Energy, Environment and Forest Industry Competitiveness
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31.7.2006
Greenhouse gas emissions – Europe's relative share declining

Greenhouse gas emissions

MtCO$_2$-eq.

- Others
- Asia
- Latin. America
- USA
- EU-25
Global Paper and Board Production
Total 330 mill. tonnes

Production in countries which have a Kyoto target

North America: 100
South America: 15
Western Europe: 90
Rest of Asia: 75
Japan: 30

50% of paper and board production is in countries without requirements to limit greenhouse gas emissions -> emission trading costs cannot be put to end product prices

Source: Finnish Forest Industries Association, 2004
World's leading graphic papers producers

<table>
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<tr>
<th>Company</th>
<th>Capacity, mill. t/a</th>
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<td>Stora Enso</td>
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<td>UPM</td>
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<td>International Paper</td>
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<td>Abitibi-Consolidated</td>
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<td>Norske Skog</td>
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<td>M-real</td>
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<td>Bowater</td>
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Source: Jaakko Pöyry, UPM
UPM's annual electricity consumption is about 18 TWh corresponding with production of 1.5 times of modern new 1600 MW nuclear power plant.

Use of mill site fuels and heat is about 34 TWh.

Energy cost are a significant cost factor.
INTRODUCTION

Cost structure 2005 (excl. depreciation)
- Energy costs are about 10%

Not only wood and energy but also labour, chemicals, transport, other raw materials

Costs and expenses, total €8,057 million
Use of energy in 2005

Use of electricity 17.3 TWh

- Hydro Power 16%
- Mill site CHP 23%
- Nuclear power 23%
- Condensing power 5%
- Purchased electricity from market 33%

Use of fuels and heat 34.0 TWh

- Biofuels 51%
- Heat recovery 6%
- Peat 3%
- Coal 9%
- Natural gas 26%
- Purchased heat 2%
- Oil 3%

Own and co-owned resources
UPM's CO₂ emissions have dropped 25% during last ten years

UPM has reduced its CO₂ emissions by 25% during last ten years by investing in biofuel based energy generation and in energy efficiency.
UPM AND THE NEW BUSINESS ENVIRONMENT

Rapidly increasing cost of production inputs – especially energy

Energy market prices have increased significantly more than other costs
Energy market development in Europe

European electricity markets
- Price development

CO2, €/tn

Energy, €/MWh

Source: Reuters

Emission Trading

CO2, €/tn

Energy, €/MWh

EEX = Western Europe electricity exchange

Brent

CO2

Nord Pool

Source: Reuters
UPM press release
March 8, 2006

UPM to start an extensive programme to restore its profitability,
Efficiency improvement will involve all divisions and functions

- "At the same time, the cost of production inputs has dramatically increased and Asian and South American competition has entered the market. In this kind of business environment sustainable profitability improvement requires new kind of thinking and more drastic measures than before," says Jussi Pesonen, President and CEO of UPM."

- Regarding UPM's plan to invest in a new paper machine producing magazine (SC) papers in Continental Europe, the investment decision has been postponed to a later date. Energy price and availability and other infrastructure issues are still open and UPM will prioritize the company profitability programme launched today.

Big investment project in Europe postponed partly due to unpredictability of energy price development
Promotion of green electricity has increased green power's prices

Measures vary country-by-country but all include guaranteeing high price for green electricity generation paid by all consumers of energy pushing up costs of energy use.

- Measures increase energy producers' ability to pay for wood based fuels: this will have an impact to fiber and wood availability.
- Promotion of biofuels will accelerate the price and availability issues further.
Using wood in paper production generates more employment than energy use

Source: CEPI, 2004

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Source: CEPI, 2004
Climate Change
UPM's position

- UPM shares the widespread concern that the emissions of greenhouse gases (GHG) from human activities is leading to changes in the global climate

- Climate change is a global issue
  => to be fought of at global level

- Long-term sustainable actions
  => development
  => deployment
  => transfer of technology required to impact
    - climate change
    - energy security
    - air pollution
Climate Change
UPM's position

- Balance between competitiveness and economic growth is vital in policy making and measures
- Clear long term policies are necessity for capital intensive industry
- Global commitment needed
  => to make the policies more effective
  => to avoid "carbon leakage"
  => to avoid distortion of the relative competitive situation between
    - different countries
    - geographical areas
    - industry sectors
    - individual companies