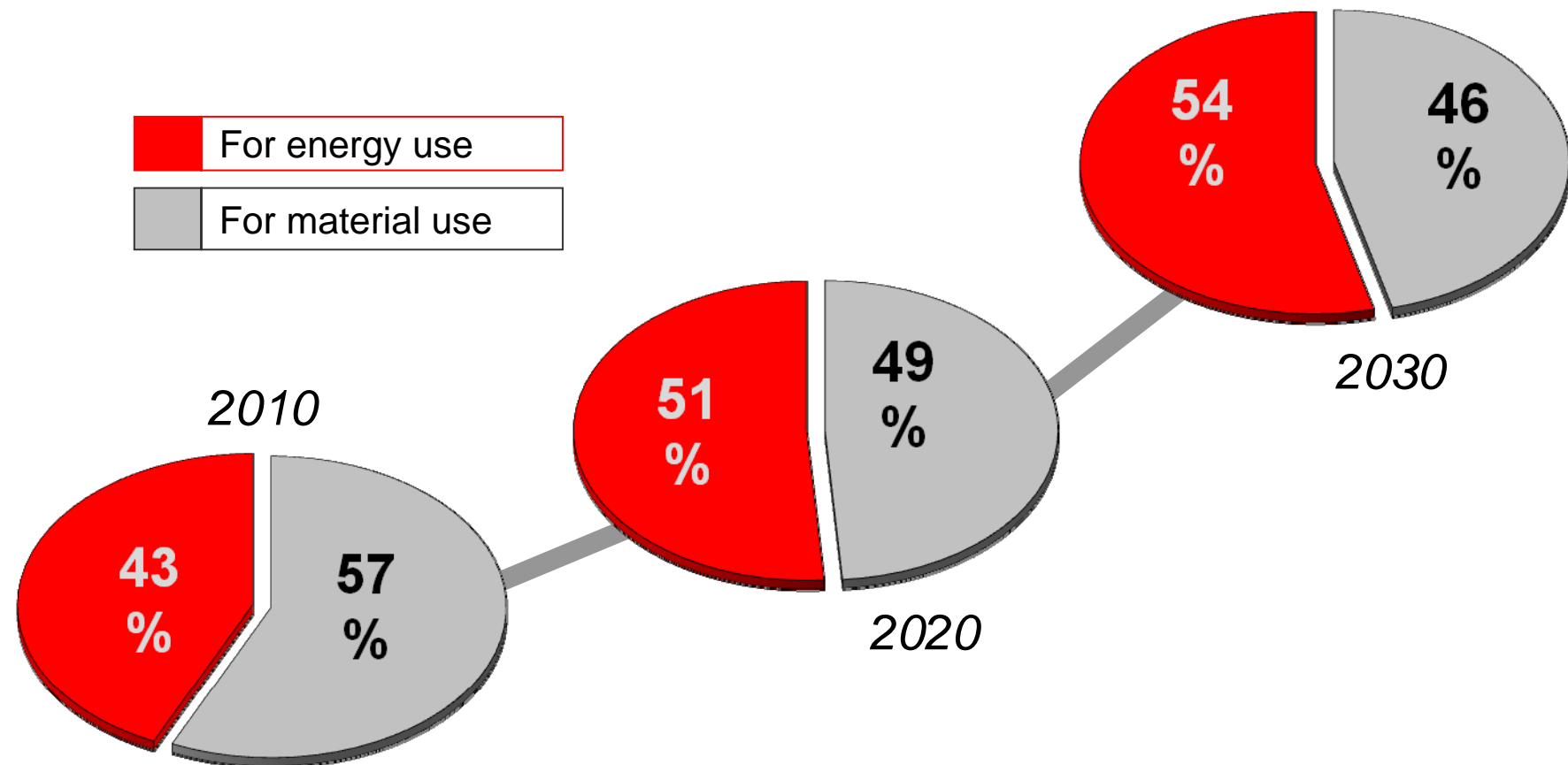


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Wood resource balance – Structural changes

- EU27 – share of energy and material use

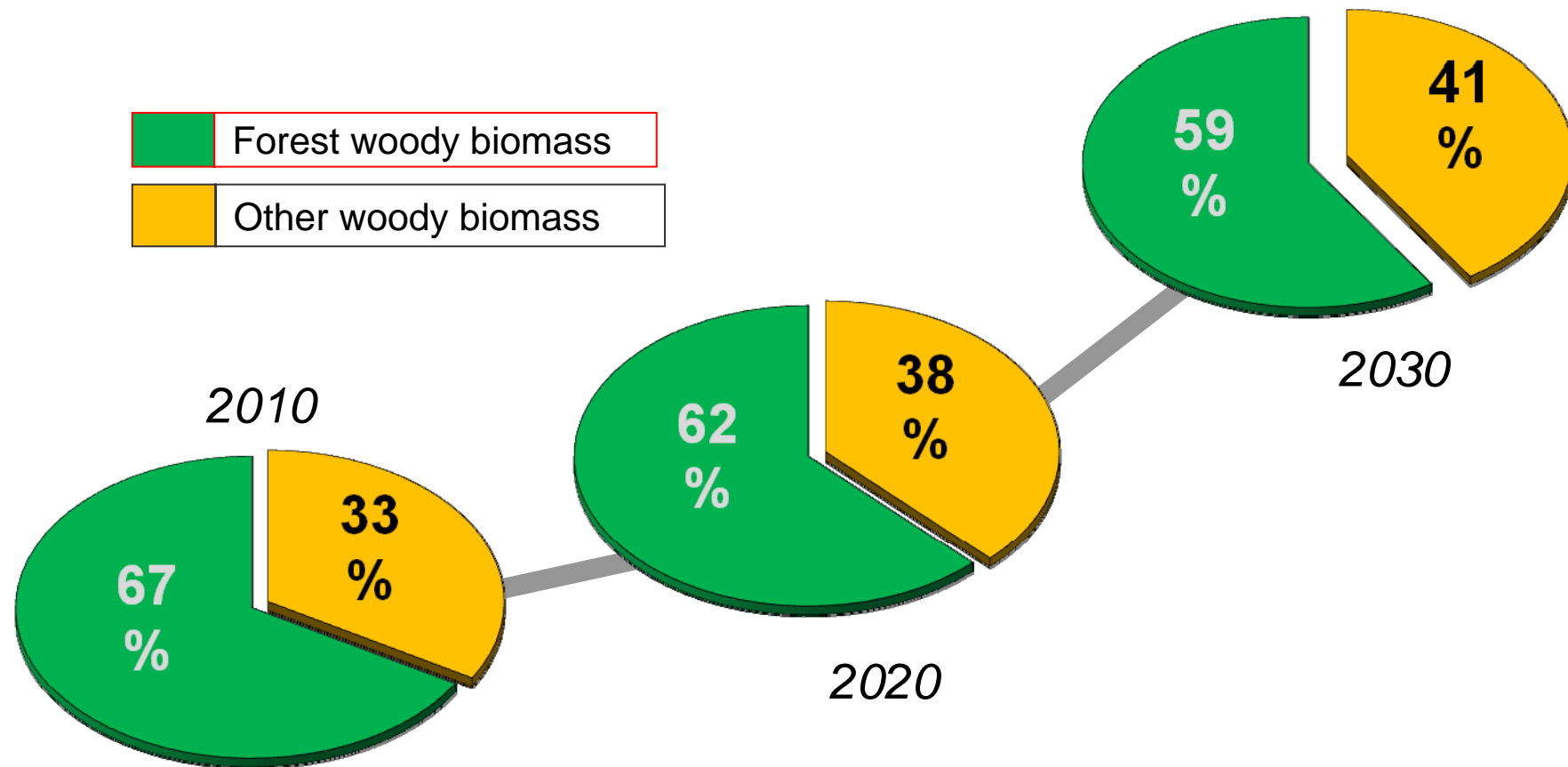


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Wood resource balance – structural changes

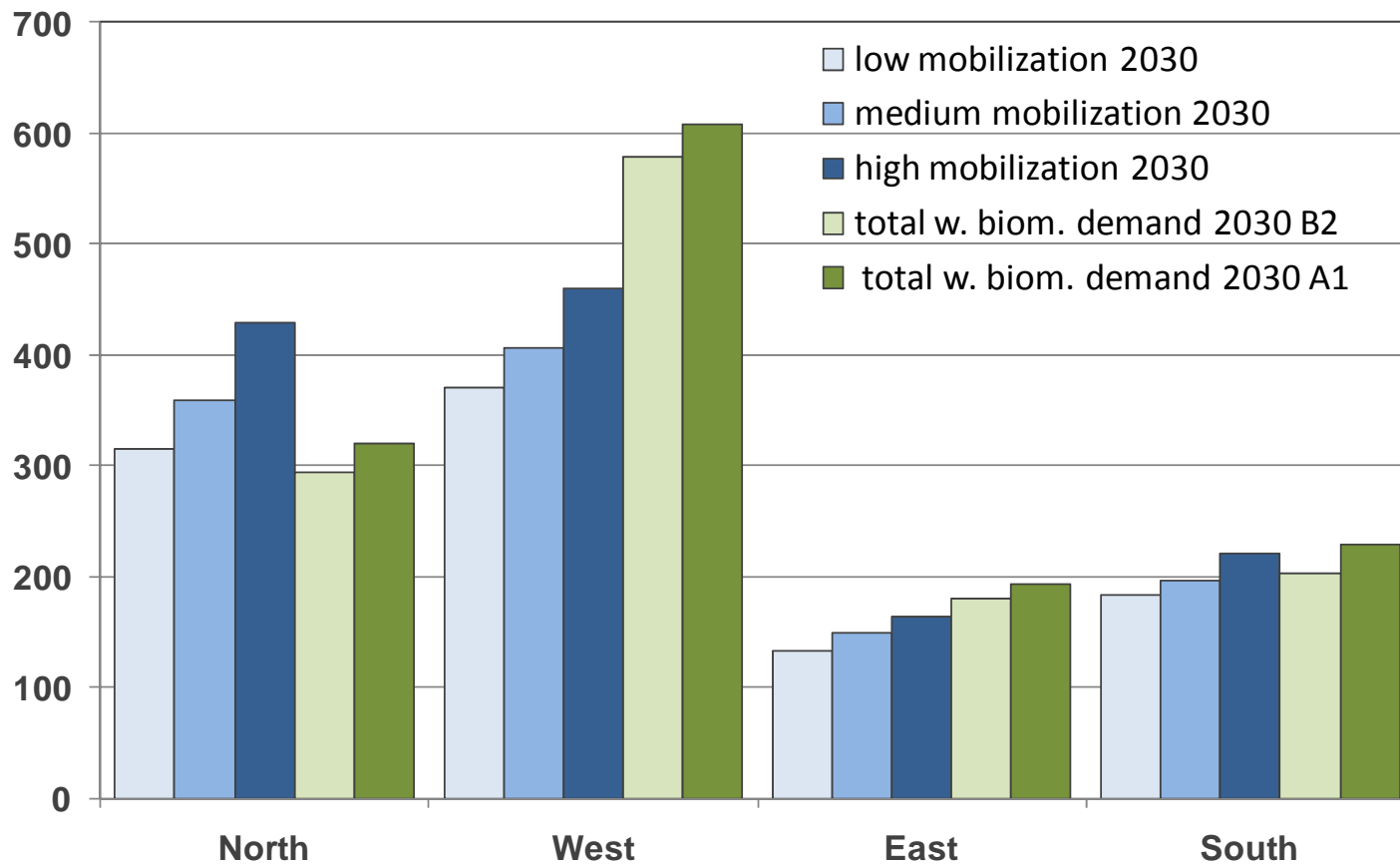
- EU27 – share of forest woody biomass and other biomass



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EU27: scenarios for 2030



Source: MANTAU, Wood resource balance, EUwood – team 2010 (VERKERK/LINDNER/ANTTILA/ASIKAINEN: EFISCEN forest resources and constraints; LEEK, N.: Post-consumer wood; OLDENBURGER J.: Landscape care wood; SAAL, U.: Industrial residues; MANTAU/SAAL: Wood industry; PRINS, K.: Policy options; JONSSON, R. EFSOS calculations)



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A comprehensive approach is needed

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



Conclusion

EUwood has shown that with a ***high mobilisation scenario***, it is difficult, but not impossible, to supply, on a sustainable basis, enough wood to satisfy the needs of the industry and to meet the targets for renewable energy. On a ***medium mobilisation scenario***, there would be enough wood to meet demand for 2020, but not for 2030. However, even to achieve the medium mobilisation will require long term commitment and investment, a comprehensive approach, numerous specific policy measures, and favourable framework conditions, many in areas not directly controlled by the forest sector policy makers.



Finally ...

If Europe wants enough wood supply for material and energy in 2030, action according to a comprehensive strategy must start now



THANK YOU FOR YOUR ATTENTION

Download EUwood Final report and Methodology report at
http://ec.europa.eu/energy/renewables/studies/bioenergy_en.htm



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