



PAPER FACTS

8 PREJUDICES
AND THE RESPONSES OF THE
PAPER INDUSTRY

THE PREJUDICE PAPER PRODUCTION DEVASTATES VALUABLE FOREST LANDS.

1

THE FACTS
THE PAPER INDUSTRY
DOES NOT DESTROY
ANY WOODLANDS.
IT ACTIVELY SUPPORTS
SUSTAINABLE
FOREST MANAGEMENT.



Wood is indispensable as a raw material for paper manufacture. The paper industry is far from sawing off the branch it is sitting on. It takes a vital interest in a sustainable forestry management to safeguard the availability of its principal resource also in the future.

This concept ensures that three to four new trees are planted in place of every single tree that has been felled – an approach which jeopardizes the forest ecosystem not more than absolutely necessary. The paper industry is a comparatively minor beneficiary of the forest: only approx. 20 % of the worldwide wood harvest goes into pulp and paper production.

In Europe, raw material supplies have for centuries come from commercial forests. Today practically all of the remaining old-growth forests are protected as a nature reserve. Germany can look back on more than 200 years of sustainable forest management.

Even in countries with extensive natural forestry resources such as Russia or Canada, annual logging utilizes just a mere fraction of the annual growth of timber. The paper industry procures additional raw material from timber plantations in Spain and Portugal or from South America. For these woodlands, no deforestation of virgin forests has taken place. Instead they were raised on former agricultural areas that had lost their productivity.



For documentation purposes, the paper industry proactively assists the certification of sustainable forest management. This enables both customers and consumers to verify forest protection. The German paper industry is a member of the two big certification schemes, the 'Programme for the Endorsement of Forest Certification Schemes' (PEFC) and the 'Forest Stewardship Council' (FSC).

The European paper industry on its part is strictly adhering to the rules of the European Timber Trade Regulation which prohibits imports of wood and wood pulp from illegal logging.

THE PREJUDICE PAPER PRODUCTION ENTAILS EXCESSIVE ENERGY CONSUMPTION.

2

THE FACTS THE PAPER INDUSTRY HAS DRASTICALLY REDUCED ITS ENERGY DEMAND OVER THE PAST DECADES AND DERIVES A SUBSTANTIAL PART FROM RENEWABLE SOURCES.



Wood is made into paper. The carbon stored in wood remains in the product even after several recycles. Only when non-reusable fibers are finally incinerated or are decomposed in the waste will carbon be released again. This is a climate-neutral cycle.

However, it is not yet possible at this stage to manufacture paper without energy and thus without CO₂ emissions. The paper industry needs energy for running its systems – chiefly for removing production water from the paper sheet. Today more than 50 % of the required energy comes from regenerative sources and the sector is committed – if for no other than cost reasons – to constantly reducing its energy demand still further. For example, in 1955 specific energy consumption was at some 8,200 kW/d whereas it is today down at approx. 2,600 kWh/d. This is a decrease by 67 %. However, despite all efforts, the paper industry counts among the most energy-intensive industries. In the absence of perequation measures, e.g. in terms of the specific compensating scheme governing power-intensive enterprises under the Renewable Energy Sources Act, the German paper industry would not be internationally competitive.

Nevertheless the sector is looking to the future with optimism. Within the framework of a large-scale collaborative project – the Papermill Model – the paper industry invests substantial own resources in research into CO₂ neutral production options.

When we speak of energy consumption we have to make comparisons.



In Germany, production of 200 kg paper – which roughly corresponds to the annual per capita consumption in the EU countries – necessitates an energy input of approx. 560 kWh.

THIS IS EQUIVALENT TO

The annual power consumption of two PCs with high-speed processor. *s – PC Magazine*

The electricity consumption of a single 60W eco save bulb used in households during 3 ½ years (about 7.5 h burning time/day).

Currently the annual energy demand of data centers in Germany is at 10–15 tetra watt hours (paper industry 19 tetra watt hours). Four medium-sized coal-fired power stations would be needed to cover the energy requirements of these data centers alone. On an international scale, 25 nuclear power plants would be necessary to generate sufficient power for the Internet.

If the cloud services offered worldwide were treated like a nation, they would – with a power demand of 684 billion kWh – take sixth position among international energy consumers behind China, USA, Japan, India and Russia and before Germany, Canada, Brazil, France and Great Britain. *s – Spiegel online*

Another interesting aspect is the figures of the Bitcoin crypto-currency: meanwhile the worldwide annual electricity consumption of Bitcoin alone comes within the two-digit tetra watt hours range. Bitcoin thus consumes more energy annually than does the whole country of Denmark. *s – FAZ*

THE PREJUDICE PAPER MANUFACTURE CONSUMES EXCESSIVE VOLUMES OF WATER.

3

THE FACTS THE PAPER INDUSTRY HAS CONTINUALLY OPTIMIZED ITS PROCESSES AND CLOSED ITS WATER CIRCUITS.



Today, clean drinking water is unavailable to over one million people. More than 2.6 billion are excluded from basic sanitary installations – which is 40 percent of the world's population. And even in places where wastewater is collected and removed from the immediate living environment of people there is no guarantee that it will be suitably treated. Against this background, access to clean drinking water is one of the Millennium Development Goals of the United Nations.

In terms of drinking water, Germany is in a very comfortable position. Water shortages are unknown and every citizen has access to clean potable water. Nevertheless – this resource must be handled with care. The paper industry is fully aware of this requirement, since it needs water for quite a number of processes, such as for dispersing purposes and chiefly as a transport medium for fibrous material. Besides, papermills in Germany use water for cleaning machine clothings or for cylinder cooling, consuming roughly 250 million m³/year of freshwater. To satisfy this demand, 72 % freshwater originates from surface waters, 27 % from wells or fountains and just 1 % is drawn from local drinking water supplies.

In Germany, both withdrawal and recirculation of water are subject to stringent regulations and give rise to costs. Apart from having to meet the requirement of inhouse water treatment, paper companies in most of the German Länder are liable to pay fees for the withdrawal of water.



The applicable regulation in this context is the EU Water Framework Directive which also specifies standards for state-of-the-art wastewater treatment. Accordingly, the German paper industry sees utilization of water not only as an ecological but also as an economical matter. It therefore finds itself committed to optimizing its processes while increasingly closing its water circuits. The specific effluent volumes per kilogram paper, which are normally taken as a measure for the paper industry's water consumption, amounted to nearly 50 liters in the 1970's. Today this figure is down to 8.6 liters/kg paper. The statistics is regularly published by the German Pulp and Paper Association and "Papier-technischen Stiftung".

Some 30 % of papermill effluents are pre-treated before they are discharged into municipal sewage plants. The remaining 70% are subjected to mechanical and biological treatment in advanced inhouse treatment plants. As much as 4 % of overall paper production originates from mills running fully closed whitewater systems. Complete closure is, however, only feasible with low-salt and low-hardness water qualities, producing papers for dedicated applications.

THE PREJUDICE
PAPER USAGE
IS EXTREMELY HIGH.

4

THE FACTS
PAPER STOCK CIRCUITS
INCLUDE
HIGH RECYCLED SHARES.
IT IS WORLD CHAMPION
OF RECYCLING.



Everybody has to decide for himself whether he uses too much paper. Without paper, however, modern life would be hardly conceivable. We read newspapers, journals and books, we expect goods to be safely packaged and we need paper for our daily hygiene. Actually, only part of total paper production passes through our hands: we see neither the outer transport packages in trade and industry nor the files and printed matter of authorities or commercial enterprises. It is widely unknown that specialty papers find application in automotive engineering and for wine filtration just as for medical purposes.

The good thing about it is: unlike other materials, paper is not made from finite resources but it literally grows again. And a sustainable forestry management guarantees that this course of nature will go on undisturbed.

Recycling is a major factor contributing to the sustainability of the paper cycle. Re-using raw materials that were processed once makes it possible to achieve an overall reduction in energy and wood fiber inputs, thus simultaneously decreasing the need for expensive wastewater treatment.



To document this policy, some paper manufacturers use the Blue Angel logo which is a quality label certifying the special environmental friendliness of a product.

In the European Union, the recycling rate has reached a mark of 72 % and it is even higher with 78 % in Germany.

THE PREJUDICE THE PAPER INDUSTRY USES TOO LITTLE PAPER FOR RECYCLING.

5

THE FACTS THE GERMAN PAPER INDUSTRY IS THE BIGGEST LEADER WORLDWIDE IN PAPER RECYCLING. BUT IT STILL NEEDS FRESH FIBER.

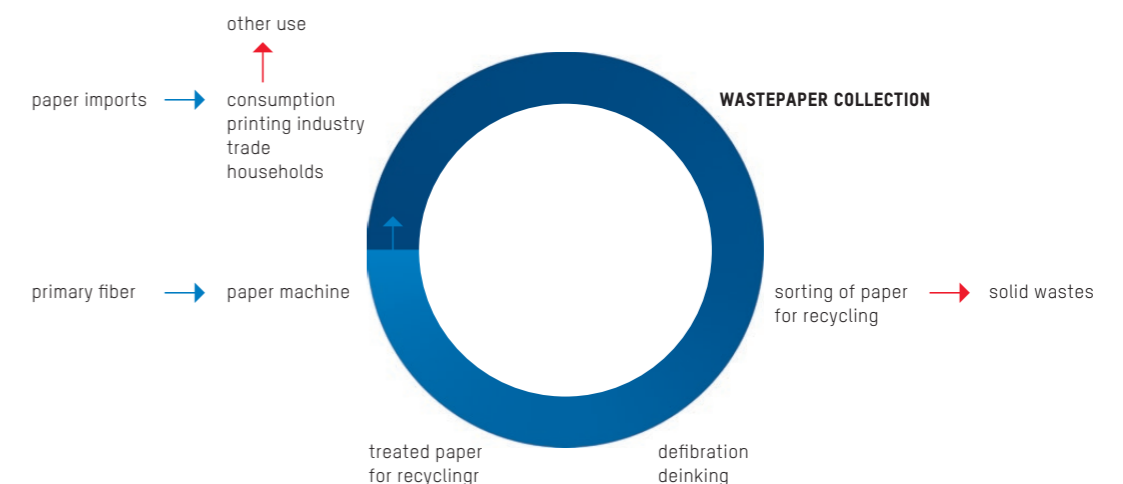


Limitless recycling will remain a dream. In actual fact, however, the paper industry is not too far off the mark. With a 78% paper for recycling utilization rate, the industry is a flagship model of recycling management. In Germany, over 15 million tons recovered paper is annually processed into new paper. Since collections of paper for recycling in Germany fail to meet the actual demand, imports from abroad are required.

The treatment of papers for recycling comprises several steps, a process that inevitably involves losses of fiber and quality. With a view to maintaining a continued paper cycle, fresh fiber has to be consistently introduced into the cycle. Wood fibers in paper normally withstand up to ten recycles.



In terms of quality, recycled papers do not have to fear the comparison with competitor grades made from chemical or mechanical pulp. However there are quite a number of paper types that cannot be partly or completely produced from recycled fiber because they have to meet stringent demands on tear strength or printability.



THE PREJUDICE
THE PAPER INDUSTRY
IS A NO-FUTURE SECTOR.

6

THE FACTS
THE GERMAN PAPER INDUSTRY
IS NO. 1 IN EUROPE
AND NO. 4 IN THE WORLD.
THE SECTOR UNDERGOES DYNAMIC
GROWTH.



The paper industry is a high-tech sector with a future. German papermills produce some 3,000 different paper grades – all of them being customized to meet special requirements regarding finish and quality. Annual production amounts to approx. 22.7 million tons paper and board. A staff of nearly 40,000 generate a sales volume of 14.3 billion euros.

Paper grades from Germany are also in international demand, with approx. 45% of overall production going into exports. In many areas German paper companies are players in the 1st league or even world market leaders for their products. By international standards, the German paper industry is equipped with leading-edge machinery so that it is armed for the future. In terms of production, the industry ranks first in Europe and takes 4th place worldwide behind the USA, China and Japan.

The paper industry offers training positions for the following jobs, to mention just a few:

PAPER ENGINEERS

Paper engineers are versatile experts in their field. Besides the manufacture of paper and board and of chemical and mechanical pulp, they are specialized in paper for recycling treatment. Their focus is on production, R&D and on all levels of management. Study courses in paper engineering are offered at Technical Universities in Germany and Austria.



PAPER TECHNOLOGISTS

A broad spectrum of activities opens up to paper technologists in the paper industry. Their scope of responsibilities encompasses the treatment of raw materials and auxiliaries in addition to paper, board and pulp production, the setting, feeding, operation, monitoring and maintenance of plant and machinery for paper and pulp sheet forming, the controlling of operational procedures from control centers, the supervision of production operations and, finally, quality checks of end products. Dedicated training places are offered by many papermills in Germany, Austria and Switzerland.

THE PREJUDICE TREES MUST DIE FOR NEWSPAPERS.

7

THE FACTS NEWSPRINT IS PRODUCED IN GERMANY FROM RECOVERED PAPER IN A RESOURCE-EFFICIENT MANNER.



Newspapers and advertising journals provide their readers with reliable information, background knowledge and assessments of current issues. The availability of variegated journalistic information is crucial to democratic societies.

Many readers remain focused on print media alongside all the diversified digital offerings. Thinking of the habit of reading a rustling newspaper at the breakfast table creates a feeling of pure reading pleasure.

In view of the need for topicality, newspapers are fast moving products. This is why publishers use low-grammage thin paper grades containing high recycled shares of up to 100 %. The recycling of wastepaper is a resource-efficient approach offering a multitude of environmental benefits: it reduces CO₂ emissions while simultaneously decreasing the water volumes required for new paper production.

Since more than 25 years, the paper industry has been joining forces with publishers associations under AGRAPA to ensure a high-grade recoverable paper cycle with an above-average re-use quota of 80 ± 3 %. These endeavors are supporting Germany's position as the front runner in the field of paper recycling. You, too, may promote a functioning recovered paper cycle by correctly disposing of your paper waste in the blue bin.



The low proportion of fresh wood fibers in newsprint consists primarily of thinning material from sustainable forestry rather than from deforestation measures. As a rule, newsprint carries the Blue Angel or other eco-labels such as the EU eco-label, FSC or PEFC certificates. As far as German newsprint is concerned, it is safe to say that it never contains any wood from forests under threat or from illegal logging.

FURTHER INFORMATION

www.agrapa.de
www.youtube.com/watch?v=B673Cc_Y2JE
www.bvda.de/themen/nachhaltigkeit.html

THE PREJUDICE PACKAGING IS SUPERFLUOUS AND GARBAGE.

8

THE FACTS
PACKAGING PROTECTS
VALUABLE CONTENTS.
MADE OF PAPER, CARDBOARD
AND PAPERBOARD,
THEY ARE PARTICULARLY
SUSTAINABLE.



Packagings are indispensable for the supply of mankind. Protecting valuable goods and food-stuffs, they serve as product or transport packages which help reduce shipping damage and thus the loss of resources. Today, for instance, we experience losses of 30 percent of total food production chiefly on account of inadequate protection of the products inside packages. Whatever articles are damaged in transit – they were produced for nothing, consuming water, energy, raw materials and labour in vain. In the majority of cases, the environmental benefit achieved by waste avoidance is 5 to 10 times higher than the environmental impact of the packagings concerned.

s – Denkstatt

Besides, packagings perform additional functions: they provide consumers with important information about the package contents and – what is more – they even create purchase incentives. Since the functionality of packages is limited in time, they should provide maximum resource efficiency, should ideally be made from renewable raw materials and be recycled in an optimal way.

All these requirements are met by packages made from paper and board. With almost 50 percent, this segment represents the highest share of total packaging production in Germany. They are manufactured from the renewable raw material wood containing fibrous material that lends itself to multiple recycling. No other grade category of the paper industry records paper recovery rates as high as those of folding boxes, corrugated boxes or solid fiber board cartons. Wherever technologically possible, these packagings are primarily produced from waste paper. In Germany, corrugated board and solid fiber board consist of up to 100 percent waste paper whereas folding boxes reach an 86 percent paper-for-recycling utilization rate.



Used paper and board packagings constitute a valuable raw material for new paper production. If they are illegally disposed of in the countryside they will turn into compost comparatively soon in a natural environment; but their fibers are not reusable in this case. At any rate, paper and board never produce rot-proof plastic waste.

Transport, sales and service packagings made of paper and board are critical for the national and international distribution and supply of goods. Packagings that are optimally adapted to both the packaged contents and the associated means of transport enable reduced logistics while alleviating traffic-related environmental burdens in terms of energy consumption and pollutant emissions.

PAPER FACTS

PAPER. AN INGENIOUS RAW MATERIAL.

Invented 1900 years ago, paper is nowadays inseparably linked to everyday life. It serves modern society as a print medium for information and knowledge transfer, as wrapping and packaging material, for daily hygiene or as a speciality product lending itself to a multitude of applications ranging from banknotes to medical filters. Like every kind of production, paper manufacturing is a consumer of resources. Compared with other materials, however, paper offers high ecological benefits. It is made from wood as a renewable raw material and stands for an exemplary recycling management. Regarding the ecological aspects of paper, there are a number of prejudices and untrue allegations which we would like to address in this brochure.



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