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The WWF Paper Scorecard Manual

The WWF Paper Scorecard is designed as a user-friendly tool for paper purchasers to evaluate their footprint on the environment and to channel paper consumption towards alternatives with the least environmental impact.

Paper manufacture and use

affect the management of forests and plantations through the sourcing of fibres. There are also impacts through the extraction and production of clay and other filling and coating materials. Moreover, pulp and paper processes – and the generation of the vast amounts of energy needed to run them - may emit a wide range of compounds that affect the environment, as does the long and short distance transportation of raw-materials and finished products. Thus, evaluating all potential dimensions of environmental impacts of paper products is an almost impossible task. Any such methodology would necessarily be very complex, and it would still be difficult to compare performances and extract simple, useful guidance.

The WWF Paper Scorecard is

based on a different approach. Rather than trying to address every conceivable aspect, the Scorecard focuses on a limited number of major impacts related to human and ecosystem health and vitality. These are combined into a ‘one-size-fits-all’ tool applicable for scoring all paper grades. The inevitable subjectivity involved in the selection and weighting of impacts have been kept to a minimum by using a simple and transparent structure where each impact is allocated a maximum of either 10 or 20 points, adding up to a maximum potential100 points.

The WWF Paper Scorecard addresses:

- Responsible use of natural resources by promoting use of post-consumer recycled fibre and virgin fibre from well-managed FSC-certified forests as preferred fibre sources.
- Safeguards to avoid potential inclusion of unwanted sources of fibre. In addition to pre and post consumer recycled fibre, such safeguards include wood from FSC-certified operations and wood that fulfils the requirements of the FSC Controlled Wood standard.
- Monitoring and continuous improvement of manufacturing processes by promoting the adoption of management systems such as ISO 14001 and EMAS (these systems also address emissions of several compounds not specifically included in the tool).
- Contributions to climate change and global warming through emissions of CO_2 from fossil sources, the quantitatively most harmful green house gas.
- Pollution from adsorbable chlorinated compounds (AOX), some of which are long-lasting and very toxic, through promoting unbleached or totally chlorine-free bleached products.
- Pollution from oxygen-consuming organic waste to process water, measured as the amount of oxygen needed for complete chemical degradation (COD).
- Dumping of waste materials to landfill, much of which emits methane, another powerful green house gas, during degradation.

Background Data

Scoring levels for emissions relate to the sum of contributions from the pulp and paper making processes, and are based on the current performances of a large sample of (mostly integrated) pulp and paper mills, as stated in corporate environmental reports and websites. The zero emission requirements for scoring maximum points related to emissions of fossil CO2, AOX, organic materials measured as COD and waste to landfill, reflect a combination of targets and best performances already achieved by some producers.

Maximum acceptable emissions to fall within the scoring range were defined as the average emissions within a sample of mills representing the ‘worst’ paper grade related to that parameter. Thus, in order to score, a manufacturer of a ‘high impact grade’ related to a certain parameter must be a better-than-average producer of that kind of paper (within our sample of mills).

This approach makes it possible to accommodate all paper grades within the same scoring matrix. The scale for each parameter was calculated by dividing the distance between target (zero) emissions, and the average performance of producers of the most impacting paper grade into equal steps.

Our data indicate that for each parameter, there are examples of producers from all paper grades that score very well. Even so, there may still be average differences in performance between grades due to process characteristics etc, so that the ‘best’ producer of a certain grade, e.g. printing paper, may not score as high as the ‘best’ producer of e.g. unbleached recycled tissue.

However, this should not be a problem as long as there is still enough meaningful resolution within all grades. After all, purchasers will compare like with like - you can’t print glossy brochures on hygienic tissue.

How to use the WWF Paper Scorecard

The scoring relates to the sum of contributions from all involved pulp and paper making processes.

The functional units of the Paper Scorecard are tonnes of final products (an approach consistent with that of the European “Paper Profile” industry initiative: www.paperprofile.com and the MetaFore “EPAT Indicators and Protocols” developed together with major North American companies: www.metafore.org).

Emissions from pulp and paper mill processing are calculated at each level, irrespective of whether the pulp and paper mills are integrated or localised at different sites. Data are calculated based on the relative contributions and impacts of various types of pulp / paper materials to the final product and added together as a basis for scoring.

Calculations refer to annual average data and to annual average product composition. Final scores refer to performances of specific calendar years. First time scoring of a specific product may rely on data from the preceding 12 months. However, once into the next calendar year, further scoring should be based on the average performance of the immediately preceding full calendar year.

Data on ‘new’ parameters or processes may refer to the performance of the preceding 3 months. However, once into the next calendar year, further scoring should be based on average performance from the time when monitoring was initiated to the end of the previous calendar year.

As an example, manufacturer X may calculate and verify the score of a certain product in August 2007 (based on the average performance from August 2006-July 2007; the average performance during year 2006; or, for new parameters or processes, the means of May-July 2007), as “the 2007 score of product Y is Z”. Once into the next calendar year, the 2008 score of that product is calculated from the average performance of 2007 (normally averages of the full calendar year, or for parameters or processes introduced during 2007, the average data from the time when monitoring was initiated to the end of the year).

Calculations should be product-line specific as far as possible, and should be consistent in the sense that the sum of data for each (emission) parameter and production line should add up to 100% of the total for the mill. In the absence of product line specific measurements, data may be based on
mill averages.

‘Zero’ emissions / waste as in questions 3-6 should be interpreted conceptually as ‘no significant’ emissions. For practical purposes of scoring, this translates to levels less than, or equal to, 5% of the lowest numerical level indicated (second best level in terms of scoring). Thus, to be eligible for scoring e.g. zero emission of COD (=10 points), emissions must not exceed 0.1 kg / ton of paper (=5% of 2 Kg).

What if data for a certain emission parameter is missing for parts of the pulp/paper chain?

1. First time scoring:

• If the missing data corresponds to less than 10 % of the constituent pulp or paper materials, weighted average data calculated from other similar constituents (same type of pulps etc) may be used to compensate for the missing data.

• If data corresponding to 10 % or more of the constituent pulp or paper materials are missing, scoring is not allowed and the parameter should be left as a blank (zero).

2. Scorings during subsequent calendar years:

• If the missing data corresponds to less than 5 % of the constituent pulp or paper materials, weighted average data calculated from other similar constituents (same type of pulps etc) may be used to compensate for the missing data.

• If data corresponding to 5 % or more of the constituent pulp or paper materials are missing, scoring is not allowed and the parameter should be left as a blank (zero).

WWF Paper Scorecard 2007

Version 1.2

Product: _____

_____

Manufacturer: _____

Supplier: _____

Percentage of fibre in this paper product (total 100%):

___ % Virgin wood ___ % Post-consumer recycled ___ % Pre-consumer recycled ___ % Non wood

1. Preferred fibre sources

- 100% of fibres post-consumer recycled / FSC-certified virgin;
  or product FSC-labelled based on credit claims / FSC Recycled labelled: → 20 p.

- Percent of fibres post-consumer recycled / FSC-certified virgin:

≥ 95% → 19 p.	≥ 70% → 14 p.	≥ 45% → 9 p.	≥ 20% → 4 p.
≥ 90% → 18 p.	≥ 65% → 13 p.	≥ 40% → 8 p.	≥ 15% → 3 p.
≥ 85% → 17 p.	≥ 60% → 12 p.	≥ 35% → 7 p.	≥ 10% → 2 p.
≥ 80% → 16 p.	≥ 55% → 11 p.	≥ 30% → 6 p.	≥ 5% → 1 p.
≥ 75% → 15 p.	≥ 50% → 10 p.	≥ 25% → 5 p.	< 5% → 0 p.

Our score: ☐

2. Avoiding potential inclusion of unwanted fibre sources

- 100% of fibres post-consumer / pre-consumer recycled /
  FSC-certified virgin / FSC Controlled Wood or equivalent: → 20 p.

- Percent of fibres post-consumer / pre-consumer recycled /
  FSC-certified virgin / FSC Controlled Wood or equivalent:

≥ 95% → 19 p.	≥ 70% → 14 p.	≥ 45% → 9 p.	≥ 20% → 4 p.
≥ 90% → 18 p.	≥ 65% → 13 p.	≥ 40% → 8 p.	≥ 15% → 3 p.
≥ 85% → 17 p.	≥ 60% → 12 p.	≥ 35% → 7 p.	≥ 10% → 2 p.
≥ 80% → 16 p.	≥ 55% → 11 p.	≥ 30% → 6 p.	≥ 5% → 1 p.
≥ 75% → 15 p.	≥ 50% → 10 p.	≥ 25% → 5 p.	< 5% → 0 p.

Our score: ☐

3. Fossil CO_2 emissions (electricity from grid/external sources included)

- Zero pulp and paper mill emissions of fossil CO_2: → 20 p.

- Total pulp and paper mill emissions of fossil CO_2 / T of paper:

≤ 50 Kg → 19 p.	≤ 300 Kg → 14 p.	≤ 550 Kg → 9 p.	≤ 800 Kg → 4 p.
≤ 100 Kg → 18 p.	≤ 350 Kg → 13 p.	≤ 600 Kg → 8 p.	≤ 850 Kg → 3 p.
≤ 150 Kg → 17 p.	≤ 400 Kg → 12 p.	≤ 650 Kg → 7 p.	≤ 900 Kg → 2 p.
≤ 200 Kg → 16 p.	≤ 450 Kg → 11 p.	≤ 700 Kg → 6 p.	≤ 950 Kg → 1 p.
≤ 250 Kg → 15 p.	≤ 500 Kg → 10 p.	≤ 750 Kg → 5 p.	> 950 Kg → 0 p.

Our score: ☐

4. AOX emissions

- Zero pulp and paper mill emissions of AOX (pulp and paper unbleached or TCF / PCF): → 10 p.

- Total pulp and paper mill emissions of AOX / T of paper:

≤ 0.015 Kg → 9 p.	≤ 0.075 Kg → 5 p.	≤ 0.135 Kg → 1 p.
≤ 0.030 Kg → 8 p.	≤ 0.090 Kg → 4 p.	> 0.135 Kg → 0 p.
≤ 0.045 Kg → 7 p.	≤ 0.105 Kg → 3 p.	
≤ 0.060 Kg → 6 p.	≤ 0.120 Kg → 2 p.	

Our score: ☐

5. COD emissions

- Zero pulp and paper mill emissions of COD: → 10 p.

- Total pulp and paper mill emissions of COD / T of paper:

≤ 2 Kg → 9 p.	≤ 10 Kg → 5 p.	≤ 18 Kg → 1 p.
≤ 4 Kg → 8 p.	≤ 12 Kg → 4 p.	> 18 Kg → 0 p.
≤ 6 Kg → 7 p.	≤ 14 Kg → 3 p.	
≤ 8 Kg → 6 p.	≤ 16 Kg → 2 p.	

Our score: ☐

6. Waste to landfill

- Zero pulp and paper mill waste to landfill: → 10 p.

- Total pulp and paper mill dry waste to landfill / T of paper:

≤ 5 Kg → 9 p.	≤ 25 Kg → 5 p.	≤ 45 Kg → 1 p.
≤ 10 Kg → 8 p.	≤ 30 Kg → 4 p.	> 45 Kg → 0 p.
≤ 15 Kg → 7 p.	≤ 35 Kg → 3 p.	
≤ 20 Kg → 6 p.	≤ 40 Kg → 2 p.	

Our score: ☐

7. Environmental Management Systems and Transparency

- All contributing pulp and paper mills are EMS certified and publicly report performance data annually → 10 p.
- All contributing pulp and paper mills are EMS certified → 8 p.
- Major contributing pulp and paper mills are EMS certified and publicly report performance data annually → 6 p.
- Major contributing pulp and paper mills are EMS certified → 4 p.
- Major contributing pulp or paper mills are EMS certified → 2 p.
- Major contributing pulp or paper mills are not EMS certified → 0 p.

Our score: ☐

Total score: ☐

All scores verified by (name and contact details of senior manufacturer representative):

Signature: _____

Name and Contact details: _____

_____

All scores verified by (name and contact details of auditor and certification body):

Signature: _____

Name and Contact details: _____

_____

1 Preferred fibre sources

1.1 Definitions:
This item refers to the total proportion of all fibres in the product / input to the mill that consist of, or corresponds through credit-based claims to:

a) post consumer fibre material defined in accordance with FSC-STD-40-004; and/or

b) virgin fibres from FSC-certified[1] forests and plantations.

Figures can be calculated either as the average annual proportional input to the product-line / mill or as credit-based claims in accordance with FSC-STD-40-004.

1.2 Compliance and Verification:
Claims related to recycled materials should be verified by an internationally or nationally accredited certification body. Claims related to FSC-certified materials should be verified by an FSC-accredited certification body[2].

2 Avoiding potential inclusion of unwanted fibre sources

2.1 Definitions:
This item refers to the proportion of fibre in the product that can be considered as safeguarded from the inclusion of materials from unwanted sources, including: illegally harvested wood; wood harvested in violation of traditional and civil rights; wood harvested in forests in which High Conservation Values are threatened by management activities; wood harvested in forests being converted from natural and semi natural forests to plantations or non-forest use; or wood harvested in stands where genetically modified trees have been planted.

2.2 Compliance and Verification:
Fibre that falls within the following categories is considered as safeguarded from inclusion of unwanted fibre sources:

a) post consumer fibre material as defined in FSC-STD 40-004, verified by FSC-accredited certification bodies, or through other systems of equal scope and rigour by internationally or nationally accredited certification bodies;
b) pre-consumer fibre material as defined in FSC-STD 40-004, verified by FSC-accredited certification bodies, or through other systems of equal scope and rigour by internationally or nationally accredited certification bodies;
c) virgin fibre verified as originating from FSC-certified forests and plantations by FSC-accredited certification bodies;
d) virgin fibre verified as fulfilling all the requirements of the FSC Controlled Wood Standard FSC-STD 40-004, either as FSC Controlled Wood by FSC-accredited certification bodies, or through other systems of equal scope and rigour by internationally or nationally accredited certification bodies.

3 Fossil CO_2 emissions

3.1 Definitions:
This item refers to the total amount of fossil CO_2 emitted during the generation of the energy consumed in all industrial processes necessary to manufacture the product (including fossil CO_2 emitted during the production of energy in power plants procured from the grid etc, but excluding fossil CO_2 emitted as part of forest management or harvesting, as part of the production of coatings and fillers, or during transportation of raw-materials or finished products).

Fossil CO_2 is defined as carbon dioxide originating from materials that are non-renewable in human timescales (coal, oil, natural gas, peat and similar).

3.2 Compliance and Verification:
The emission of fossil CO_2 from each source is calculated based on the proportional contribution of various types of fossil fuels combusted in the generation of energy consumed in the production process, regardless of whether the energy is generated at the production site or in a power plant and distributed through the grid.

Calculation of CO_2 emissions for each type of fossil fuel should be based on consistent, internationally acknowledged emission factors and methodology, e.g. in accordance with EU Guidelines. National averages should be used for calculations of emissions related to generation of grid electricity in the absence of mill specific data. Production of surplus energy for the grid from renewable sources (e.g. from biomass burnt at the pulp mill), as well as 'green' electricity from the grid representing energy

[1]WWF acknowledges that several schemes have made contributions to improving forest management, but currently considers FSC certification as the system that best meets WWF's basic requirements of responsibility, transparency, international consistency and balanced multi-stakeholder governance.

[2]Certification and verification organisations that are audited against internationally recognised accreditation standards by nationally or internationally recognised accreditation bodies, e.g. members of the International Accreditation Forum.

production from renewable sources, may be used to offset CO_2 emissions from equal amounts of fossil fuel-based energy procured from the grid (e.g. by the paper mill) when calculating the scores. Offsets must be calculated at mill average basis, and may not be allocated to specific products. Claims should be verified by an internationally or nationally accredited certification body.

4 AOX emissions

4.1 Definitions:

This item refers to the total emissions of adsorbable organic halogens, measured as the total amount of chlorine bound to organic compounds in waste water.

4.2 Compliance and Verification:

Monitoring and measurements should be conducted in conformance with internationally acknowledged best practice procedures such as ISO 9562 (1989) or similar by impartial and competent laboratories. Claims should be verified by an internationally or nationally accredited certification body.

5 COD emissions

5.1 Definitions:

This item refers to the total emissions to waste water of matter and compounds that consume oxygen during degradation, measured as the amount of oxygen needed for complete chemical oxidation.

5.2 Compliance and Verification:

Monitoring and measurements should be conducted in conformance with internationally acknowledged best practice procedures such as ISO 6060 (1989) or similar by impartial and competent laboratories. Claims should be verified by an internationally or nationally accredited certification body.

6 Waste to landfill

6.1 Definitions:

This item refers to non-hazardous waste materials from pulp and / or paper-making processes that are permanently disposed of as landfill / in dams at the site or elsewhere, expressed as the equivalent of bone dry matter.

6.2 Compliance and Verification:

Monitoring and measurements should be conducted in conformance with internationally acknowledged best practice procedures. Claims should be verified by an internationally or nationally accredited certification body.

7 Environmental Management Systems and Transparency

7.1 Definitions:

This item refers to:

a) the proportions of the fibres in the final product that are processed in (pulp and / or paper) mills where all major relevant aspects of processing and production are addressed by environmental management systems that meet the requirements of ISO 14001, and

b) the extent to which information on the environmental performance of mills is publicly reported.

‘Contributing’ refers to all (pulp and / or paper) mills that contribute fibres to the final product, ‘major’ refers to mills that process more than 50% of pulp fibre and paper fibre materials, respectively.

‘Performance data’ refers to, as a minimum, all the issues addressed in the WWF Paper Scorecard (the proportion of post consumer, pre-consumer and FSC-certified fibres and the proportion of fibres verified to meet the requirement of the FSC Controlled Wood standard; emissions of fossil CO_2, AOX and COD per tonnes of finished paper product; dry waste to landfill per tonnes of finished product; and implementation of Environmental Management Systems).

‘Publicly’ refers to information in published Corporate Sustainability Reports and/or accessible through corporate websites.

7.2 Compliance and Verification:

Implemented ISO 14001 Environmental Management Systems (or EMAS / other comparable environmental management systems) monitored and verified by an internationally or nationally accredited certification body.

Transparency of performance data as per above verified by an internationally or nationally accredited certification body.

WWF is one of the world's largest and most experienced independent conservation organizations, with almost 5 million supporters and a global network active in more than 100 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption

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