

Focus on the future

Focus on Energy

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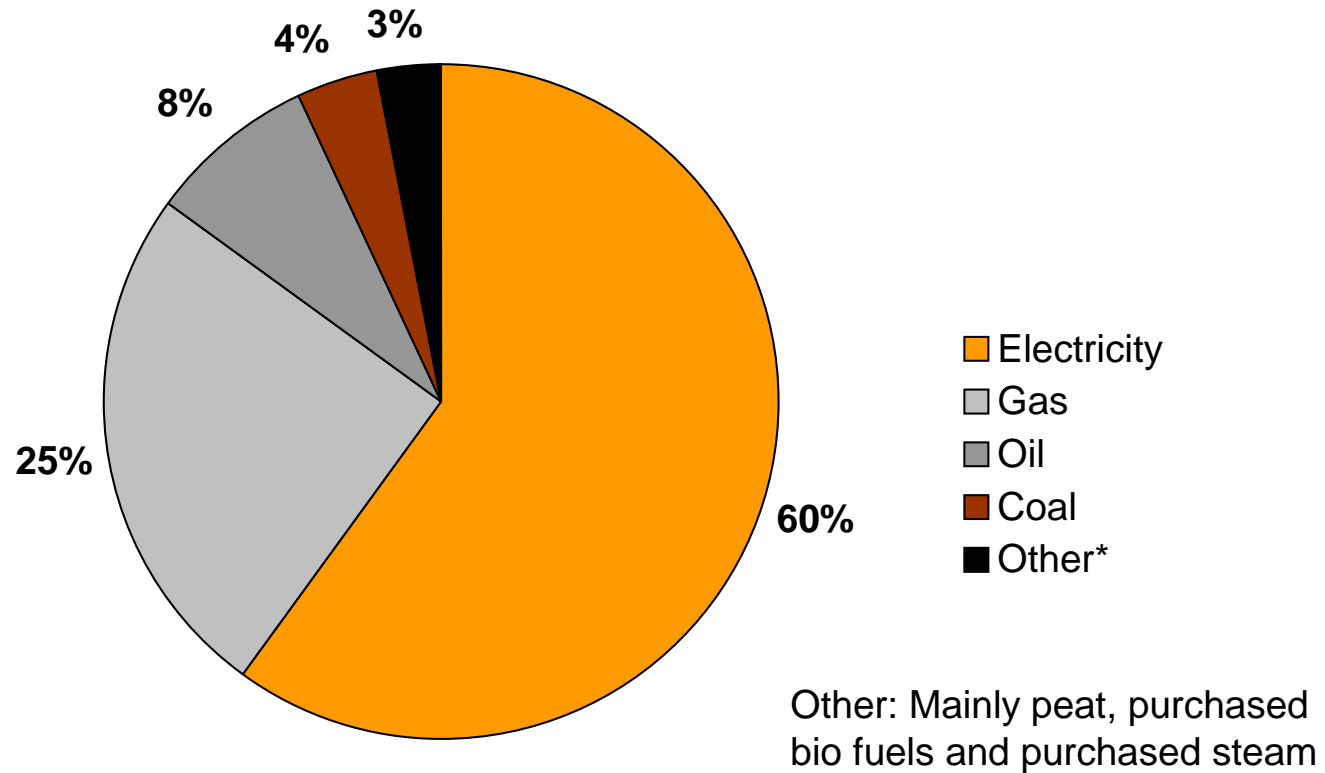
Kvarnsveden Mill, 30 November 2006

Focus on the future

Energy Profile

Energy Spend Specification 2005

Total: ~EUR 1 026 million

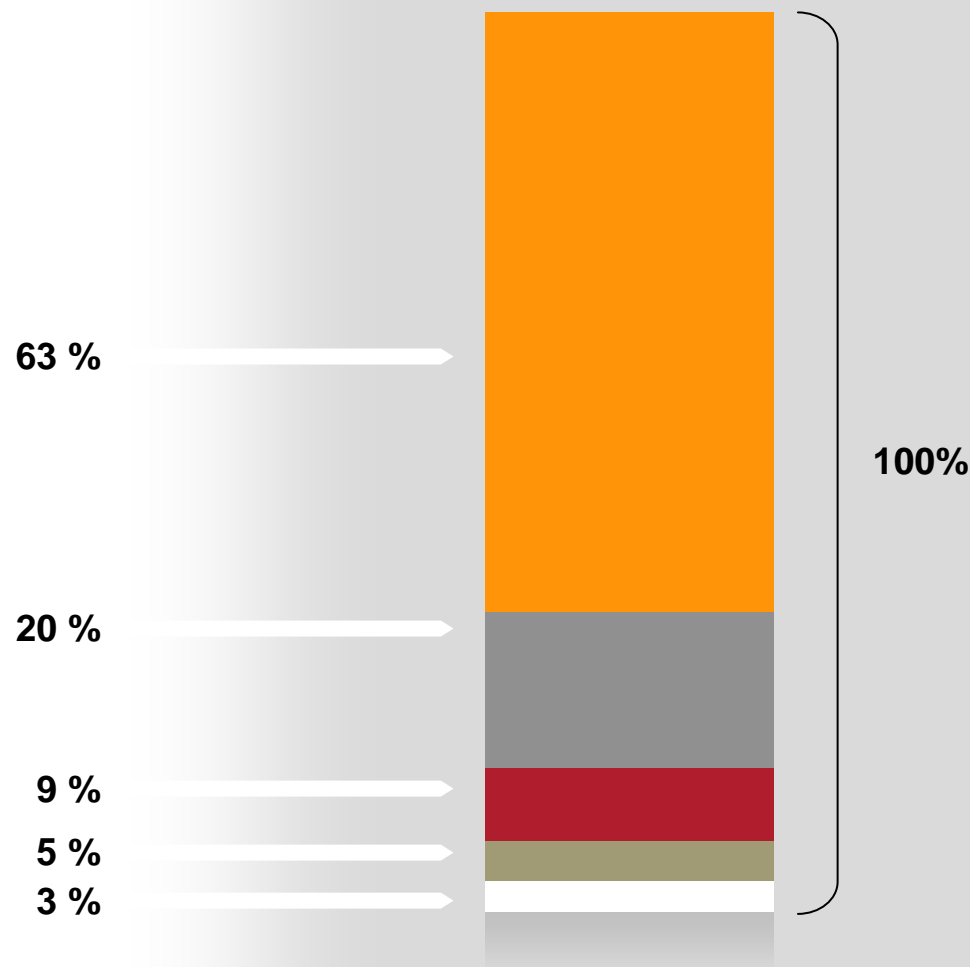


Total Annual Group Fuel Consumption

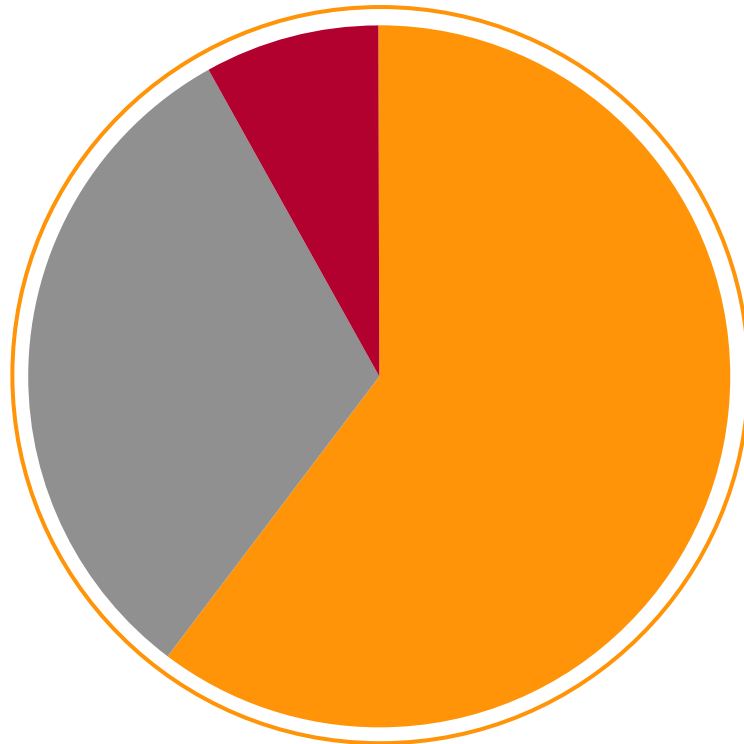
Internal use - electricity and steam generation

Total annual fuel consumption 57.5 TWh

● bio-fuels	36.2 TWh	63 %
● gas	11.5 TWh	20 %
● coal	5.2 TWh	9 %
● oil	2.9 TWh	5 %
○ peat	1.7 TWh	3 %



Electricity Procurement and Consumption 2005



Total consumption 23.9 TWh

- Stora Enso's own mills consumed 23.9 TWh of electricity in 2005
- Internal generation and PVO/TVO shares covered 9.5 TWh; 14.4 TWh was purchased externally
- Electricity self-sufficiency ~40 %

- External purchasing 14.4 TWh
- Internal generation 7.6 TWh
- Group resources 1.9 TWh

Energy Demand

Product category differences

- Processed wood products - *low energy intensity*
 - Main energy demand in kiln drying
- Market pulp – *wood to fibre and energy*
 - Modern pulp mills have fuel/heat and electricity to sell
- Chemical pulp *integrated* with paper or board production
 - Efficient combination of energy supply (pulp mill) and energy demand (paper/board mill)
- Printing papers – *wood for fibre using purchased electricity*
 - Steam supply partly by recovered TMP steam
 - High share purchased electricity
- Recovered fibre based paper/board – *recycling pulping energy*
 - Dependent on external fuel supply for steam and electricity generation

Energy Supply

Summary of regional differences

- Finland
 - High level of electricity self-sufficiency (including PVO shares)
 - Main purchased fuels: Natural Gas (4.5 TWh/a) and Peat (1.7 TWh/a)
- Sweden
 - Low level of electricity self-sufficiency
 - Long term fixed price electricity contracts
 - Main purchased fuel: Oil (1.2 TWh/a)
- Continental Europe
 - Mix of internal electricity generation and indexed contracts
 - Main purchased fuel: Natural Gas (6 TWh/a)
- North America
 - Long term electricity contracts for Wisconsin mills
 - Main purchased fuel: Coal (3.7 TWh/a)

Mill Energy Cost Ranges

Regional estimates 2006

Region	Type	Price (EUR/MWh)
Finland	Electricity	30-40
	Natural Gas	20-25
	Peat	6-10
Sweden	Electricity	33-42
	Oil	26-35
Continental Europe	Electricity	40-55
	Natural Gas	21-29
North America	Electricity	36-43
	Coal	4-8

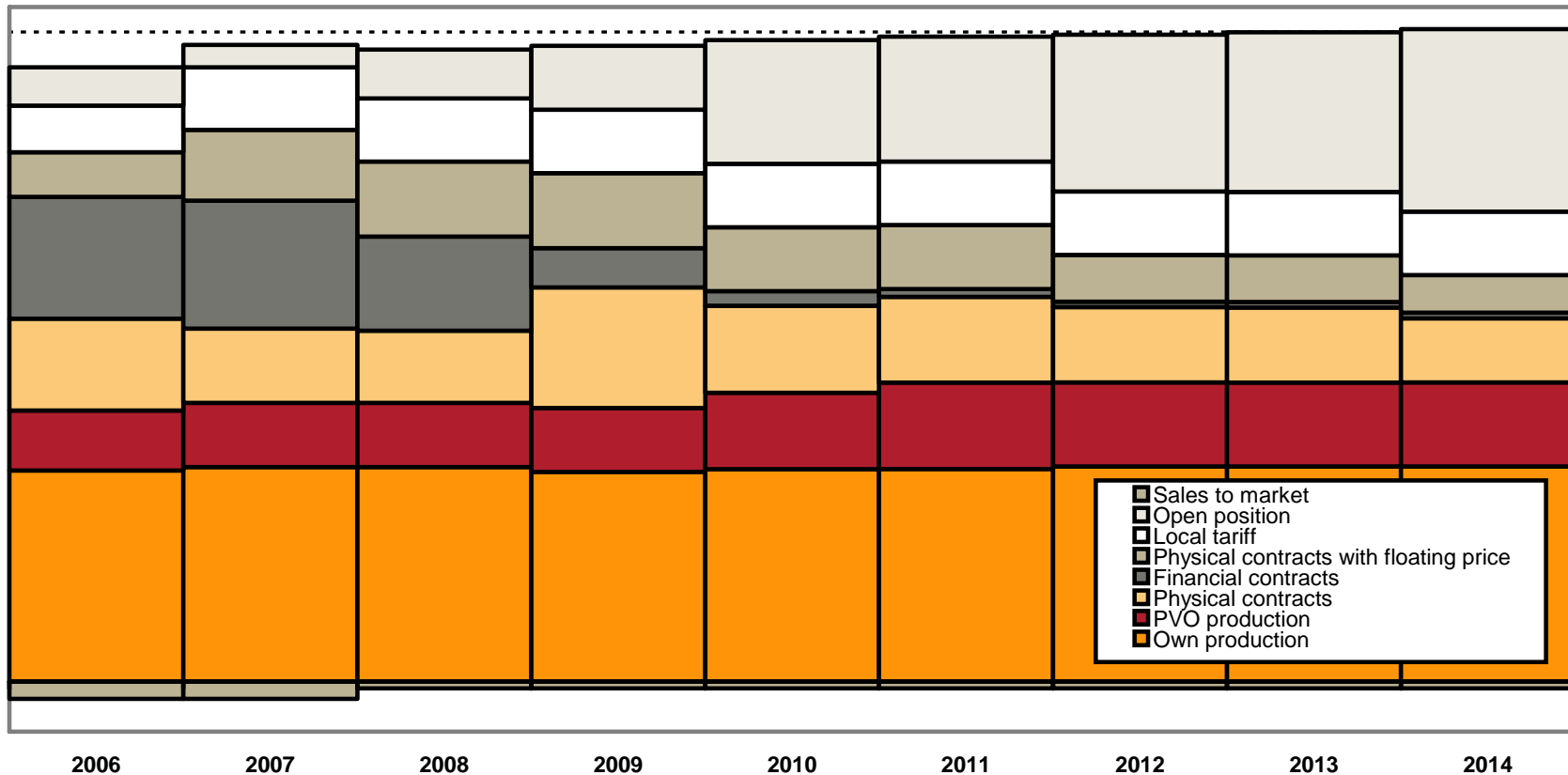
Expected Energy Cost Increases

2006-2007

- Cost increase slowing down compared to 2005-2006
 - Oil and CO₂-price forecast to be lower than 2006 actual
 - Electricity prices in Nordpol area expected to be lower 2007 vs 2006
 - Gas prices have come down significantly in the US
- Natural gas prices in Europe linked to fuel oil price with different delays (3-9 months) causing a lag in cost impact, both up and down
- Electricity market exposure for 2007:
 - Spot volume ~3 % (lower than for 2006)
 - Generation cost indexed contracts ~12 % (Germany & USA)
 - Regulated tariffs ~10 % (USA & Canada)

Electricity Consumption

Hedging profile



Stora Enso has a long time-horizon in its electricity procurement: ~80 % of forecasted consumption is contracted until 2015

Focus on the future

**Investments in Energy
Cost Reduction**

Group Energy Strategy

Reducing energy costs

Basic assumption: Energy will be a significant cost driver for the foreseeable future

- Competitive energy supply through:
 - Increased electricity generation at the mills
 - Develop cost-based supply
 - Reducing market volatility exposure
 - Long-term contracts
 - Hedging
 - Energy efficiency improvements
 - R&D to create new fuel opportunities

'Energy 2005' Project

Investment at Skoghall Mill 2003-2006

- Replacement of two old recovery boilers with a new state of the art boiler
- Replacement of old evaporation plants
- Converting of oil boiler to bio-fuel boiler
- Rebuilding of steam turbines

- Investment cost ~EUR 211 million; improvements better than expected due to increase in energy market prices
 - Oil consumption reduced by 35 000 tonnes in 2006, resulting in 100 000 tonnes reduction of CO₂ emission
 - In 2007, oil consumption will be reduced by another 25 000 tonnes and CO₂ emissions with another 70 000 tonnes
 - Electricity generation increased from 150 GWh/a to ~400 GWh/a

Energy Investments

Examples

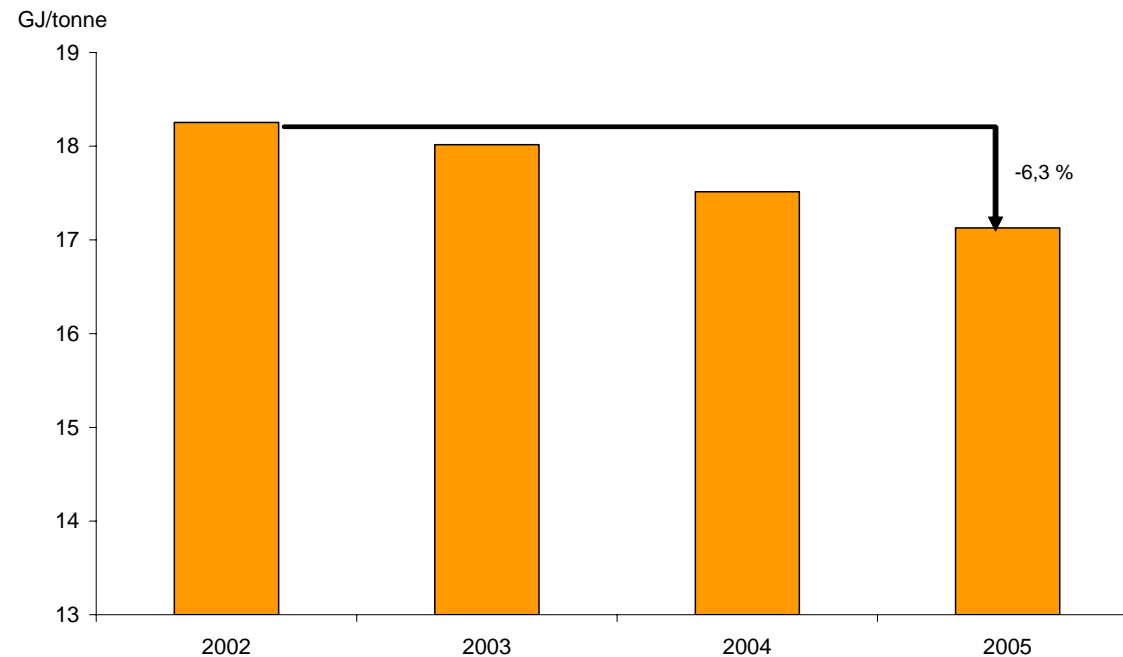
- Reducing exposure to natural gas/oil price, for example:
 - Replacing old gas-fired power plants with modern multi-fuel power plants
 - Fuels: bio-mass, coal, sorted waste fractions
 - Investment: EUR 70-100 million
- Increased electricity generation, for example:
 - Replacing old steam turbines with newer, more efficient turbines
 - High efficiency achieved when existing heat loads are utilised for higher electricity generation
 - Often based on increased use of bio-mass fuel or coal
 - Internally generated electricity replaces electricity purchased from the market
 - Investment: EUR 10-25 million

Energy Savings

Small investments - high returns

New actions become feasible with increasing energy prices

- Efficiency in internal steam and electricity generation
 - Fuel dryness
 - Efficiency analysis
- Reduced consumption in pulp, paper and board production
 - Electricity savings
 - TMP refiner control
 - Pumps and fans
 - Vacuum systems
 - Compressed air systems
 - Steam savings
 - Right pressure levels
 - Heat recovery
 - Peak demand shaving



External Energy Engagements

- Finland
 - Stora Enso owns 15.6 % of PVO
 - ~2.5 TWh cost-based deliveries in 2006
 - 145 MW in the Olkiluoto 3 project
- Sweden
 - Stora Enso one of the funding owners of BasEI AB
 - BasEI AB is a project development company
 - Ownership equally distributed among all 23 owners
 - Owners choose case by case on participation in each new project company and get ownership and deliveries according to share of capital in each project

Summary

- Electricity self-sufficiency ~40 %
- ~80 % of forecasted consumption is hedged until 2015
- Energy will be a significant cost driver for the foreseeable future
 - Focus on ensuring a competitive energy supply

Focus on the future

Appendix

Energy Consumption in Production Units

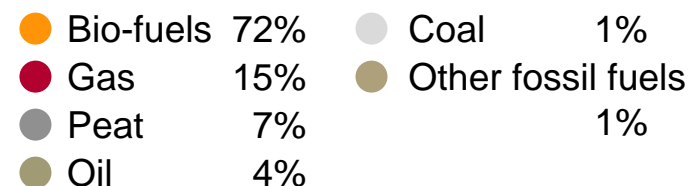
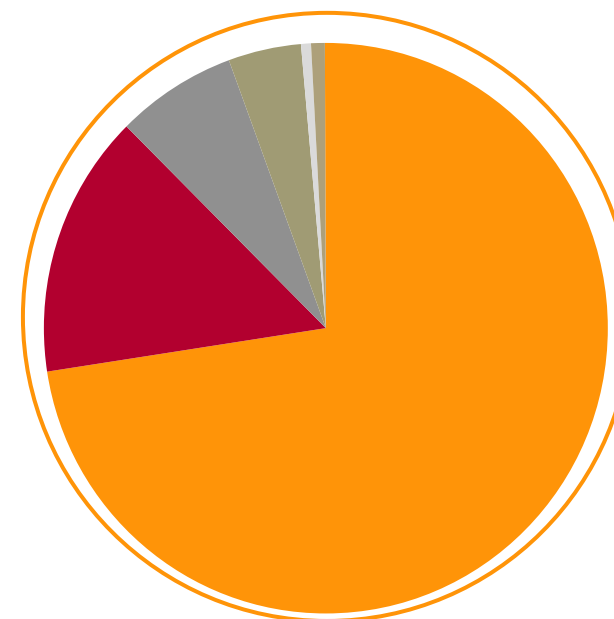
Finland - 2005

Total fuel consumption: 92 600 TJ

Electricity procurement and consumption

	TWh
Internal mill CHP	3.6
Group resources*	1.9
Ext. purchasing	2.4
Total procurement	7.8
External sales	0.4
Consumption	7.4

* Hydropower 0.4 TWh + Nuclear 1.3 TWh + Other 0.2 TWh



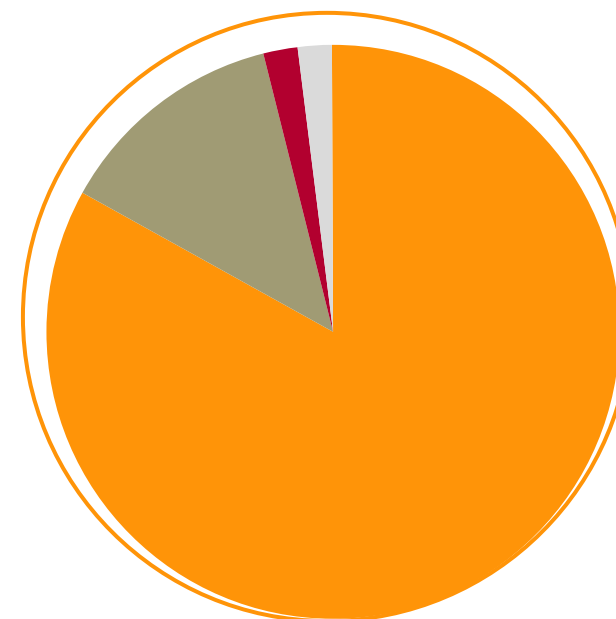
Energy Consumption in Production Units

Sweden - 2005

Total fuel consumption: 46 800 TJ

Electricity procurement and consumption

	TWh
Internal mill CHP	1.0
Ext. purchasing	5.2
Total procurement	6.2
External sales	0.03
Consumption	6.2



● Bio-fuels	83%
● Oil	13%
● Gas	2%
● Coal	2%

Energy Consumption in Production Units

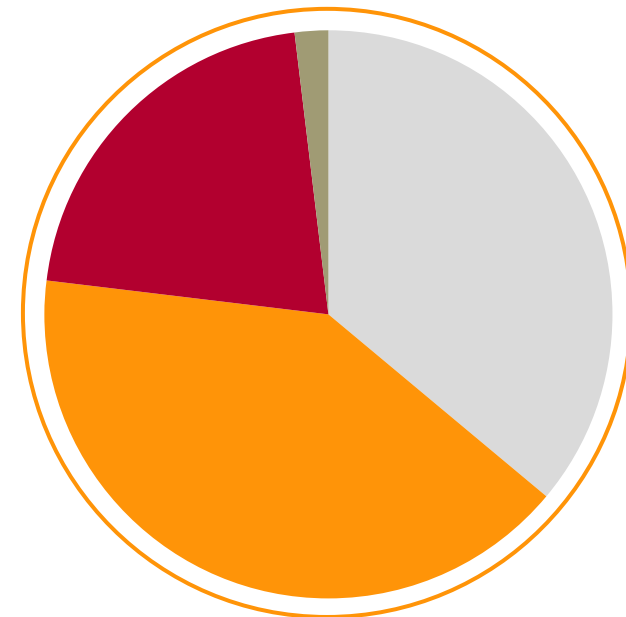
North America - 2005

Total fuel consumption: 32 100 TJ

Electricity procurement and consumption

	TWh
Internal generation*	1.2
Ext. purchasing	3.9
Total procurement	5.1
External sales	0.14
Consumption	4.9

* CHP 1.0 TWh + hydropower 0.2 TWh



Coal	36%
Bio-fuels	41%
Gas	21%
Oil	2%

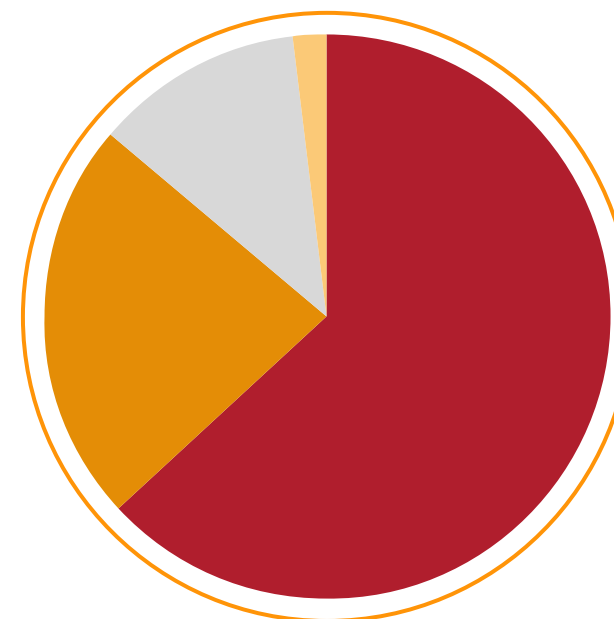
Energy Consumption in Production Units

Continental Europe - 2005

Total fuel consumption: 30 000 TJ

Electricity procurement and consumption

	TWh
Internal mill CHP	1.9
Ext. purchasing	3.8
Total procurement	5.7
External sales	0.7
Consumption	5.0



● Gas	63%
● Bio-fuels	23%
● Coal	12%
● Oil	2%