



**Sustainable Gravure Paper**  
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# Content

- Sustainability of paper
- Climate Change and forest industry
- How to meet the challenge?
- Case UPM

# Sustainability - Gradually more important factor of gravure products



- Facts of gravure paper sustainability
  - Gravure is in general an environmentally friendly process
    - *Recycling of substances in printing process*
    - *Printed matter can be de-inked*
    - *Recyclability of printed material ie. paper itself*
    - *Increasing use of recycled fiber in the paper*
    - *Reduced basis weight*
    - *Reduction of water and energy usage in paper production*
- What a paper maker can do to improve paper sustainability?
  - Paper manufacturing creates app. 70 % of gravure paper CO2 emissions

# What a paper maker can do to improve sustainability of paper?



- **Sustainably managed forests**

- **Energy solutions based on**
  - Reduction of fossil carbon dioxide emissions
  - Improved energy efficiency
  - Energy production utilising renewable fuels

- **Effectively organised recycling**

# What is Sustainable Forestry?

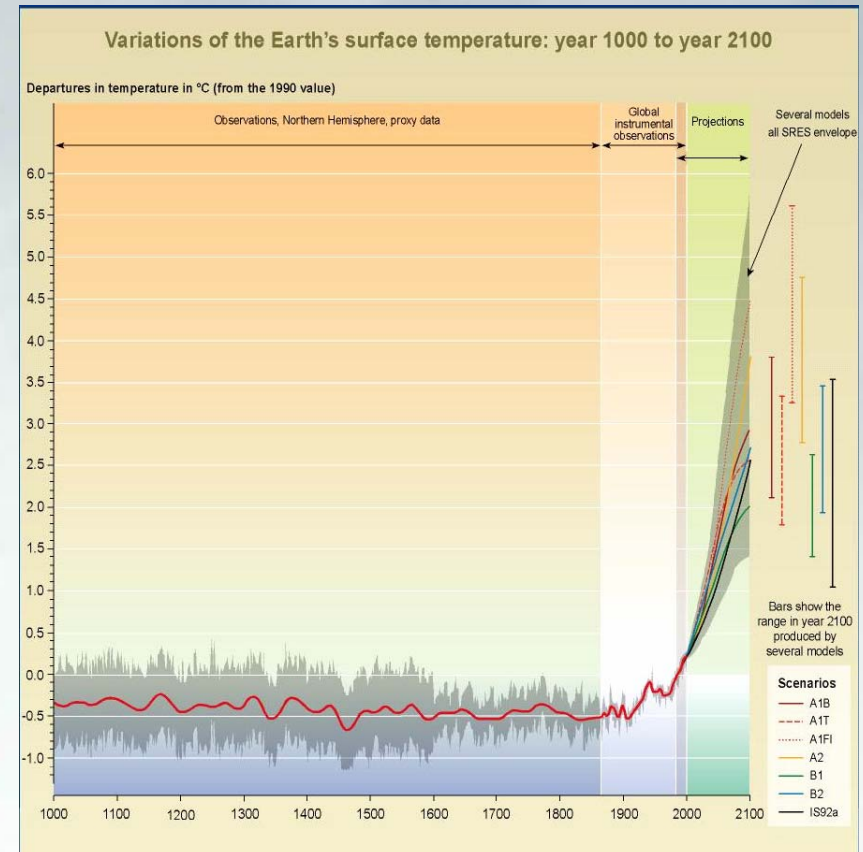
- Regeneration to promote growth of forests
- Responsible wood sourcing
- Promotion of sustainable forestry by
  - Knowing the source of wood
  - Chain of custody
  - Forest certification
- Management of forest biodiversity





# Climate Change is a global challenge

- **Common agreement of Climate Change process globally**
- **Policies and public opinion direct to actions reduce greenhouse gases (GHG)**
- **Approaches to mitigate climate change differ**
  - **Asia Pacific Partnership counts on technology development**
  - **Kyoto protocol seeks impact by emission capping**
  - **EU has set targets for 2020**
    - *20% share of renewable energy*
    - *20% reduction in CO<sub>2</sub> emissions*
    - *20% reduction in energy consumption*



Source: IPCC

# Everyone wants to be Carbon Free



## CarbonFree™ Light Bulbs



**"Look, no carbon footprint!"**

**"Volkswagen Forest" Being Planted To Offset Carbon Footprint of Company's Vehicles**

**"It's carbon judgment day:** The news is constantly full of talk about 'carbon footprints' - but do you actually know how big yours is? Find out whether you're a green angel or a carbon criminal with Mark Lynas's step-by-step guide"

**"If you're not neutral, you're moving backwards."**

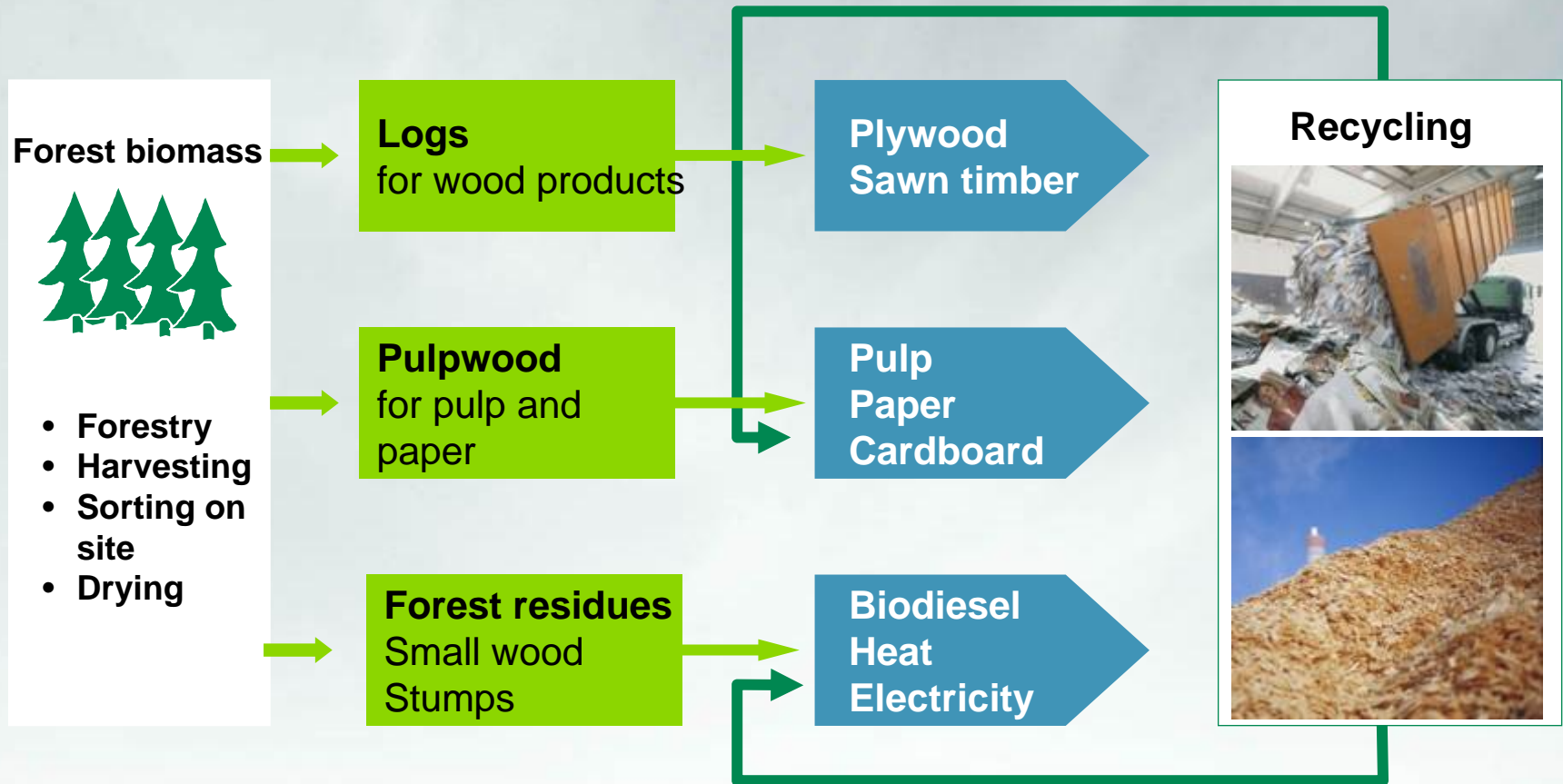
# Tools to improve sustainability of paper products in a challenging environment



- Efficient use of raw material maximises the gain from forests sustainably
- Combined Heat & Power (CHP) generation improves energy efficiency
- Continuous improvement in specific energy consumption
- Recycling of fiber maximises raw material utilization
- Ability to integrate energy generation and raw material utilization => New business opportunities



# Raw materials used completely to maximize the gain





## UPM's energy approach

- **UPM has systematically invested in and developed energy solutions to reduce CO<sub>2</sub> emissions**
  - 900 m€ during the last 10 years in 10 biomass power plants where 2 under construction
  - Improved energy efficiency of production
  - CHP production on mill sites using side products as fuels in energy production
  - Use of forest-derived fuels
  - Use of hydropower
  - Use of nuclear power

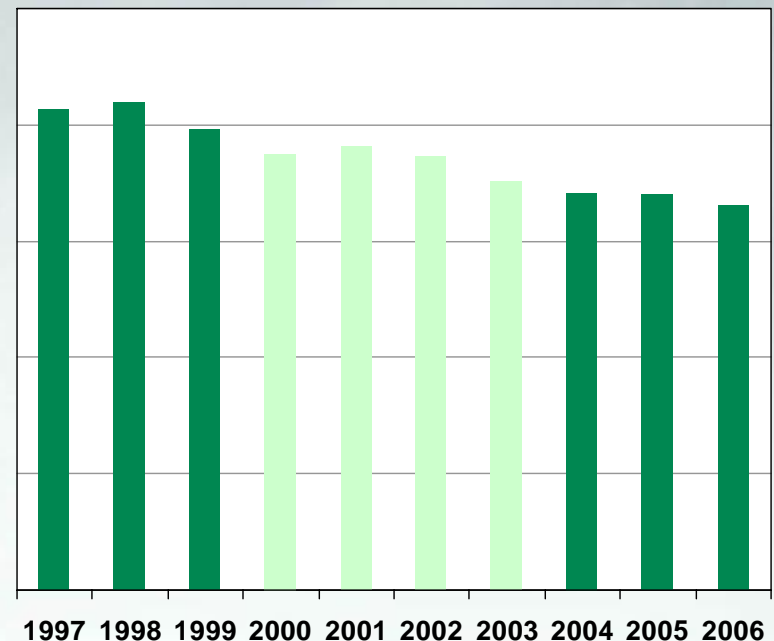


## UPM's energy efficiency has improved

### Transfer of best practice improves energy efficiency

- Energy efficiency of the units has been assessed regularly since 1997
- 20% reduction in electricity consumption per tonne of paper produced since 1997

### UPM's electricity consumption per tonne of paper produced



# UPM's carbon dioxide emissions per tonne of paper produced have decreased



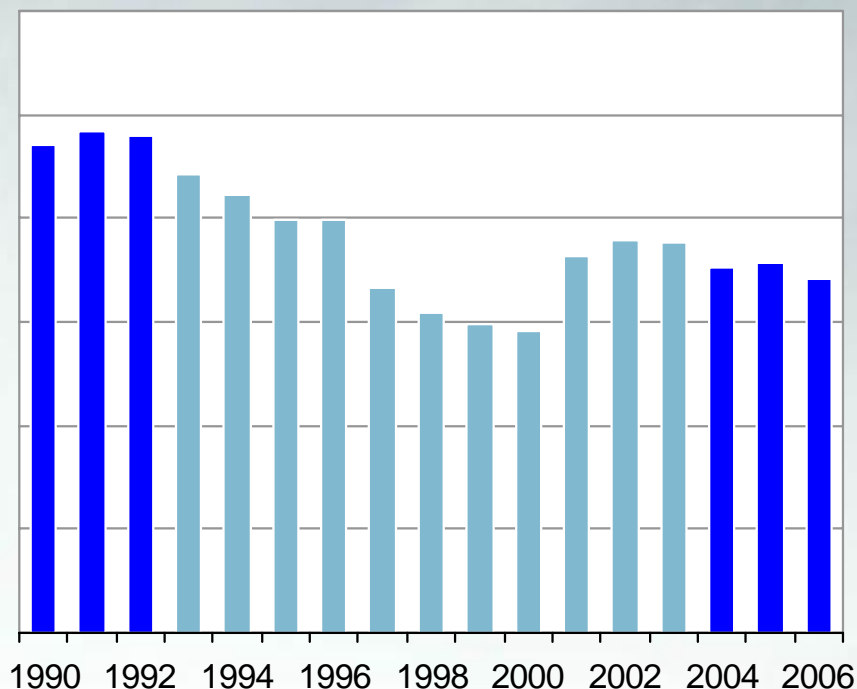
Carbon dioxide emissions per tonne of paper produced have

UPM's carbon dioxide emissions/ tonne of paper produced

Decreased:

in Finland - 56 %

UPM globally - 27 %



- \* UPM aquired
- Changshu ja Miramichi mills in 2000
- Haindl mills in 2001
- UPM started modernisation of recovery plant in Pietarsaari in 2002

Source: IEA



## UPM's main objectives in energy

- To secure sustainable, competitive, reliable and flexible energy supply to own mills and to provide stable energy prices within the Group on long term
- To manage of the Group's CO<sub>2</sub> balance
- To utilize synergy benefits between wood and biomass procurement
- To continuously improve energy efficiency in energy supply and consumption
- To follow the technology development and utilize new energy technologies when they are feasible



**UPM aims to increase self-sufficiency in energy**



## **Biomass Utilization in Production of Transportation Fuels**



## UPM's BTL project

- UPM announced in October 2006 that it intends to become a significant producer of renewable biofuels, like biodiesel
- UPM cooperates with partners on the development of the technology for biomass gasification and synthesis gas cleanup
- Synergies between raw material sourcing, pulp and paper manufacturing allow integrated biodiesel production adding value to a production chain
- The main raw material in UPM's biodiesel production will be wood based biomass
- Biodiesel production will be located adjacent to existing UPM pulp and paper mills enforcing synergies in the value chain

# Climate Change creates challenges but forest biomass helps provide solutions



- Forest Industry has a good position related to Climate Change mitigation
  - Renewable raw materials
  - Renewable and recyclable products
  - Integrated mill sites enabling combination of energy and paper production and effective utilization of side products
- Policies and measures to increase renewable energy production will impact on raw material price and availability for forest industry
- Additionally growing energy demand, need for infrastructure investments, emission trading etc. will increase energy price and will impact on its availability



**Forest Industry has challenges,  
but it also has means to meet them**

# Sustainable production is a competitive advantage for a paper maker already today



**Forests managed sustainably** taking care of their regeneration and biodiversity

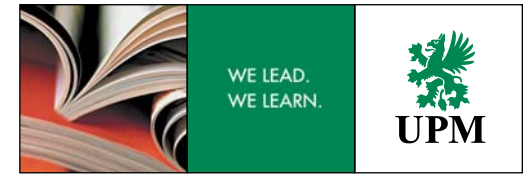
**Renewable raw material used responsibly**

- Raw material is not wasted but used efficiently
- Side products are utilised as raw material and in energy generation
- Products are recycled
- The use of raw material widened through new product innovations like biodiesel

**Increased use of renewable and carbon dioxide free fuels**

**Improved energy efficiency**





## Forward-looking statement

It should be noted that certain statements herein which are not historical facts, including, without limitation those regarding expectations for market growth and developments; expectations for growth and profitability; and statements preceded by "believes", "expects", "anticipates", "foresees", or similar expressions, are forward-looking statements. Since these statements are based on current plans, estimates and projections, they involve risks and uncertainties which may cause actual results to materially differ from those expressed in such forward-looking statements. Such factors include, but are not limited to: (1) operating factors such as continued success of manufacturing activities and the achievement of efficiencies therein, continued success of product development, acceptance of new products or services by the Group's targeted customers, success of the existing and future collaboration arrangements, changes in business strategy or development plans or targets, changes in the degree of protection created by the Group's patents and other intellectual property rights, the availability of capital on acceptable terms; (2) industry conditions, such as strength of product demand, intensity of competition, prevailing and future global market prices for the Group's products and the pricing pressures thereto, financial condition of the customers and the competitors of the Group, the potential introduction of competing products and technologies by competitors; and (3) general economic conditions, such as rates of economic growth in the Group's principal geographic markets or fluctuations in exchange and interest rates. For more detailed information about risk factors, see pages 4-8 of the company's annual report on form 20-F for the year-ended 31 December, 2005 under "Item 3. Risk Factors".

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