APPLICATION AND BENEFITS OF ECO-DESIGN STANDARD – CASE UPM

SFS Seminar on Standards
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UPM Environmental Intelligence
### UPM today

- **24,000 employees**
- **Sales exceed 10 billion euros in 2011**
  - Production in 16 countries, world-wide sales network
  - Listed in the NASDAQ OMX Helsinki stock exchange

#### Energy and pulp
- 4,200 employees
  - Hydro, nuclear and condensing power
  - Biofuels
  - Pulp mills
  - Plantation operations in Uruguay
  - Timber and Living
  - Forestry and biomass businesses
  - Wood sourcing

#### Paper
- 14,000 employees
  - Magazine papers
  - Fine papers
  - Newsprint
  - Selected speciality papers

#### Engineered materials
- 5,200 employees
  - Label
  - Plywood
  - UPM ProFi

February 2012
Regulation, Environmental trends, Customers, NGOs, Technical development Company policy, Strategy

UPM Biofore

Forest industry

Biofore industry

BIO
future orientation, sustainability and good environmental performance

FORE
forest & being at the forefront
Regulation, Environmental trends, Customers, NGOs, Technical development
Company policy, Strategy

UPM Biofore ➔

UPM Principles

Products
- Take care of the whole lifecycle

Climate
- Create climate solutions

Water
- Use water sustainably

Forest
- Keep forests full of life

Waste
- Reduce, reuse & recycle!
### Environment 2020 targets

#### Key trends: Climate change and Resource scarcity

<table>
<thead>
<tr>
<th>Key area of responsibility</th>
<th>Measure</th>
<th>Target</th>
<th>Achievement 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products</td>
<td>Taking care of the entire lifecycle</td>
<td>• Renewable raw materials • Recyclable or biodegradable products • High share of certified products • Third-party environmental eco-labels • Lifecycle assessment</td>
<td><img src="image" alt="Progress in target achievement" /></td>
</tr>
<tr>
<td>Climate</td>
<td>Creating climate solutions</td>
<td>• Improve energy efficiency • Maximise use of carbon-neutral energy • Increase biobased energy</td>
<td><img src="image" alt="Progress in target achievement" /></td>
</tr>
<tr>
<td>Water</td>
<td>Using water responsibly</td>
<td>• Best-in-class(^2) water footprint and effluent quality • Net water consumption</td>
<td><img src="image" alt="Progress in target achievement" /></td>
</tr>
<tr>
<td>Forest</td>
<td>Keeping forests full of life</td>
<td>• Maximise share of certified fibre and meet UPM biodiversity programme targets for managed forests</td>
<td><img src="image" alt="Progress in target achievement" /></td>
</tr>
<tr>
<td>Waste</td>
<td>Reduce, reuse and recycle</td>
<td>• Minimise solid waste to landfill • Reuse waste</td>
<td><img src="image" alt="Progress in target achievement" /></td>
</tr>
</tbody>
</table>

\(^2\) Best-in-class = leading the industry sector  
\(^3\) Includes paper, timber, plywood  
\(^4\) Numerical targets relevant for pulp and paper production
PRODUCT STEWARDSHIP

Continuous improvement and eco-labels

MORE WITH LESS!

WATER USED
-35%

PRODUCTION WASTE
-90%

CARBON EMISSIONS
-90%

CERTIFIED WOOD FIBRE
+100%

The Economist 1992 – 2012
UPM Paper / Environmental footprint
### Eco-labels

Environmental labels support consumer choices

<table>
<thead>
<tr>
<th>LABEL</th>
<th>Recovered fibre use</th>
<th>Wood raw material</th>
<th>Chemicals</th>
<th>Energy use</th>
<th>Emissions</th>
<th>Waste management</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEFC</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FSC</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU Ecolabel(^1)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nordic Swan(^2)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>German Blue Angel</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austrian Eco-label</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

1) No EU Flower criteria available for label paper or industrial packaging paper.
2) All papers that are awarded with the EU Ecolabel are automatically also approved for Nordic Swan.
Why Eco-design?

Value-added products and services for customers

Eco Labels

Eco Design

Economic performance

Environmental performance

Compliance

Risk Management

Eco Labels

Eco-design in practice - Cradle to Cradle

PRODUCTS

SUPPLIERS
- Code of conduct
- Maintaining biodiversity
- Certified wood & Chain of custody
- UPM Restricted Chemical Substances List
- Environmental performance

CUSTOMER & CONSUMER
- Customer & consumer education
- Collection systems
- Reuse & recycling processes
- New services etc

ECO-DESIGN
- Raw materials
- Manufacturing
- Product
- End use
- After life

UPM MILLS
- Low carbon energy (bioenergy)
- Continuous improvement of performance

Ecolabels

DJSI (economic, social and environmental performance during life cycle)
UPM’s eco-design concept

1. Selection of low impact materials
2. Reduction of material usage
3. Optimization of production techniques
4. Optimization of distribution systems
5. Reduction of impact during use
6. Optimization of initial lifetime
7. Optimization of end-of-life system
8. New concept development
UPM Grada™

- Renewable
- Non toxic

- Revolutionised form pressing
- Significantly intensified processes
- Minimised energy consumption
- Minimised production waste
- Improved transport efficiency
- Lower carbon footprint
- Versatility enables prolonged lifetime
- Reusable
- Recyclable
- Biodegradable
- Safely incinerable

PRODUCT

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ECO-DESIGN TOOLS

LCAs role in eco-design

- $\sum$ & transportation $\Rightarrow$ ecological footprint

In practise = carbon footprint
ECO-DESIGN TOOLS

LCAs role in eco-design

• \( \sum \) & \( \text{truck} \) \( \rightarrow \) ecological footprint

In practise = carbon footprint

Climate

Create climate solutions
ECO-DESIGN TOOLS

LCAs role in eco-design

• \( \Sigma \) & \( \rightarrow \) ecological footprint

In practise = carbon footprint

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ECO-DESIGN TOOLS

INTERNAL: WHAT IS IMPORTANT FOR THE PRODUCER

• Material efficiency
• Safe chemicals
• Decreased energy consumption
• Cut production costs
• No production waste
• etc

EXTERNAL: WHAT IS IMPORTANT FOR THE CUSTOMER

• New business opportunities via product safety
• Decreased logistic/ distribution costs
• Collection system in place
• etc

Eco-design communication & marketing messages
UPM named ‘Most Innovative Company’ at 2012 Ethical Corporation Awards

- UPM was highlighted for its Eco Design approach and overall sustainable thinking.
- The Ethical Corporation Awards recognises companies and individuals who have made significant advances in the field of corporate responsibility.
- Spokesperson for Ethical Corporation: “The judges commended UPM for its commitment to creating innovative materials for increased recyclability and robustness.”