

Future Trends of Finnish Forest Industry

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Outline

1. Pulp and Paper Industry
2. Wood Products Industry
3. The Outlook for Wood Energy
4. Conclusions & Implications

The presentation is heavily based on:

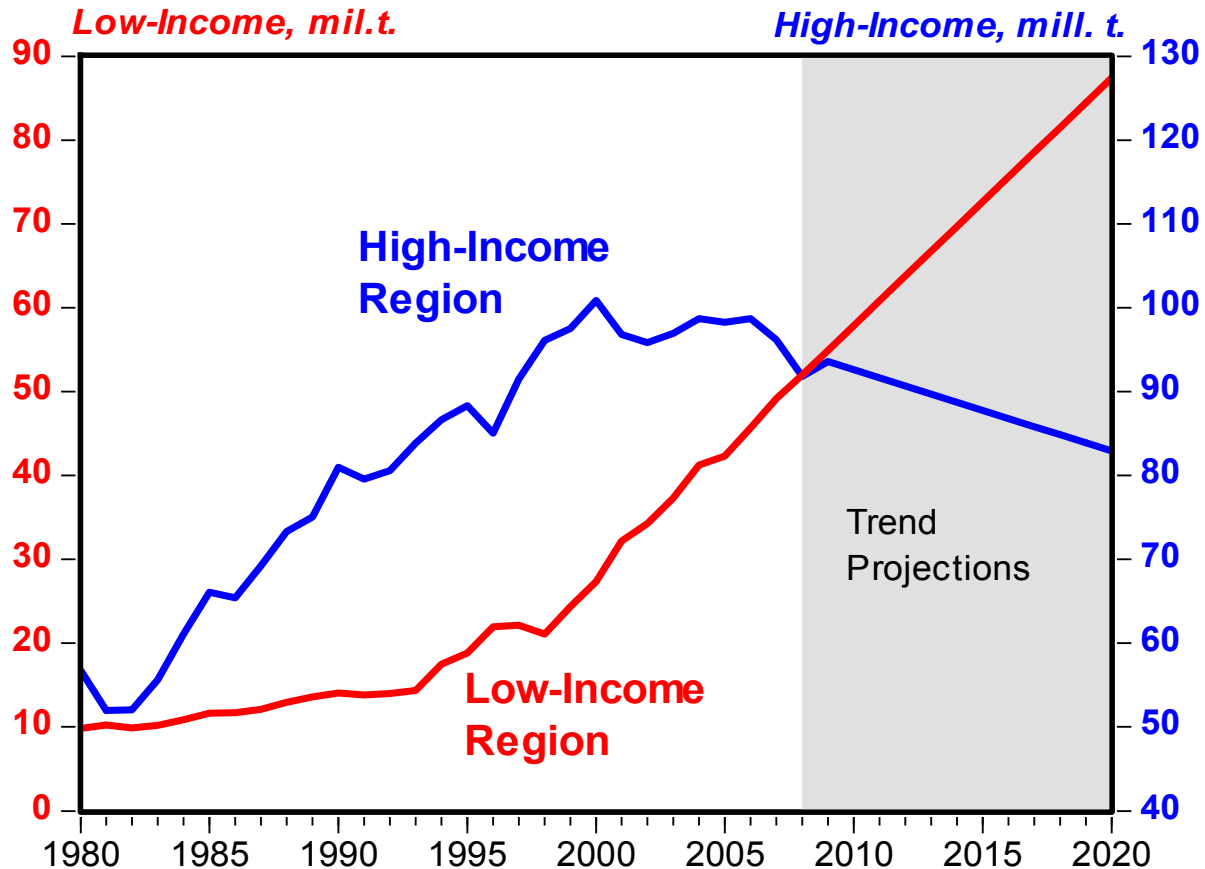
Lauri Hetemäki & Riitta Hänninen. Outlook for forest industry production and wood consumption for 2015 and 2020. Metla Working Papers, No. 122, 2009.

<http://www.metla.fi/julkaisut/workingpapers/2009/mwp122-summary.pdf>

Pulp and Paper Industry

- The long-term problems of Finnish pulp and paper industry are related to paper demand in the main export markets and relative competitiveness (structural weaknesses in cost structure)
- The demand for printing and writing papers (the main products) are either stagnating or declining in North American and Western European markets (also in other OECD countries)
- The supply is increasing rapidly in Asia (mainly paper) and South America (mainly pulp)
- As a result, also the real prices have been declining
- The packing and paper board demand and production are moving increasingly from OECD-countries to Asia
- The production of pulp and paper products is declining in Finland. Similar development in Sweden and North America

World Graphics Paper (newsprint + printing and writing paper) Consumption 1980–2008, and Trend Projections to 2020



From Finland's production, 80 % goes to High-Income, and 20 % to Low-Income countries

The Most Important Factor Behind the Decline in High-Income Regions is Digital Media

	Population (million)	Internet Users (million)	Internet Penetration (% pop.)	Newsprint Consump. per cap. (kg)	Print. Writ. Pap. Consump. per cap. (kg)
Low-Income Regions	5 595	940	16.8	2.5	6.4
High- Income Regions	992	676	68.1	24.7	72.2

Population and Internet figures for 2009 (Internet World Stats), paper consumption figures for 2007 (FAO)

Finland's Pulp and Paper Industry Production in 2007 and Projections to 2020

<i>million tons</i>	2007	2020	Change 2007 v. 2020	
			Quantity	%
Paper and Paperboard	14,3	9,4	-4,9	-34 %
Pulp	12,9	7,5	-5,4	-38 %

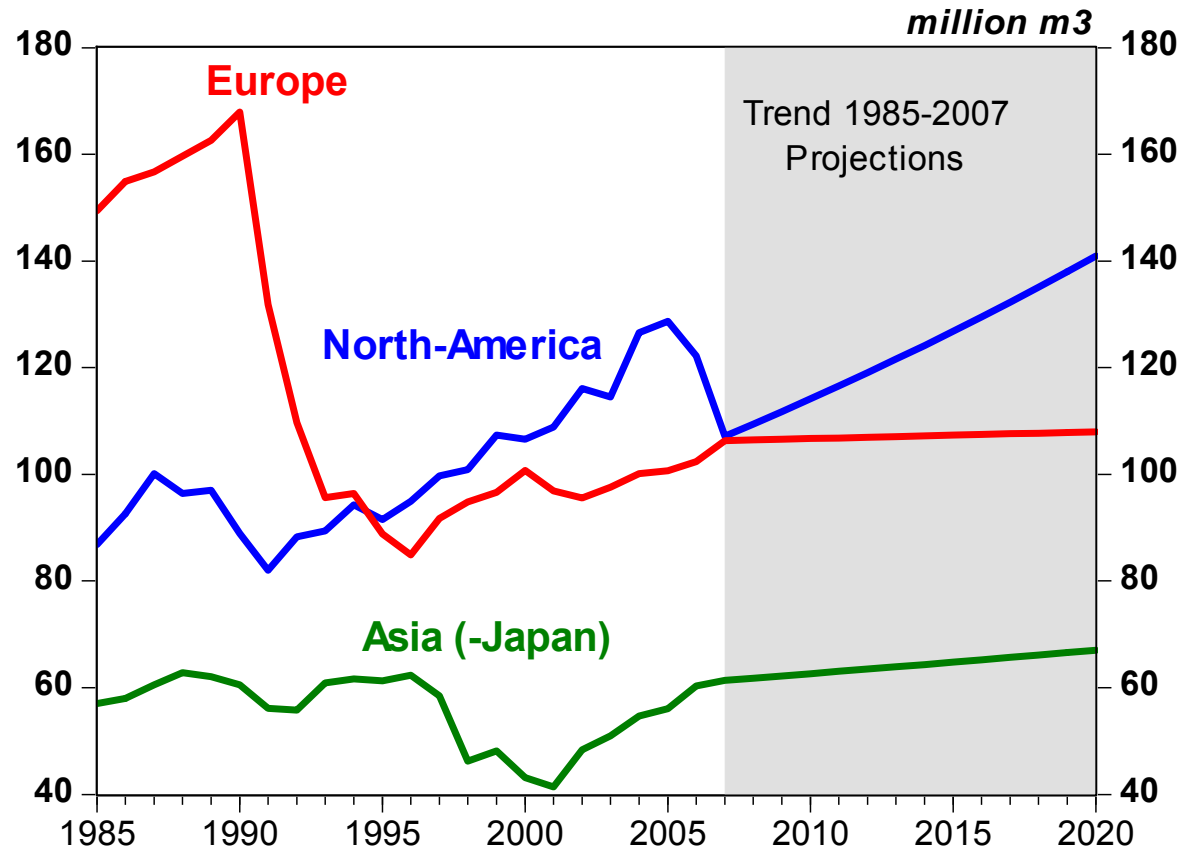
Implications to Wood Products Industry

- Less demand for pulpwood and chips (-38 % & -24%)
- Wood products industry's income from chips to pulp industry declines
- "More room" for wood energy production
- The relative importance of pulp and paper industry declines and wood products industry increases
- This has implications also to future policy

Wood Products Industry

- Structural features:
 - in global consumption no sign of decline
 - homemarket is important (sawnwood: 40% in 2008)
 - the role of companies not listed in the stock exchange is important (around 50 % of the production)
- Construction continues after current slump
- Big uncertainty as regards per capita consumption of wood products (Finland 1 m³, Sweden 0.8 m³, Europe average 0,15 m³)
- Relative competitiveness of the Finnish production? Russia, Baltics, Germany, Sweden
- The long-term prospects of wood products industry in Finland are better than that of pulp and paper industry

Conif. Sawnwood Consumption 1985-2006 and Projections to 2020



Data: FAOSTAT;
Projections:
Hetemäki &
Hänninen 2009

The per capita consumption levels and population growth are the determinants of the trends

Conif. Sawnwood Consumption in 2007 and projections for 2015 & 2020

<i>million m³</i>	2007	2015	2020
Finland	5,1	5,4	6,0
<i>change, % from 2007</i>		5,9	17,6
Europe	106	106	108
<i>change, %</i>		0,0	1,9
World	311	326	335
<i>change, %</i>		4,8	7,7

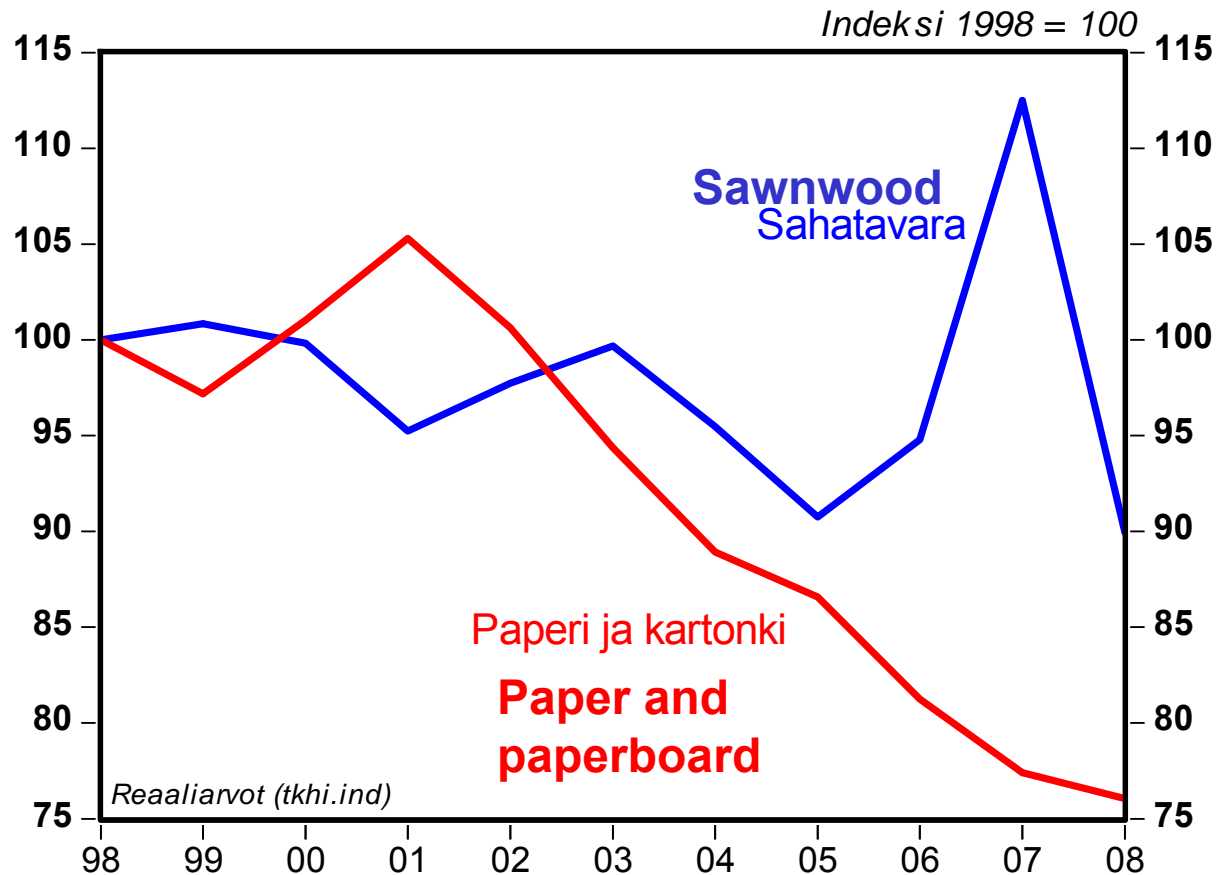
There are possibilities for higher sawnwood consumption levels than projected here, if:

- Concerns related to climate change result to higher level of wood products consumption
- For example, in Finland per capita consumption doubled from 1992 to 2001, i.e. in a very short time
- If similar development took place in Europe, and the average per capita consumption level doubled by 2020 (0,15 → 0,3 m³ per capita), coniferous sawnwood consumption would increase by 106 mil. m³ (to 212 mil. m³)
- This can be regarded as a theoretical possibility, since in practice such a rapid and significant change would drive prices up, and therefore, dampen the demand
- However, even an increase by 1/3 (0,15 → 0,2 m³) would increase consumption by 34 mil. m³

Finland's Wood Products Industry Production in 2007 and Projections to 2020

<i>million m³</i>	2007	2020	Change 2007 v. 2020	
			Quantity	%
Sawnwood	12.4	10.0	-2.4	-19 %
Plywood	1.4	1.5	+0.1	+1 %

Finnish Forest Products Real Export Prices 1998-2008



- Clear structural change in paper prices
- No clear change in sawnwood prices

Outlook for Wood Energy

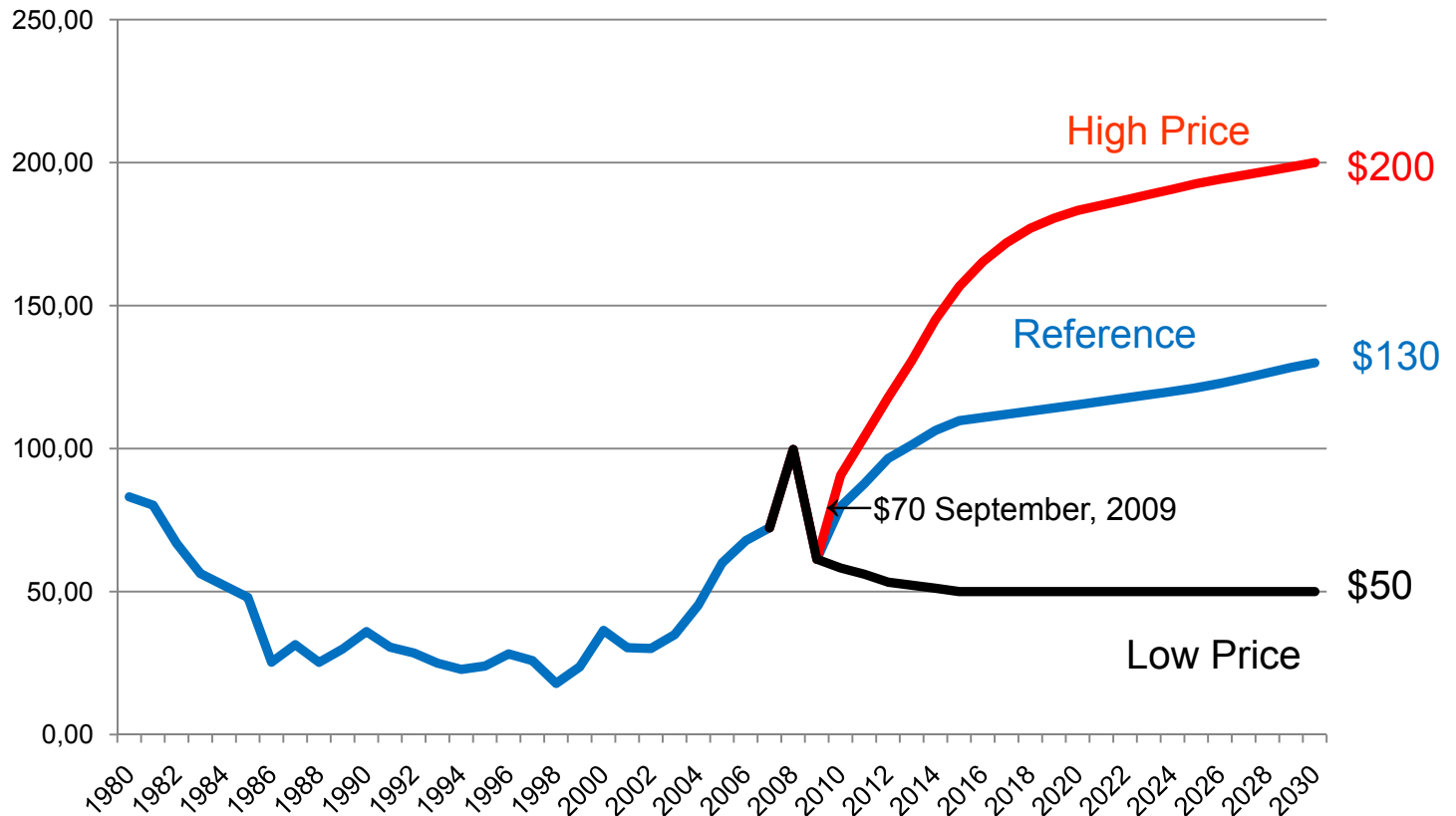
What Drives Wood Energy Development?

The higher the price of oil, the higher the demand for wood to energy



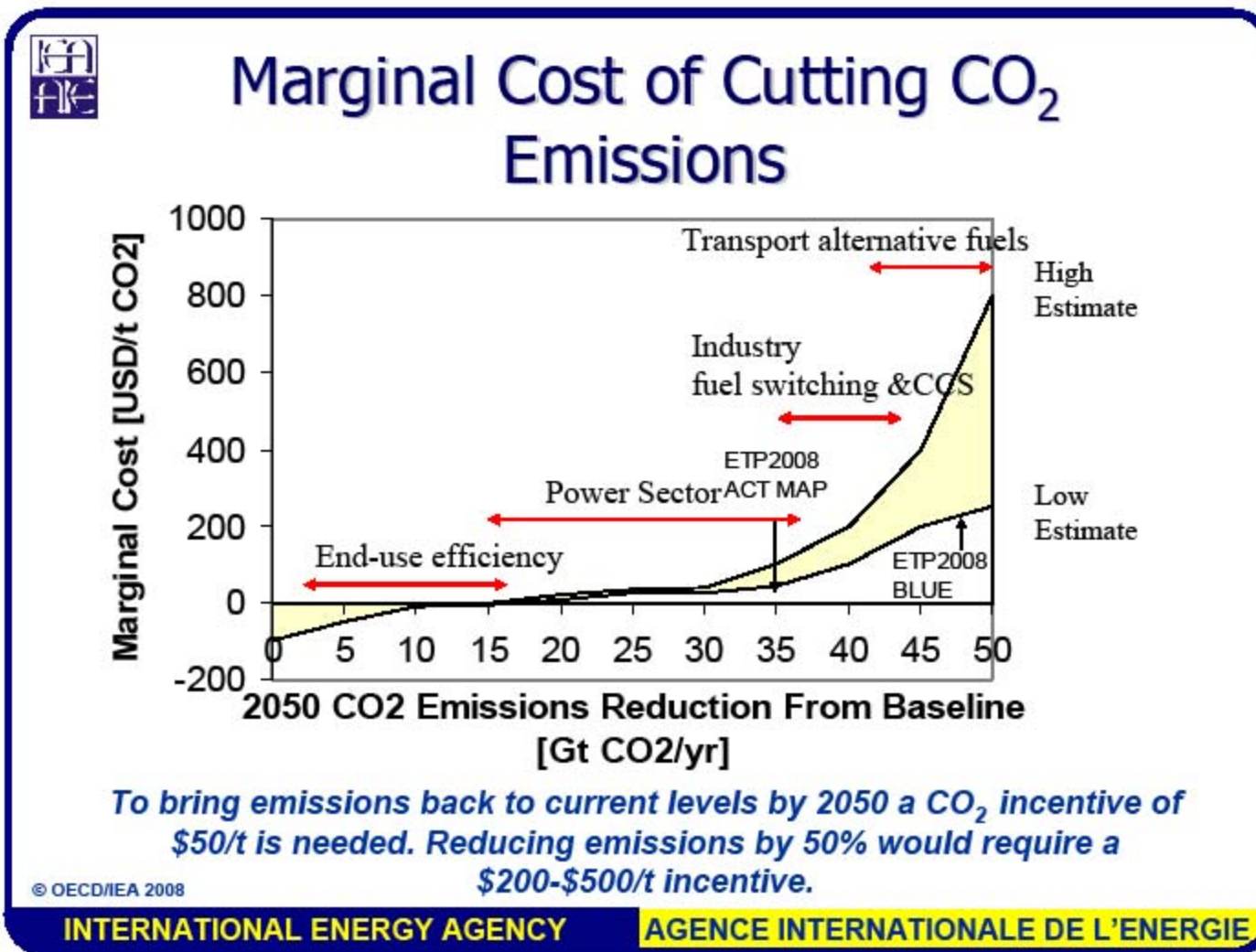
World oil prices are generally expected to be over \$100 after slump (2010)

nominal dollars per barrel



Data Source: USA EIA, International Energy Outlook, March 2009

The higher the price of CO₂, the higher the demand (and price) for wood to energy



Nord Pool price in the first week of Sep., 2009 was about 15 eur/tCO₂

The more the politics supports renewable energy use, the higher the demand for wood to energy

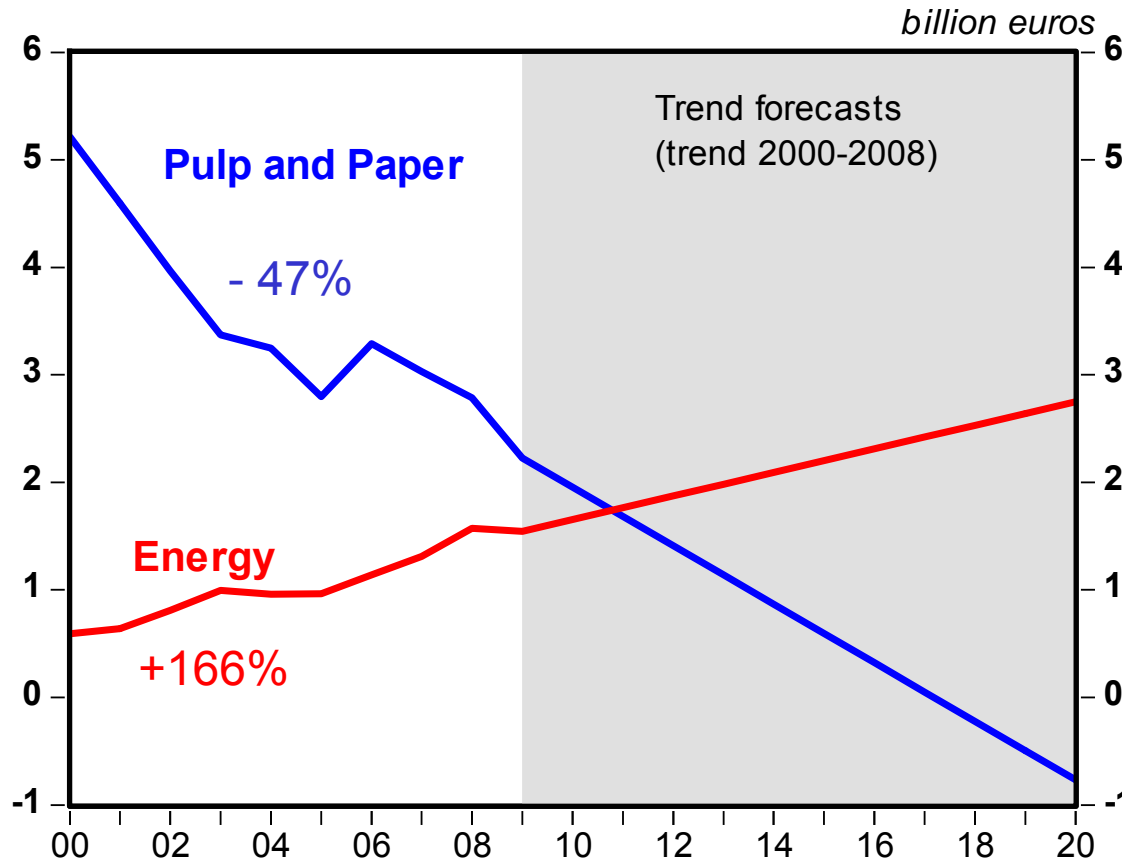
- ❑ Kyoto (Copenhagen 2009)
- ❑ EU energy policy 2020
- ❑ National energy policy
- ❑ Regional & agricultural policies
- ❑ Energy security policies (e.g. OPEC, Russia)

→ all the above policies tend to enhance wood energy production & consumption in Finland

Policy can speed-up wood energy production and consumption

But, even without policy measures, wood based energy production becomes profitable in the coming decade

Value Added in Finnish Pulp and Paper industry vs. selected Energy Industry*



In 2000, pulp and paper industry value added was 8.8-times higher



In 2008, it was 1.8-times higher

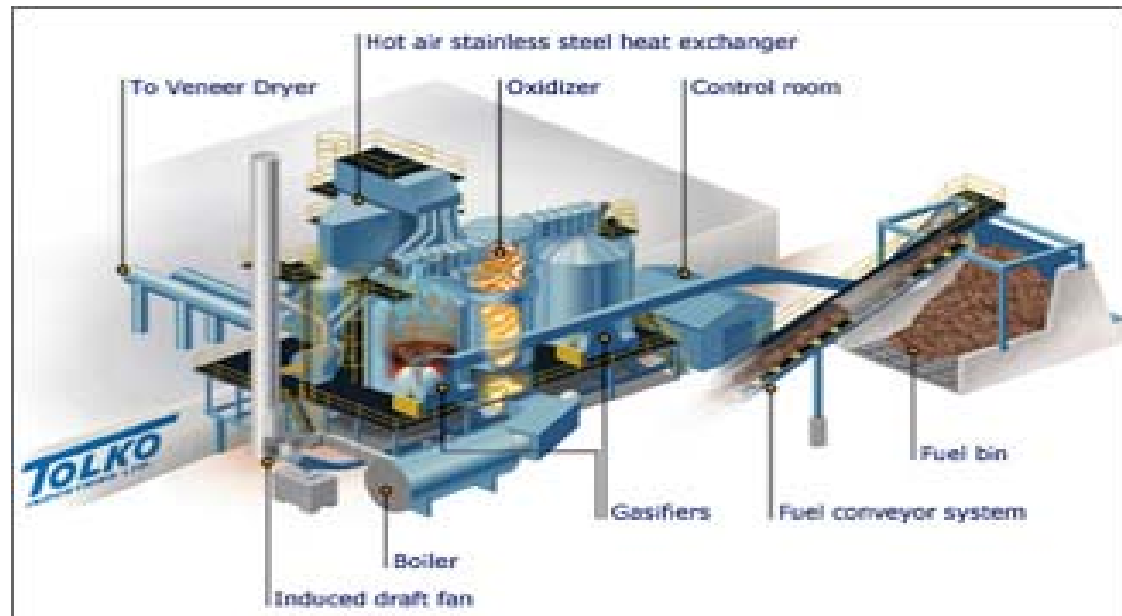


If the trend were to continue, in 2011 value added would be higher in the energy sector

**The selected energy industry covers sectors, which can potentially use wood in energy production (as a substitute for coal, oil, gas, peat). Thus, it does not include nuclear, water or wind power industries.*

Example: Plywood Mill Gasification Unit

- ❑ Tolko Industries Integrated plywood mill, BC, Canada
- ❑ About 200 000 m³ plywood /a. Gasification unit operated since May 2006
- ❑ Produces 63,5 mil. KWh syngas / a. (1900 detached house energy need in BC)
- ❑ Uses 25 000 tonnes wood residues (hog fuel from the mill)
- ❑ Annual fuel costs savings (natural gas displacement) CAD\$ 1.5 mil.
- ❑ Green house gas reduction 12 000 tonnes per year (12 000 x 15 eur = 180 000 eur)
- ❑ Investment costs \$5-\$10 mil. / expected capital repayment 2 – 4 years



Source: <http://www.nexterra.ca/>

Conclusions

- Pulp & Paper production in Finland declines
- Wood Products production in Finland declines from its best years in the past 10 years, but will stay around the level of 2008
- The use of wood for current forest products will decrease in Finland
- Wood energy production is the single biggest sector that grows in the Finnish forest sector
- Energy sector and forest sector become ever more integrated
- This is an opportunity also for the wood products industry

Example: What Can Be Done to Enhance Wood Products?

- How can the "green qualities" of wood products be turned to increasing consumption of wood products?
- Concrete-, steel- and plastics industries are major operators in Europe. Wood products industry is a weaker player
- Every industry seeks to lobby its own case. Each claims to be "green"!
- What could change this situation and have an impact on the wood products per capita consumption level in Europe?
- *Independent, authoritative and extensive* study on the relative merits of different materials and their combinations in construction as regards to the climate change (cf. IPCC, Stern report)
- UN or equally "independent" organization should co-ordinate
- How: National governments start to lobby for such a study

Thank you!