

Presentation 3.8: Mondi's perspective on energy efficiency and emission reduction

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Mondi's perspective on energy efficiency and emission reduction

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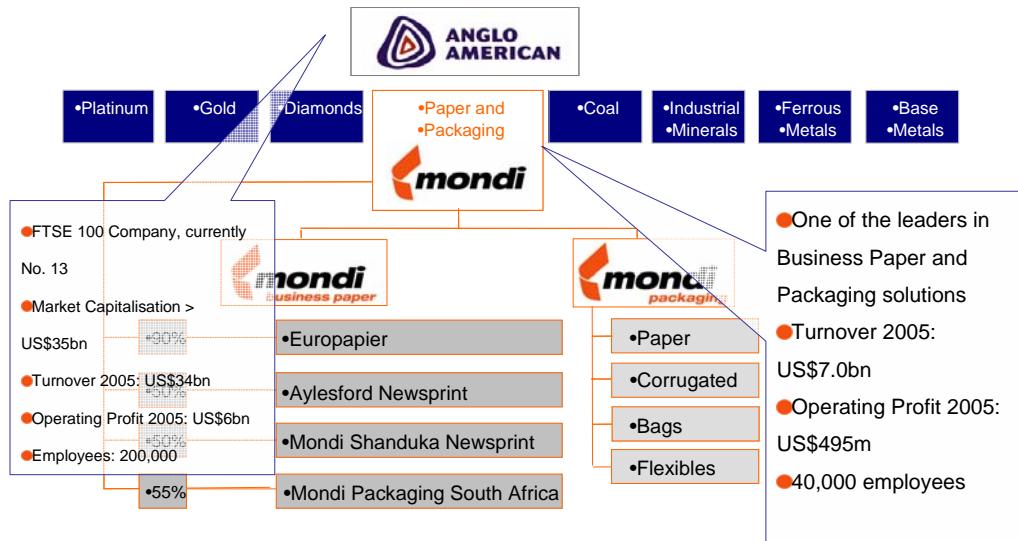


- **Mondi at a glance**
- **Mondi's current Energy Situation and CO2 Position**
- **Mondi's Perspective**
- **Final Statement**

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PAGE 2

Agenda



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PAGE 3

Agenda



● Mondi at a glance

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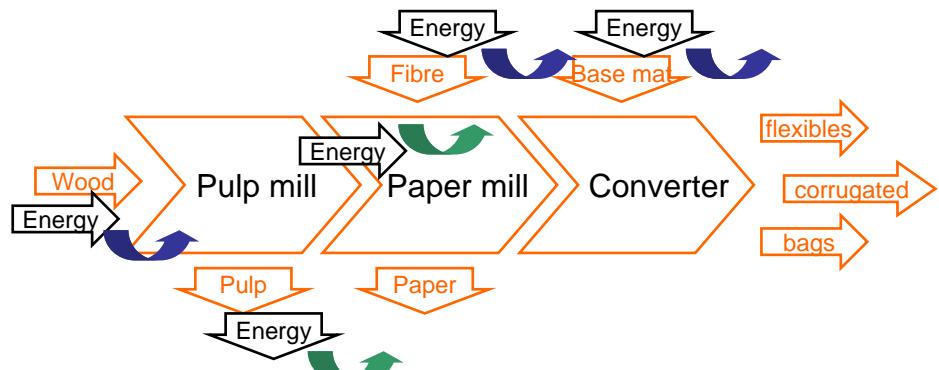
● Mondi's Perspective

● Final Statement

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PAGE 4

Energy in the Value Chain



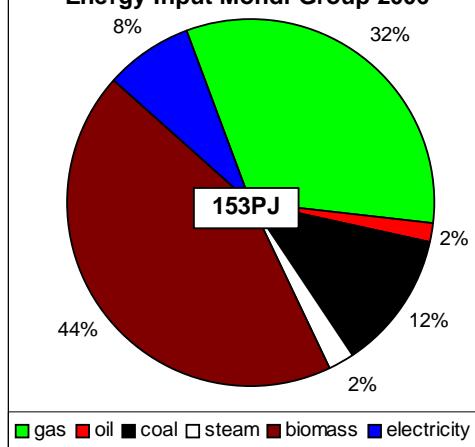
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PAGE 5

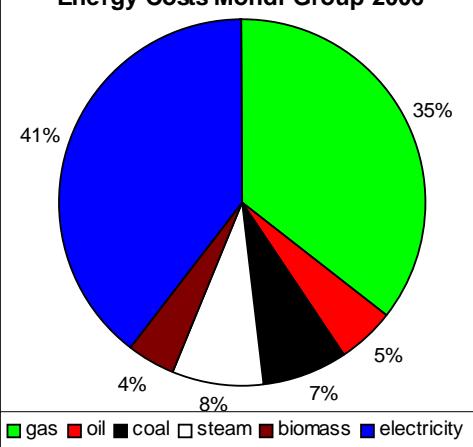
Energy Situation at Mondi



Energy Input Mondi Group 2006



Energy Costs Mondi Group 2006



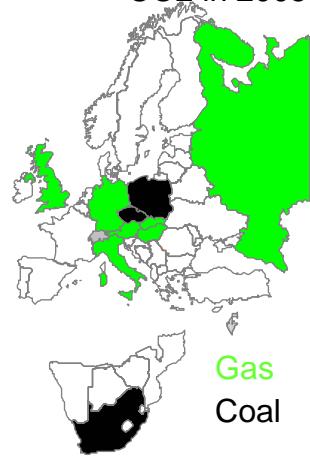
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PAGE 6

CO2 Emissions Paper Mills



Paper Mills emitted 3.90 mio t of fossil CO2 in 2005



Russia	1.67 mio t
South Africa	0.78 mio t
Czech Rep.	0.37 mio t
Poland	0.35 mio t
Austria	0.25 mio t
Slovakia	0.23 mio t
Germany	0.10 mio t
Hungary	0.07 mio t
UK	0.03 mio t
Italy	0.03 mio t
Sweden	0.01 mio t
Israel	0.00 mio t
Switzerland	0.00 mio t

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PAGE 7

Agenda



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PAGE 8

Reasons to reduce fossil CO2



- **Costs**
- **Volatility of CO2 value**
 - change of 1€/t EUA price results in more than 800k€ impact on Mondi's EBIT
- **Increase of product value**
 - customers demand CO2-neutral products
- **Sustainability**
 - investments need stable financial surrounding acceptance of production towards governments, NGOs and inhabitants

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PAGE 9

Possibilities to reduce fossile CO2

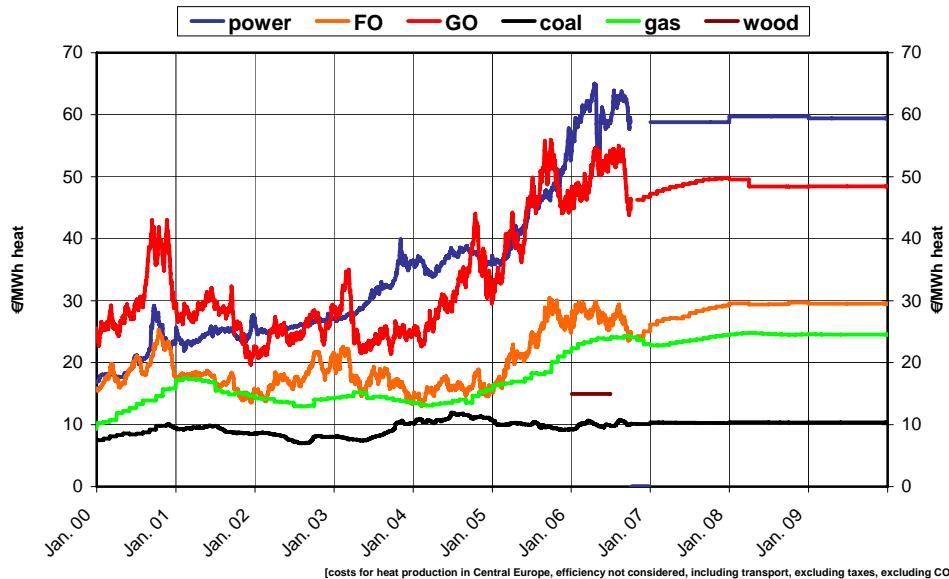


- **Reduction of Production -> no option**
- **Fuel switch**
- **Efficiency increase**

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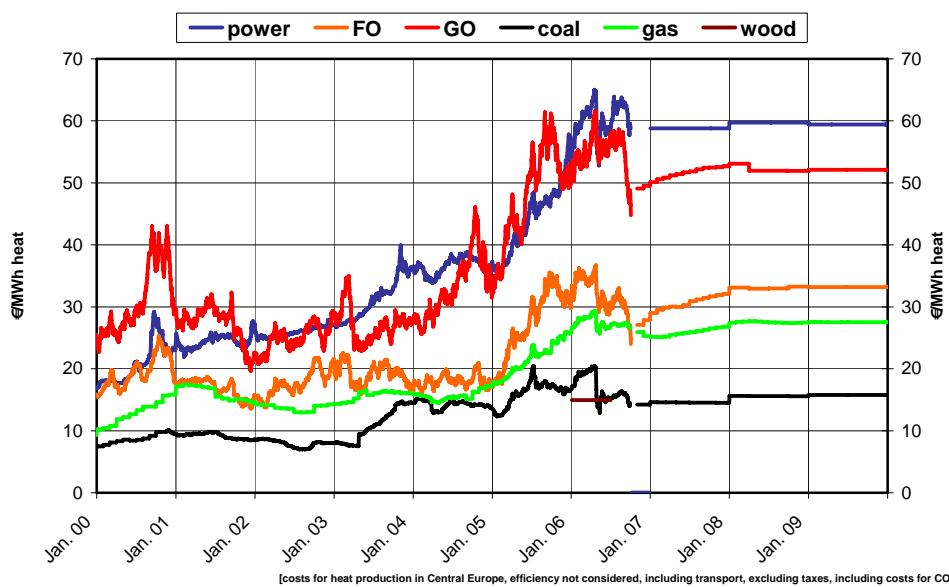
PAGE 10

Fuel switch “dirty”



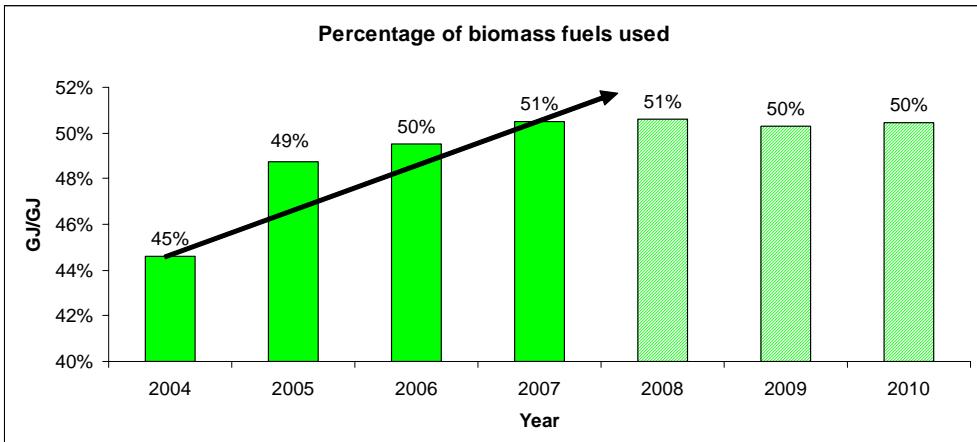
PAGE 11

Fuel switch “clean”



PAGE 12

Fuel switch, development



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PAGE 13

Efficiency - Demand Side



energy costs optimisation

supply side

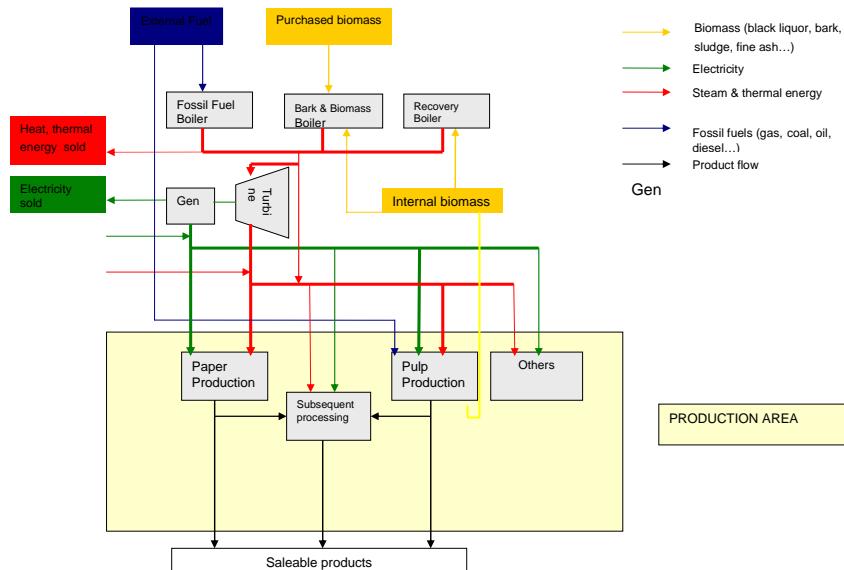
demand side



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PAGE 14

Efficiency - Energy Flowchart



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PAGE 15

Measures to increase efficiency



- Improve productivity (runability)
- Implement new technologies in pulp / paper production
- Investments in energy production units
- Investments in high efficient components
- Benchmarking
- Share of experience
- Cross learning
- Organisational adaptations
- Cost transparency

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PAGE 16

Example for efficiency increase



- **Rebuild of PM in Slovakia with new technology**

- Specific heat consumption: - 30%
- Specific power consumption: - 30%

- **Rebuild of PM in SA with the same technology**

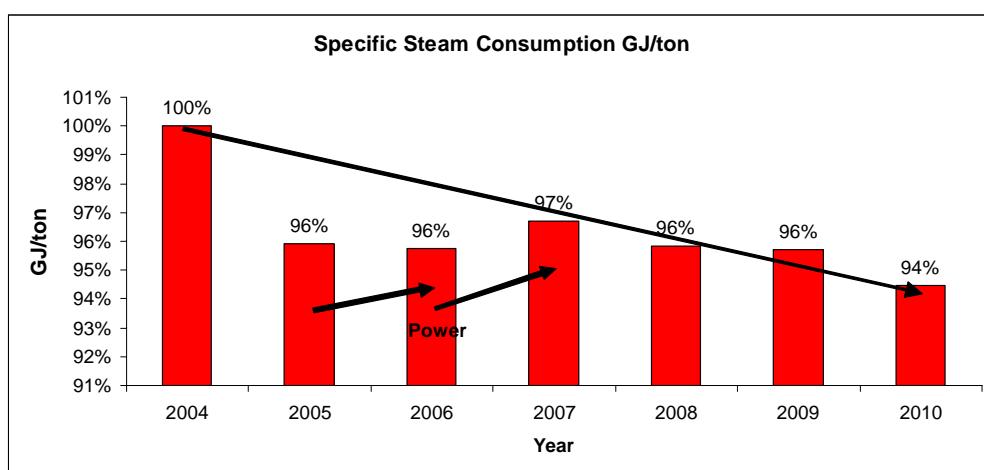
- **2 Awards in SA for digester rebuilt**

- NACA award in 2005 for improvement in air emissions
- ETA award for improvement in energy efficiency

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PAGE 17

Specific Heat Input

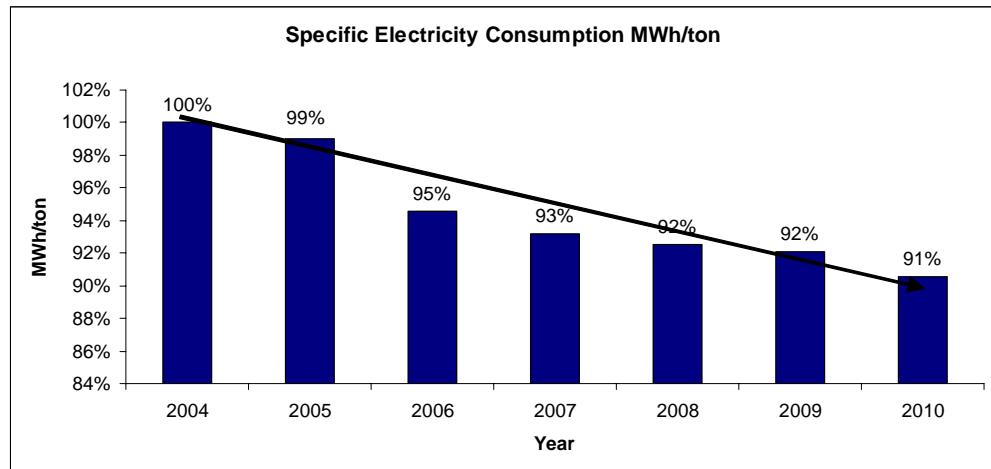


* Specific energy input based on saleable product of pulp and paper

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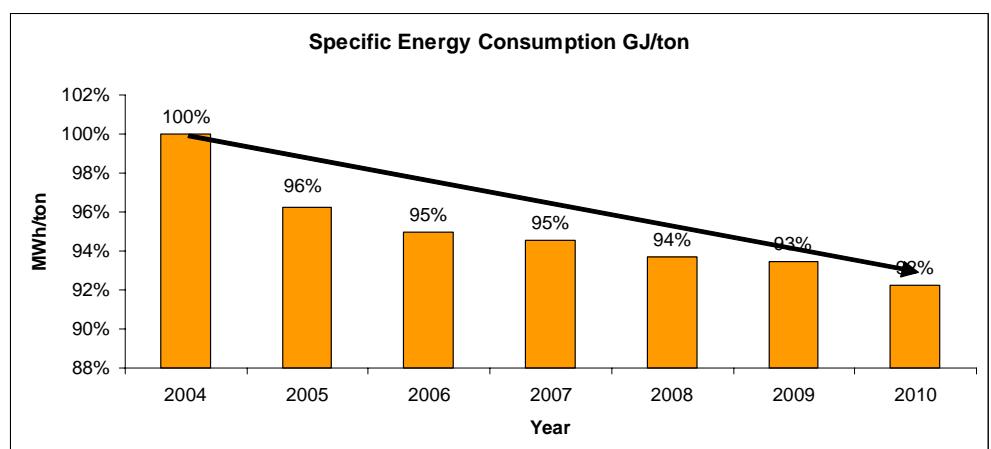
PAGE 18

Specific Electricity Input



* Specific energy input based on saleable product of pulp and paper

Specific Energy Input



* Specific energy input based on saleable product of pulp and paper

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PAGE 20

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PAGE 21

Final Statement



- We live in a challenging environment.
- Mondi was very successful in increasing efficiency and reducing GHG.
- Mondi will work further to become even cleaner by increasing efficiency and increasing its share of RES where feasible.

All we need is investment friendly stable regulatory surroundings.

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PAGE 22