PITA ANNUAL REVIEW

2015-2016

Paper Industry Technical Association
5 Frecheville Court,
Bury, Lancashire
BL9 0UF

functional solutions for papermaking

Serving your market, meeting your needs

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- Yankee Coating
- Wet Strength Resins
- Dry Strength
- Fibre Modification
- Re-Pulping
- Antiscale
- Foam Control

Packaging

- Wet Strength
- Dry Strength
- Sizing
- Foam Control
- Antiscale

Printing & Writing

- Wet Strength
- CMC
- Dry Strength
- Sizing
- Coating
- Foam Control
- Antiscale

Speciality

- Wet Strength
- Sizing
- Foam Control
- Antiscale
- Coating

Developing our future together

Mare is a privately owned company with a proud heritage of producing and supplying functional products to the paper industry for over 75 years. Our products demonstrate "optimised" cost effective solutions for the customer, allowing the benefits of reduced cost, improved flexibility and increased competitiveness.

We are committed to offering our customers tailor-made services, providing innovative products of the highest quality, while offering very competitive prices. We are also dedicated to maintaining the highest environmental and safety standards within the construction and operation of our production facilities. These facilities represent the latest in technology and guarantee the highest quality standards whilst protecting both our employees and the environment.

Our constant attention to quality is reflected by UNI EN ISO 9001:2008 certification, which we have held since 1993. This dedication drives our product development process, assuring our customers the finest and newest technologies in the industry. Innovative technology and extensive production capacity, combined with constant attention to quality and to customer requirements, gives Mare a distinct advantage over competitors in various markets.

Mare has production facilities located in locations throughout Europe, perfectly located to meet the needs of its customers. Choosing Mare will give you a more intimate, flexible and focused supplier response, designed to meet your needs today and in the future.

For more information please go to our website **www.mare.com** or contact Scott Wilkinson, Managing Director, Mare (UK) Ltd at **scott.wilkinson@mare.com** or call **00 44 (0) 1539 728719**

PITA

Annual Review
2015-2016

Compiled by the PITA Office

PITA
Paper Industry Technical Association

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Chairman's Message

(Given at the PITA AGM, Heron Corn Mill, Beetham, 3 December 2015)

My comments today are prefixed by a reminder – should we need it – of the turbulent state of the global paper industry. The industry continues to evolve and consolidate driven by technological, economic and legislative influences. The graphic paper sector is facing the greatest disruption. Players in this sector are having to rationalise and consolidate in their attempts to try and match the decreasing needs of a changing end use market.

Nearer to home 2015 has seen a further contraction of the UK paper industry – influenced in part by these mega factors and by more 'localised' influences. The demise of Aylesford, of Tullis Russell and more recently of Watchet, in addition to Shotton PM1, Ramsbottom PM1, and the tiny but historic speciality Springfield Mill run by Whatman, all serve as a reminder that no sector is really immune from this turbulent world.

Despite the situation in 2015 and that of last year, PITA has been able to survive and develop. This has been due to the considerable hard work and effort of the PITA team. Yes, the Association current trading finances are not rosy, but they are a considerable improvement on 2014. The PITA team has investigated every area of the operation and taken out costs wherever and whenever possible. Opportunities for additional income generation have been investigated and where appropriate exploited – for example the installation of solar panels on the Bury offices which are not only reducing electricity costs but contributing income.

The finances should also be viewed in the light of investments made to develop the Association further and to launch new initiatives. To date PITA has:

- Widened its geographical reach – including the Middle East and Central Europe
- Widened its sectorial coverage – including corrugating and moulded fibre
- Increased the pagination in *Paper Technology* by 50% (from 32 to 48 pages)
- Launched the new *PAPERmaking!* – e-magazine
- Expanded publication of the *PITA Affairs* newsletter
- Strengthened alliances with our relevant associations and organisations – e.g. between the CPI and PITA which saw the staging of the BAT workshop in January of this year and the development of a joint paper conference to be held in 2016

These initiatives are in part driven by the output of PITA Development Forum activities. The Development Forum is a conscious step by the Board to strength and develop the Association in the light of the turbulent state of the industry. It is worth mentioning that a survey of a cross-section of Members was undertaken as part of first phase of the Development Forum's activities. The independent survey sought to gather views on a number of issues including our current offerings, ascertaining the value of PITA to Members and to gather views on paper vs digital publications.

The output of the survey was extremely positive and it is clear the Membership values the Association and its products. The importance of this feedback is that it gives the Board a sound foundation on which to develop and move PITA forward as a viable commercial entity and Member based Association.

To summarise, the paper industry is changing and PITA as an organisation associated with the industry has to change as well. This will ensure that it:

- Still provides the right offerings
- Continues to give value to its Members
- Survives financially

The Development Forum is on-going and its output will be reported on as it progresses. It is clear that we will need to diversify further and encompass a greater reach of parties not only involved with paper but those involved with other cellulose fibre related products.

Graham Moore

PITA Board

2015-2016

Graham Moore	*National Chairman*
John Kirby	*Deputy Chairman*
Martin Wroe	*Immediate Past Chairman*
Stephen Hutt	*Financial Director*
Helen Dolan	*Company Secretary*
Tim Klemz	

2014-2015

Graham Moore	*National Chairman*
John Kirby	*Deputy Chairman*
Martin Wroe	*Immediate Past Chairman*
Stephen Hutt	*Financial Director*
Helen Dolan	*Company Secretary*
Tim Klemz	
Kieran Rafferty	

2013-2014

Martin Wroe	*National Chairman*
Graham Moore	*Deputy Chairman*
Tim Klemz	*Immediate Past Chairman*
David Dredge	*Publications Director*
Stephen Hutt	*Financial Director*
Helen Dolan	*Company Secretary*
Kieran Rafferty	

PITA Office/Paper Technology

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Chief Executive
PITA Office

Helen Dolan
Company Secretary
PITA Office

Daven Chamberlain
Editor
Paper Technology

Graham Sutton
Advertising Manager
Paper Technology

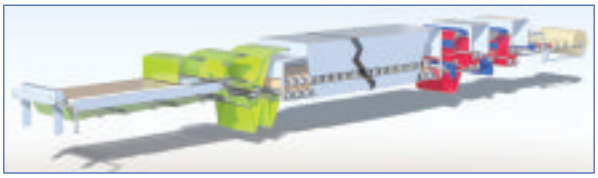
Nipman Paper Technology: World leading technology & service solutions – from Finland

Robert Clayhills

Nipman Paper Technology was founded in 2000 by Robert Clayhills, with 30 years of experience in the paper industry, as an agency business with the intention of selling technologically leading products for optimising the paper manufacturing process at paper mills in Scandinavia.

Especially in Finland there is a long tradition of developing and manufacturing *"state of the art"* products for optimising the papermaking process. In Nipman's portfolio there are currently many companies that all have long experience in the paper industry. Furthermore, the companies are leaders in their respective fields, not only in Scandinavia, but Globally.

In terms of scope, several of the companies can provide in-depth special service and analysing expertise. Furthermore, they offer special products and new innovative devices to help paper operators in their daily work; products to improve productivity, safety and optimise machine time. Now, some of the products and services will be marketed directly to paper and board mills in the UK.



Tasowheel's CD Profiling System takes Production to the Next Level

Tasowheel provides expertise in CD-profile optimisation for paper producers. A comprehensive delivery for a CD control system modernisation includes actuators and valves as well as CD profile control systems including interface to the existing QCS system.

Actuators and dilution valves manufactured and delivered by Tasowheel are operating in the paper machines of the biggest producers worldwide. In addition to design, manufacturing and maintenance regarding solutions, products and services for CD profile optimisation, Tasowheel places considerable experience at the disposal of their customers.

ProTest engineering – The world leading SME in paper machinery testing services

ProTest engineering Ltd. is an expert service company providing comprehensive maintenance services and device modernisations to the pulp and paper industry. Since 2010, the company has helped dozens of customers worldwide in troubleshooting, process optimisation, device tuning, overhauls, system modernisations and start-ups.

The company operation is based on solid expertise. Personnel have altogether over 50 years working experience in demanding automation, troubleshooting and customer service roles on over one hundred individual machine lines globally. Operation key points are state of the art measurement equipment, fast and flexible customer service and cost-effectiveness.

ProTest engineering also develops and manufactures unique measurement devices to help paper machinery service actions. For example, the AM1 doctor blade angle meter is the most accurate and sophisticated device on the angle meter market.

CoaterService – Global expert on coaters, coating stations and sizers

Coater Service Oy has been classified as one of the most successful companies in Finland by Kauppalehti's Research and Analysis Unit (source: Balance Consulting). They provide maintenance, check-ups and modernisation for reels, coating stations, and sizers, all to the customer's specification.

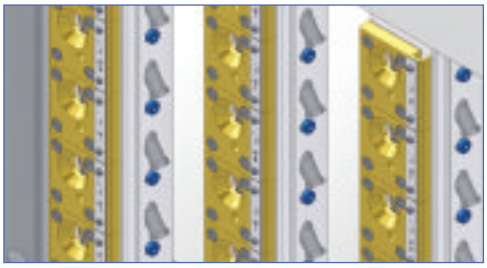
After a maintenance visit, the customer will receive an illustrated report for the machine's maintenance log. The report provides details of the machine-specific preventative measures taken, component replacement needs as well as specifics for short and long-term follow-up. With preventative maintenance service, the customer will be able to keep production running reliably.

In addition the company offers large-scale modernisation projects with the help of a professional network. They are trusted providers of flexible, comprehensive service, and specialists in the needs of the paper and board industry.

FlowControl – Manufactures oil circulation lubrication systems with more experience than most

Flow Control was founded in 1995 by Teuvo Huhtala and located in Muurame, Central Finland, since the beginning. Huhtala has almost 40 years of experience in developing and manufacturing flow meters; he has invented several patented solutions and received an award of recognition from the Foundation for Finnish Inventions.

Condition surveys of seal supply and oil circulation lubrication systems also fall within the company's field of expertise. FlowControl thrive in competition with strong know-how and by being able to flexibly tailor solutions according to clients' needs. The company is capable of providing anything from individual flow meters to complete systems, and their reach is global: FlowControl has delivered products and services to every continent in the world.



RollResearch International – The new world leader in in roll measuring and roll grinding modernisations

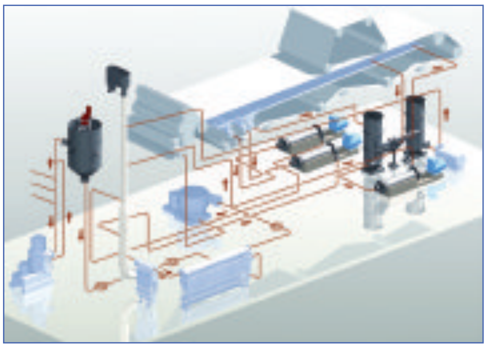
RollResearch International Ltd is a provider of high-tech roll measuring technology and comprehensive roll grinder modernisations for the paper and metal industries, worldwide. The modernisation scope extends from automation controls to electrical systems and components, from measurement and attachment devices to mechanical overhaul. Over 20 years in operation, the company's competitiveness lies behind good customer service and innovative product development deriving from end user demands and university research projects.

AFT Aikawa – POM technology for approach flow – Simply less – novel approach

The approach flow system is one of the most critical areas of the paper machine. As the trend for higher production rates with short-distance forming devices (e.g. new headboxes and formers) grows, pressure pulsations and consistency fluctuations within the stock become more problematic. Integrated and simplified solutions offer the greatest payback. Small process volumes with smooth flows enable fast reaction to disturbances or grade changes.

POM's wet end technologies are based on a novel approach: simply less**.** An important part of the technology is what can be left out - reduced volumes, airless systems, smaller footprints, simpler solutions for retrofits, upgrades, and new machines.

AFT Aikawa is represented by Peter Taylor Agencies, Manchester UK.



C☆iFilm® coating starch: Customer focussed development of nature-derived binder for cost effective coating of Paper and Board

Dr. Andreas Becker, Andreas Voigt

The papermaking industry and especially the coated graphical papers have to face various challenges. Europe is an aging society in a mature market showing quite limited growth rates. People's life style is changing rapidly especially regarding work environment (e.g. home offices and flexibility of people), communication and electronic media as well as social networking and on-line shopping to name a few.

For the paper industry these trends led to an increasing consolidation combined with rationalism of companies, their production processes and product portfolio. During the crises in 2008/9 the graphical paper industry was hit heavily and a further decline of about 3% on year's average is expected for the future.

As a result the paper industry in Europe is focusing nowadays on cost optimisation at maintained quality. The trend towards greener and more environmentally sustainable paper making process led to an increased use of starches in coating during the recent years. Papermakers realised that by using classical coating starches, further cost optimisation has reached its boundaries.

Some further developments of nature-derived cost effective coating binders remain today possible thanks to a close cooperation between papermaker and starch supplier fully aware of its specific requirements and needs.

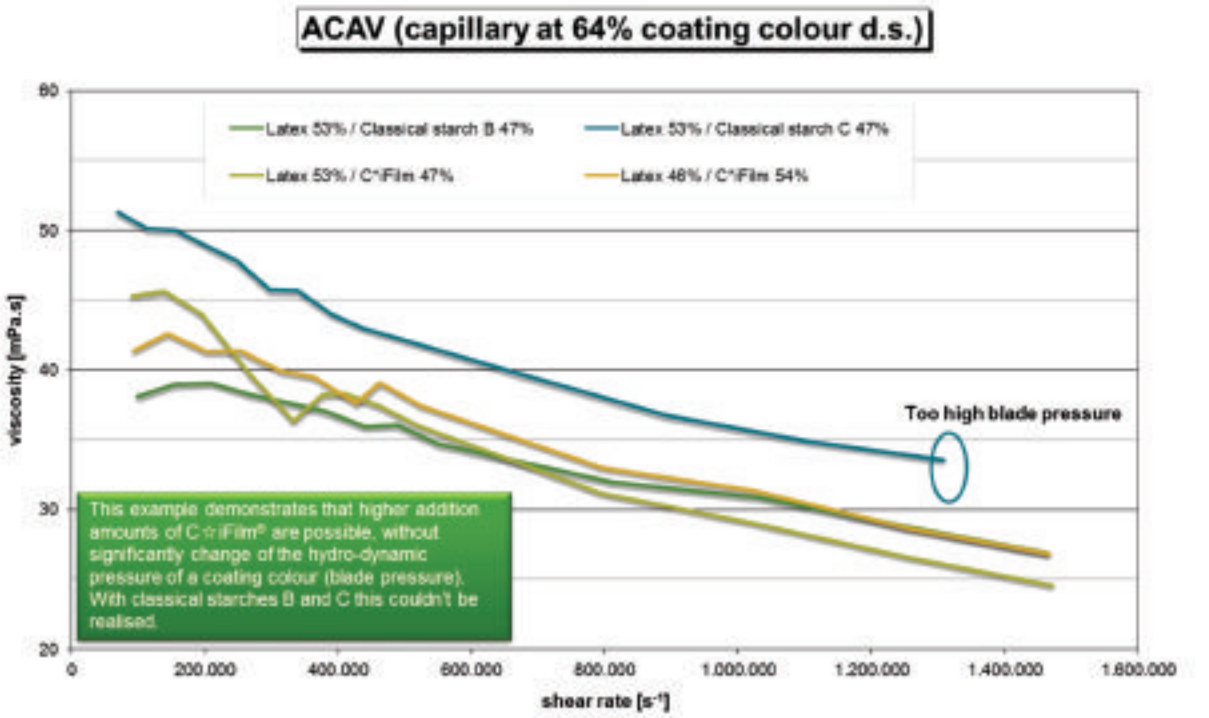
Partnering through innovation

Partnership between paper producers and suppliers is an essential component of product innovation. Exchanging ideas and experiences with people from paper production and R&D is key as the understanding of customers' needs is one of the most relevant ways to develop the best solution.

At Cargill, based on our very good experience in paper coating, combined with customer knowledge and valuable feedback from our customers we have been able to focus our development on the main product requirements to meet: maximise coating solids, minimise synthetic binder content and improve coating colour rheology without compromising on paper quality.

Technical optimisation

We know paper coating requires fine-tuning of multiple parameters to optimise runnability and performance e.g. coating colour rheology, water retention, coater adjustment. It is about taking a holistic view, rather than looking at the effect of starch in isolation. Advanced instrumentation techniques allow us to understand the rheological behaviour of starch, its interactions with other coating colour components and interactions between the coating colours and the base paper. The positive effects seen for the new products were revealed in coating colour formulations by measuring water retention, high shear viscosity as well as intrinsic coating structure. In order to optimise a coating colour binder system, rheology is key to ensure smooth runnability at the coating heads. For example (comp. chart below), if a customer is utilising a binder composition of 53% latex combined with 47% classical coating starch B and wants to enhance binding power with a classical starch C (maybe with an outlook to replace more latex with more of this starch), he would be faced with much higher blade pressure due to higher high shear viscosity of the coating. In most of the cases the consequence would be dilution of the coating.



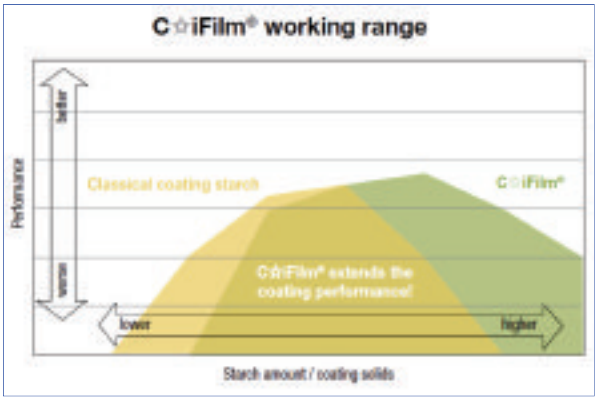
One step further with C☆iFilm® coating starch

In comparison to the classical coating starch C, the new developed C☆iFilm® coating starch has even higher binding power and it affects lower coating colour high shear viscosity than both classical coating starches B and C. With this excellent property C☆iFilm® coating starch enables to adapt the binder system towards more starch and less latex e.g. 46% latex combined with 54% C☆iFilm® coating starch and maintain high-shear viscosity of the originally used coating composition containing the classical coating starch B.

But not only high-shear viscosity is important as rheology parameter for the coating application. Visco-elasticity is influencing the coater runnability too. It is commonly known that starch is giving more elasticity in a coating formulation than latex. However, C☆iFilm® coating starch is also beneficial in that respect. No increase of the elastic part was measured for the coating composition employing 46% latex combined with 54% C☆iFilm® coating starch in comparison to originally used coating composition containing the classical coating starch B. Thus, rheology disturbances at the coaters e.g. misting at the MSP or bleeding at the blade are less likely.

Based on these facts it can be concluded that the operating window (comp chart below) can be extended by the utilisation of C☆iFilm® coating starch. That means either coating solids can be increased (maintain starch/latex ratio) or higher starch utilisation is possible to replace synthetic binder (at constant coating solids) and keep the overall performance high.

Case studies



These results enable us to assess the coater runnability confirmed by the following trials and case studies.

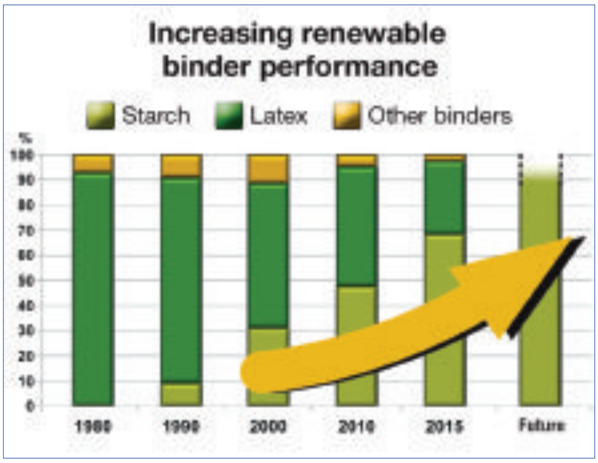
A **double coated woodfree paper** (150g/m² finish quality) was blade pre-coated at >70% solids with a std. recipe containing 50% of the total binder employed classic starch plus 50% latex. In order to reduce costs, the pre-coat formulation was optimised to 65% C☆iFilm® coating starch plus 35% latex. Due to the aforementioned benefit in extending the working range, similar coater runnability was observed as well as surface strength represented by IGT and ISIT measurements was kept constant. An overall good print quality was confirmed during commercial print trials.

Example **LWC offset** (60g/m² finish quality) – in MSP application at machine speeds >1400m/min. and coat weights of 8g/m² per side a std. coating system employing 45% latex plus 55% classic starch was tested and compared to a recipe containing 35% latex plus 65% C☆iFilm® coating starch. In a course of a run no rod spitting or misting were observed. Rheology measurements of high-shear viscosity represented by ACA measurements as well as rod pressures were comparable. Due to higher starch amount the OBA carrier function was improved (>CIE Whiteness) whereas gloss/printing gloss, surface strength and mottling did not show any differences.

Also the case study for LWC offset – blade application revealed the benefits of C*iFilm. Summarised it can be concluded that the new developed starch was able to simplify the coating formulation (only one synthetic binder instead of two), showed improved binding power (it was possible to replace 2,5pts. of latex by 2pts. of the C☆iFilm® coating starch) and gave superior coater runnability by maintaining the desired good paper properties.

Summary

As shown by the chart below the coating colour binder composition has developed significantly over the last more than 30 years. Formulations were very much simplified going alongside with simplified production portfolio of paper grades and faster and bigger machines requiring longer and smoother production runs. The binder type and content have been optimised to meet these demands coupled with the cost aspect as mentioned before. Cargill's skilled specialists and scientific experts have focussed the developments on specially designed starches for high stability, beneficial coating rheology at high solids coating combined with superior binding power.



With our products made from renewable natural resources C☆Film®, C☆iCoat® and C☆iFilm® coating starches we have been able to stepwise increase the utilisation of our natural derived and specialised products in the coating binder composition.

Conference / Exhibition / Meeting Reports

Packaging Innovations Sept. 2015 (LONDON)

Each year I have reported on this event it has increased in size, both in terms of visitors and exhibitors. Last year it reached the limit of the old venue – the Business Design Centre, Islington – so this year's event was the first in its new home, London Olympia. The venue is certainly larger than the old site, but with that change in size comes a certain loss of intimacy. Also, previously the two different parts of the exhibition (Packaging Innovations, dealing with general packaging, and Luxury Packaging highlighting high-end products) were physically separated; this time they were intimately mixed.

As a general comment on the event, it was evident that paper is definitely in the ascendency. Aside from some fine printed ceramics and glass, and a few printed and embossed tins, the majority of products were undoubtedly paper-based.

In terms of paper and board manufacturers, **BillerudKorsnäs**, **Cordenons**, **Eska**, **Favini**, **Iggesund**, **James Cropper Paper** (celebrating their 170th anniversary with 170 die-cut and printed coloured paper and board samples), **Papeteries De Montsegur** and **Neenah**, all of whom have exhibited before, shared the floor with newcomers **International Paper**, who were pushing ***Arktika*** coated boxboard. Merchants were also in force: **Antalis**, **GF Smith** and **Winter & Co** are all previous exhibitors.

There were too many converters to describe, but high on the list as regards the eye-catching design of their stands were **Jung Design**, **Shredhouse** and **Suttons Packaging**, all of whom deal with coloured and printed tissue products. New to the show was **Slater Harrison & Co.**, contract coaters, laminators, embossers and sheeters where colour, texture and tactile properties were all to the fore. Also there for the first time was **Neenah Red Bridge** – **Neenah** purchased the **FiberMark Red Bridge** site in Bolton which specialises in both paper and textile coating, in August, by which point both companies had already booked to appear at the show, which explains why Neenah had two stands. It is also worth mentioning the exhibition catalogue, which featured a beautiful black tactile-coated product (***Touché***) produced by Neenah Red Bridge.

I managed to grab a few words with Eska and found the press re-build, highlighted in the June edition of *Paper Technology*, has now been completed. Unfortunately, all of the material on general display was produced prior to the machine rebuild, but a single sample was available to show what can now be done. In particular, the noticeable wire mark that was prevalent previously has now been reduced very significantly – so it looks to have been a successful engineering project.

As regards the overall show, it has to be said that in the larger venue, the frenetic activity and crowded atmosphere of previous years was not in evidence. However, as regards overall visitor numbers, which have been on the rise year-on-year, they were clocked at 4003, just over 100 more than last year, and double that which attended the first event six years' ago.

MIAC Oct. 2015 (LUCCA)

The organisers of the MIAC exhibition faced exactly the same dilemma as those of Packaging Innovations – an over-subscribed exhibitor list and a venue seemingly already at capacity. However, they took a different approach to the organisers of the British show; they opened a large room upstairs (that up until two years' ago was the venue for the conferences) and shoe-horned in a further 23 stands, increasing the exhibition space by 17%. This was certainly an innovative approach, although it must be noted that footfall upstairs was decided lower (possibly because the idea is so new that people were slow to cotton on). So it will be interesting to see whether this approach is followed again next year; failing that a new venue might be in order, but with the convenience of having the city of Lucca so close, the organisers will have to weigh the consequences of moving to a new, untried site against the packed capacity but excellent facilities of the Lucca Fiere Exhibition Centre.

In addition to the exhibition covering a reported 270 international companies, there were four free half-day conferences this year: Tissue Machine Suppliers; Tissue Converting Line Suppliers; ASSOCARTA Energy Conference; and Comieco Recycling Conference – the last two being of national rather than international relevance. Only the first was of specific interest to PITA members, the theme of this segment being cost reduction; each company was asked to present on case studies or engineering developments that can be used to reduce manufacturing costs. After a quick overview of the sector supplied by **BKay Tissue Advice**, papers were given by **A. Celli Paper**, **Toscotec**, **Valmet**, **Voith** and **Novipianti**; currently we are in negotiation to publish some of these next year.

Overall, 4984 visitors were noted as attending (against 4236 for 2014) – an amazing testament given the unsettled period of weather – rain was intermittent and at times very heavy, leaving parts of Lucca with significant standing water, but this was nothing compared to the five deaths caused by flooding in nearby regions of Italy. My only request next year would be to reintroduce chemistry to the manufacturing conference, to give a more balanced series of presentations.

Hawkins Wright Nov. 2015 (LONDON)

The annual Hawkins Wright Symposium was held in the main hall of the Royal College of Surgeons, for the second year running. With a registered attendance of over 310, the audience was very slightly down on last year, but I counted representatives from 31 countries, which is a slight increase and indicates the global significance of both London Pulp Week and this event.

High attendance is a guarantee of sponsorship, and the list of companies willing to support the venture just continues to rise: 18 covered last year's event, while this time it had risen to 21 – **AkzoNobel**; **Altri**; **April**; **Cenibra**; **CMPC**; **Ence**; **Fibre United** (representing **UPM** and **Canfor**); **Fibria**; **FMS**; **Gearbulk**; **Ilim**; **Itochu**; **Mercer Pulp**; **Metsä**; **Norexecio**; **Omya**; **Södra**; **Storaenso**; and **Valmet**.

Before summarising the five talks it is worth noting the free gift left on each chair in the auditorium: Sweet Birch mints, branded by UPM, containing xylitol which comes from the same raw material as UPM Betula birch pulp. (Note: restraint is required with this beverage, because ingestion of xylitol in high quantities can have a laxative effect!)

Colin Hamilton (Macquarie Capital (Europe) Ltd)

The opening talk of the symposium is traditionally a scene-setter, often focusing upon economics, and so it fell this year to the very personable and informative Colin Hamilton, who outlined China's impact on commodity markets to date, and how this is likely to alter going forward. According to the speaker, China plays a very long game – since the Chinese Revolution of 1949, which brought Mao to power, China has had the plan to be the world's largest economy – by 2049. Only a command economy could aim for such a long term goal as no free market economy could plan so far ahead!

The three pillars of the Chinese economy are manufacturing, infrastructure and real estate. The latter is now showing negative growth. The past decade has seen rapid urbanisation and industrialisation, which has been financed by massive corporate debt, backed by the government. Now it needs to stimulate consumerism, and so shift the debt from corporations to consumers.

Current levels of growth are reportedly around 5%/pa. However, China has a two-tier economy: service sector growth is around 12%/pa, while industrial manufacturing is stagnant at near 0%/pa. The growth is also regional: the urbanised Southern provinces are experiencing positive growth, while the industrialised North (where among other things coal is mined) is in recession. Finally, the State-owned Enterprises are underperforming massively compared with the private sector; indeed, many SoE's are technically bankrupt, but are kept afloat artificially by the government.

Looking to the future, China is using infrastructure investment to regulate growth; this is helping to offset the poorer performance shown more recently by manufacturing. As regards the latter, consolidation of the over-capacity is likely in the short term, and expect the service sector of the economy to grow still more, at the expense of manufacturing.

Clay Ellis (International Paper)

This talk summarised the world importance of fluff pulp – the type of material used in female hygiene, baby diapers and adult incontinence products. In 2014 the grade accounted for around 25% of the total global softwood market pulp sector.

The pulp used for these products has stringent safety requirements; indeed it is regulated as a Class 1 medical device which means the supplier must certify quality and compliance. All the products using fluff pulp comprise, in addition, Super Absorbent Polymer (SAP) and textile / non-woven / plastic outer layers. The role of the fluff pulp is to provide comfort and padding for the wearer; to give a framework to trap and distribute the SAP; and to absorb any liquid penetrating the outer layers of the product and so distribute this to the SAP by wicking. To do these jobs effectively, a coarse thick-walled softwood fibre with a wide lumen (SBSK) is preferred, such as pulp coming from Loblolly or Slash Pine. Low coarseness softwood (such as NBSK) does not provide such efficient wicking performance, while hardwood is too short to provide either the wicking performance, or the network for SAP is distribution.

Although in the West we take these products for granted, in developing countries their lack of provision can be devastating. For example, Narendra Modi, the Indian PM, has linked the lack of sanitary and hygiene provision in rural India to high dropout rates for female students once they start menstruating; likewise, experience gained from Aid Agencies working with refugees all across the world suggests once needs for food, water and shelter are met, the next most popular requests are for Fem-Care and Diapers. Major growth of this sector is predicted for the foreseeable future, with current global growth reportedly 4%/pa.

Tugba Erdogan (Hayat Kimya)

Turkey has been investing heavily in machines and mills over recent years, as any reader of the Installations columns published in *Paper Technology*, online or in *Papermaking!*, would know, hence this timely talk entitled 'Dynamics of Turkish Pulp Market'.

Turkey is the 16^{th} largest economy in the world, while if compared just to the EU countries it would rank 6^{th}. GDP rose from US$231B in 2002 to US$800B in 2014. The population stands currently at 77.7 million, with 50% under 31, and inflation is around 7-8%.

Paper and Board consumption has risen from under 4MT in 2005, to near 6MT in 2015 – since Turkish manufacturing capacity is currently 3.2MT (mainly 41% corrugated, 21% P&W, 17% carton and 8% tissue), this makes the country a net importer. However, as regards tissue, the reverse is true; installation of capacity has been so rapid in recent years that Turkey is a net exporter of tissue and hygiene grades. The current installed tissue capacity is 760kT, which is set to rise to 940kT in 2017; consumption, on the other hand, has risen steadily at 12%/pa over the last decade, from 170kT in 2005 to 440kT in 2014. This is way ahead of the world average of 3.4%/pa, and reflects the change in GDP described earlier, and population growth.

In terms of market pulp use, Turkey imported 950kT in 2014 (46% Eucalyptus, 10% hardwood, 23% NBSK and 21% fluff), while in 2015 use is predicted to be 1.03MT (665kT for tissue, 200kT paper and board, and 165kT hygiene products). As regards certification, the internal market shows no great interest in either FSC or PEFC, but tissue manufacturers in particular have hit upon FSC as being vital for their export market. Finally, for historical reasons, Turkish manufacturers tend to spot-buy rather than go for longer term contracts with pulp suppliers.

Magnus Björkman (Södra Cell International)

This talk gave an overview of forestry in the Nordic region, highlighting some common misconceptions, and producing unusual facts and figures to show trends. For example, looking at the Swedish forest stock, the country had around 1.1Bm^3 of timber in 1915, which is estimated to have increased to 3.3Bm^3 currently. The current growth rate is 1%/pa, equivalent to 3m^3/sec – but at current utilisation rates only 2m^3/sec will be harvested, leading to yet further increase in stock. Furthermore, it is not just new plantation that is increasing; in 1938 the country had 1.5% 'Old Forest' – in 2008 this stood at 5.2%.

Swedish trees take 25-60 years to reach maturity. Annually they remove 100MT carbon dioxide from the atmosphere. Around 8% is conserved for nature conservation; FSC only requires 5%, so Sweden is exceeding requirements. Yet another way of looking at the forest is that, taking the number of trees, an approximation for the number of needles on a tree, and the needle dimensions, the Swedish forest has around 7Mm^3 of 'green' solar panel.

The overall message was that Nordic forestry is healthy, and industry based upon it is sustainable – yet getting that message out to the wider public (even in Nordic countries) is problematic. Once again, we must try harder to reach customers and consumers with positive messages relating to Forest Product Industries.

Oliver Lansdell (Hawkins Wright)

The annual roundup and forecast by Hawkins Wright is probably the main reason people attend this Symposium, and the presentation this year was entitled ‘Global Fibre Markets until 2019’. First the historical overview: paper and board production has risen from 230MT in 1990 to around 370MT last year – HW consider the ‘official’ values circa 400MT tend to over-rate the Chinese contribution by around 30MT. These figures have remained relatively static since 2006 due to the economic slowdown and loss of P&W grades. Going forwards, P&W levels should stabilise soon, and we can expect some modest growth in total P&B output.

Looking at the pulp sector, the recovered fibre market has plateaued at around 200MT; the integrated sector is in slow but long-term decline; and market pulp has shown year-on-year growth since 1990. Tissue in particular has been a major driver for the market pulp segment; tissue mills tend to be small making integrated manufacture unviable, and the decline in quality of RCF has pushed new tissue mills towards the virgin fibre market.

China has driven many markets (pulp, machinery, chemicals) in the last decade, but the slowdown there has a knock on effect to the market as a whole. Estimates of utilisation rates in China over recent years have given values of around 80%. For China to increase production rates to a more economic level, and so once again exert pull on the market pulp sector, they will need to stimulate then satisfy domestic demand. Recent devaluation of the Chinese Yuan Renminbi and efforts to increase exports of P&B have led to anti-dumping complaints in a number of countries. Furthermore, the Chinese Government still needs to close more of the highly polluting non-wood pulp mills (HW estimate around 4-5MT will go soon).

Turning to the bleached chemical pulp segment, a lot of new capacity is predicted to come online over the next year (around 6.3MT), such that capacity growth will outstrip demand. In the short term this must lead to capacity rationalisation, with older and less efficient market pulp mills closing, along with further loss of integrated mills and even closure of some DIP plant. Also, there has been a growth in swing mills (those that can switch between producing paper pulp and dissolving grades) – allowing the producer a foot in both the P&B and textile industries. With so much uncertainty of what will happen when the new mills start production, buyers are reminded that pulp mill closures or downtime tend to occur without prior warning – *caveat emptor* remains an important maxim!

Pöyry Investors Breakfast Dec. 2015 (LONDON)

This year marks the 11th Annual Investors Breakfast hosted by Pöyry Management Consulting, and once again it was conducted in the sumptuous surroundings of Stationers’ Hall. The subject this time was ‘Future of Packaging’, with two presentations: Jari Latvanen (**Stora Enso Oyj**) and David Powlson / Celedonio Moncayo-Quiros (**Pöyry Management Consulting**).

Jari Latvanen had a background in consumer brand management before joining Stora Enso, which is a more traditional B2B company. As such he brings to his new role this brand background, and encourages Store Enso staff to get involved with and become interested in their customers’ brands as a way of understanding the markets in which Stora Enso operate. The company sees three main areas of differentiation going forward with regard to their business: Micro Fibrillar Cellulose (MFC) for strength and stiffness; Barrier Coating with Bio-polymers for food safety; and Intelligent Packaging for customer interaction.

Turning to the second presentation, the first part of this used data from the recently completed report *Packaging Drivers from now until 2025*, sponsored by **Stora Enso UK** and **Kolbus UK**, performed by **Pöyry Management Consulting**, and available from **The Stationers’ Company**. The overall trends show all forms of packaging have growth potential, with paperboard, rigid plastics and flexible plastics forecast to increase most. The second part focussed upon the potential for investors in the rapidly expanding packaging sector; over the last three years, investments in fibre-based and plastic packaging sectors have typically outperformed the index of European consumer staple and industrial listed companies. Three case studies (**Nordenia**, **Constantia** and **Nampak**) were used to show how under-performing companies have recently been purchased, streamlined and redirected, in the course of which investors yielded very high returns.

The future of packaging in all forms – but especially for paperboard – looks rosy. Furthermore, with development particularly in bio-barrier materials, and MFC or nano-crystalline cellulose, further gains at the expense of the plastics sector are to be anticipated.

Energy Review

Steve Freeman
Director of Environmental & Energy Affairs,
CPI

Unfortunately for UK energy policy makers, 2015 is the year that price volatility fell away just as the cost of renewable electricity support policies went through the roof, (with the Renewable Obligation and Feed In Tariffs adding around £18/MWh to the cost of grid electricity), this leaves UK industrial electricity prices exposed as worryingly uncompetitive – as we've been warning would be the inevitable impact of UK energy policy.

With fossil fuel still underpinning UK electricity production, and coal being the marginal fuel of production, sustained low prices have resulted in lower base-load and generally lower power prices. However, this benefit has been swamped by rapidly increasing policy and distribution costs mostly linked to support for renewable generation and of course the major infrastructure changes required to handle new generation – it's not cheap to link an offshore wind farm to the grid!

Germany struggles with many similar problems but, critically, its Government accepted from day one that for its heavy industry to remain internationally competitive, then it must be protected from these costs.

By contrast it's taken the UK Government a number of years to learn the same lesson. While national attention has been focused on problems for the UK steel industry, papermakers are equally struggling with energy costs.

Most mills continue to receive compensation for the cost impact of the Carbon Price Floor, with additional compensation promised to address the increasing high costs from the Renewable Obligation and Feed-in-Tariffs. This should help address some of the concerns, though total cost of electricity is likely to remain high in the UK. This promise of additional support is welcome but, for some mills, is coming too late, with uncompetitive energy prices being quoted as a factor in a number of closures.

As well as high cost, security of supply is of increasing concern as older fossil fuel power stations continue to close together with a lack of investment in large scale replacement plant. Complicating the issue is a promise from DECC that all UK coal generation will be gone by 2025, and a new policy direction proposing that gas generation should be the main way to plug the gap. Putting on one side the view from the Committee on Climate Change that gas generation has no role past the early 2030s if the UK is to meet its self-imposed carbon reduction targets, there's a hard economic question over who's going to build this new plant. Any developer will expect to operate flat-out to pay for the asset, while DECC envisages the plant operation will be to balance demand in periods of high demand or low generation caused by intermittent renewables. Expect more policy details and increased cost as developers are incentivised to build. Assuming these costs come through Contracts for Difference, then at least mills will be partially sheltered, but even so overall prices will go up.

Against this background, it's not surprising that a number of mills are considering the opportunity to either revisit their own generation plant, or tweak production facilities to enable closer participation in electricity markets, both on the short notice supply side and demand reduction. These opportunities are likely to grow in importance over the next few years. And of course energy efficiency should be at the top of the list – far better not to use the energy in the first place.

Looking to 2016, PITA and CPI continue to support the 2050 Decarbonisation Roadmap study promoted jointly by BIS and DECC. The study looked in detail at eight heat intensive industrial sectors and examined the opportunities to decarbonise production as required if the UK is to retain heavy industry and meet long-term carbon targets. The overall report (available online) was rushed out before the general election, meaning much of the financial analysis and action planning is weak or missing. Now the Chancellor has confirmed the budgets for BIS and DECC, the next phase of the study can get underway looking in detail at action plans for each sector. The study provides a great opportunity for us to influence Government policy and hopefully Members will find time to participate.

2009-10	£3.61/MWh	2013-14	£8.66/MWh
2010-11	£4.11/MWh	2014-15	£9.70/MWh
2011-12	£4.80/MWh	2015-16	£12.86/MWh
2012-13	£6.43/MWh	2016-17	£15.43/MWh est

Table: Cost impact of the Renewable Obligation on grid electricity

Newsprint Review

Riku Kallio
Senior Consultant
Pöyry Management Consulting

I have just read what I wrote in this publication last year and decided to start this article the same way. Last year's article ended with the words "Finally we must recognise that the situation (Newsprint market) here (UK) is more positive than in some other countries". Regardless of this statement being true at the time, 2015 turned out to be hard for the UK paper industry, particularly Newsprint. Aylesford Newsprint has now closed and only two newsprint paper-machines remain. The closure of the Aylesford mill was somewhat surprising considering the paper-machines and mill site appeared potentially competitive when compared to other European newsprint machines and mills. Surely there are mills in Europe which have a clearly worse asset base and are at least in as challenging situation as Aylesford Newsprint was. The following paragraph shows another quote from last year's article.

"Some older newsprint machines may not be very efficient or profitable alone but are either "difficult to close" (e.g. due to costs linked to the closure) or actually contribute positively on the overall paper mill site's performance (e.g. linked to energy balance of the mill site, shared resources with other papermakers etc) or be fully depreciated. As such it is not always transparent on the outside what the different paper companies may be considering when decisions on capacity adjustments are made."

This is still true, and as stated, it is very difficult to predict which paper-machines, mills and companies will close capacity next. In the end the market is in a gradual decline and further capacity adjustments will be required.

The UK Newsprint production and consumption statistics for 2015 are yet to be confirmed, but it is clear that the production has decreased due to a capacity decrease of around 600kt in 2015. The two remaining newsprint machines left in the UK should have good potential to compete, particularly in the UK home market which continues to be a net importer of newsprint.

The UK Newsprint Capacity, Production and Consumption 2005-2015

Fibre cost

As is nearly always the case in papermaking, fibre contributes the largest share of the paper mill's costs. The fibre cost is a key challenge for Newsprint producers. ~75% of the European newsprint is based on recovered fibre – old newspaper and magazines (News&PAMs) mainly. Availability and price of News&PAMs is pushing pressure on the newsprint mills, and prices are expected to increase, driven by the stagnating collection rates and strong demand not only in Newsprint and Magazine paper (SC-paper) production but also in other paper grades such as lower quality tissue grades and cartonboard. Although the cartonboard (and containerboard) production is largely based on OCC and Mixed Paper it is good to also remember that Mixed Paper can consist of a relatively large amount of newspaper and magazines – and Mixed Paper is particularly desirable by some cartonboard mills which use mechanical fibre in the middle layers to improve bulk. The consequence of the declining News&PAMs collection potential, stagnating collection rates and robust demand means the supply:demand balance is getting tighter. Consequently this will result in price pressure.

Indeed, the situation with Mixed Paper is quite interesting in this context. When considering where the News&PAMs is collected from, one can easily start listing the places where you typically read your newspaper (the paper one…) – on the train, at work, at home, public places… The collection potential is fragmented. Collection sources include offices, industry and commercial sources as well as households. A large share of the newspapers and magazines are actually collected from places where the segregated collection of News&PAMs is not necessarily a viable option from the collection cost point of view. Collection of small volumes of one or two types of paper from many sources comes with high costs. Therefore, large volumes of newspapers and magazines are collected with other paper grades, such as carton or corrugated boxes, and need to be sorted to provide suitable raw material for newsprint production. With relatively small price difference between Mixed Paper and News&PAMs (combined with the decreased value of other recyclables such as plastics or metals), the incentive to sort News&PAMs from the Mixed Paper is relatively small.

Collection of UK Mixed Paper and News&PAMs show opposing trends. The News&PAMs collection has declined ~25% from the level 2014 whilst the Mixed Paper collection has increased ~60%. To increase the overall recycling rates in the UK more dry recyclables should be diverted particularly from the municipal waste stream (households etc). This is likely to mean more Mixed Paper in the market. If the News&PAMs are to be sorted out from the Mixed Paper this means increasing costs. But the paying capability of the P&W paper mills is currently not particularly high. There is little that the newsprint mills can do about the price of recovered paper. This means pressure to increase the price of newsprint.

Paper price

Obviously the paper prices have a strong impact on the paying capability and profitability of the newsprint mills.

Western European Newsprint Capacity and Production 1999-2015

Environment Review: What next for 2016?

Debbie Stringer
Environment Manager,
CPI

2015 was the Year of Permit Review as the process of integrating the requirements of the revised Pulp & Paper Best Available Techniques Reference Document (the sector BREF) got underway.

It began with a well-attended joint CPI and PITA BAT Workshop bringing together the regulators from England, Scotland and Wales with mill representatives. The Workshop gave mills and the regulators the opportunity to come together and gain an understanding of each other's expectations and concerns in demonstrating working to each BAT *(Best Available Techniques)* conclusion as specified in the BREF.

The permit review process then moved on in earnest with information requests, clarifications and mill visits. CPI and PITA have continued to work closely throughout, with both the regulator and mills, to seek a reasonable approach to interpretation of the BAT Conclusions and providing technical support where needed.

If 2015 was the ***Year of the Permit Review,*** what can we expect going into 2016?

In the first instance, certainly more of the same. The permit review process will continue beyond the anticipated 2015 deadline and is now expected to conclude around April 2016 with all mills receiving revised environmental permits. Permit conditions, when finalised, will shape each mill's approach to ensuring all are working to BAT and meeting the BAT AELs (*BAT Associated Emission Values*). It's important to note that compliance with BAT AELs is not legally required until 2018, even though permits will be issued during 2016.

Looking ahead and turning to Europe, the up and coming priorities centre on:

- **Air Emissions.** Two more BREFs of relevance to some mills – the Large Combustion Plant BREF for mills with combustion plant over 50MW and the Waste Incineration BREF potentially applicable to those co-firing waste materials. BAT and BAT AEL requirements from finalised BREFs will be incorporated into applicable mill permits.
- **Single Market for Green Products.** The development of a **single** methodology to calculate the Product Environmental Footprint (PEF) for products sold within and across the EU. Use of the footprint will be voluntary but if you use a footprint it must, ultimately, be this one. A pilot programme for developing and testing such methodology is underway for intermediate paper products including graphics, tissue and packaging.
- **EU Ecolabel.** Again a voluntary scheme but used by a number of CPI and PITA Members, the ecological criteria for paper products (including graphics, tissue and newsprint but not packaging) are being revised.
- **Systematic approach for Food Contact/ Harmonised EU measure.** Paper and board for food contact has been put forward for harmonised EU measures. CEPI is proposing such measures are based on existing Good Manufacturing Practice (GMP) and the Industry Guideline for food contact papers. This in preference to the myriad of national legislation.

Notwithstanding the proposal for harmonised measures, the myriad of national legislation may well present significant issues in 2016. Such proposed legislation is often based on minimal science, providing the potential for knee-jerk solutions that could impact on the use of recycled materials and the ability to recycle manufactured products.

Other issues likely to feature during 2016 include both legionella guidance and water abstraction reform.

Guidance for the paper sector on how to comply with the approved code of practice for the control of legionella was developed by an industry group during 2015. The guidance will "plug the gap" in the HSE Guidance which is scant on detail for processes other than water systems or cooling towers. The guidance requires the support of robust evidence, supplied in this case by the HSL project on proliferation of legionella in paper mills. As this project concludes, the guidance can be finalised and launched to assist the industry. Applicable in England and Wales only, reform of the freshwater abstraction regime has made little progress since before the election in May 2015. The long awaited government response to the consultation will give an indication of how the proposals for reform are to be narrowed down and an indication of a revised timetable to the legislation and implementation. The original timetable of legislation by 2015 with implementation commencing in 2020 has clearly slipped. 2016 will prove interesting times if a balanced and workable regime is to be developed. Key amongst the messages to be conveyed from the paper sector is that we **use water – we don't consume it!**

… and last but not least for 2016, we need to look ahead to the next Pulp & Paper BREF Review! The last BREF review suffered from a lack of proper mill environmental performance data, making it difficult to determine emission levels when working to BAT. A lack of data opens the door to unachievable limits being set. With three years data required for any BREF review, the how's and the why's of data collection need to commence now – a challenge for 2016.

As always, CPI will monitor and report on all of these issues and others as they arise, working closely with PITA in providing advice and potential solutions.

Newsprint Review (continued from page 16)

Looking at the current situation where many mills are facing significant cost pressure, it would be reasonable to expect that sooner rather than later the price of the paper must also be increased to compensate the raw material cost inflation.

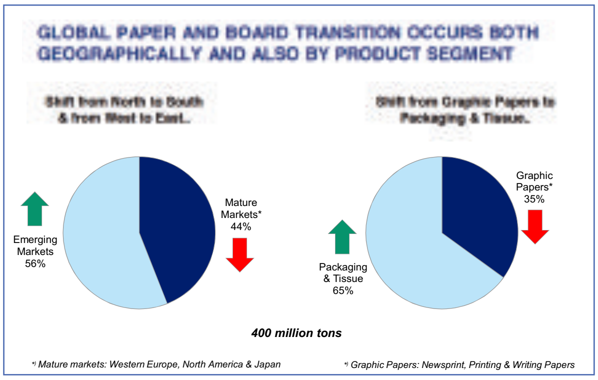
The capacity closures in the UK in 2015 were significant in scale even when considering wider European markets. 2014 capacity utilisation rate in Western Europe dropped to a low level, but due to capacity closures the 2015 utilisation rate is likely to increase to around the 90% level again. This gives newsprint producers a better position to push the required price increases through in 2016.

Tissue Review

Pirkko Petäjä
Principal Consultant,
Pöyry Management Consulting

Paper and board is in global transition both geographically and by product segment. The industry is shifting from North to South and from West to East and also from graphic papers to tissue and packaging.

The decline in mature markets driven by the fall of especially newsprint and printing and writing paper (graphic paper) consumption is more than offset by the strong growth of all paper and board in the emerging markets. Global transition of the grades is due to the fact that especially tissue and packaging paper consumption both in mature but especially in the emerging markets is expected to grow.



World tissue paper production has grown by about 1 million tonnes per year during the past 5 years, and exceeded 30 million tonnes already some years ago.

A number of megatrends and specific consumer market trends support the long-term growth of global tissue demand; the correlation is, however, strongest with economic development and population growth. GDP per capita has a strong interrelationship with tissue paper consumption per capita.

Therefore tissue demand growth will continue to be driven by socio-economic factors such as urbanisation, disposable incomes and consumer spending. In most countries, the development of a middle-class consumer segment will be the key catalyst for growth – allowing improved penetration of a wide range of tissue products and shift towards higher quality (multi-ply) products.

Tissue market has been growing fastest in Asia, China in particular. Asia represents currently some 40% of the global tissue market.

In China, a tissue paper market has grown by a dynamic 8-9%/a over the last decade and China has become the second largest tissue market in the world after North America, followed by Western Europe as the third.

Following the brisk market growth also the increase of capacity in China has been very fast. Tissue capacity doubled from 2008 to 2014 as tissue became a hot investment spot; however, overinvestment has resulted in overcapacity and has further caused continuous drop in the operating rates. The growth in China is expected to continue at a slower rate (5%/a through 2030) due to several reasons. In the longer run the strengthening middle class continues to support the growth in China.

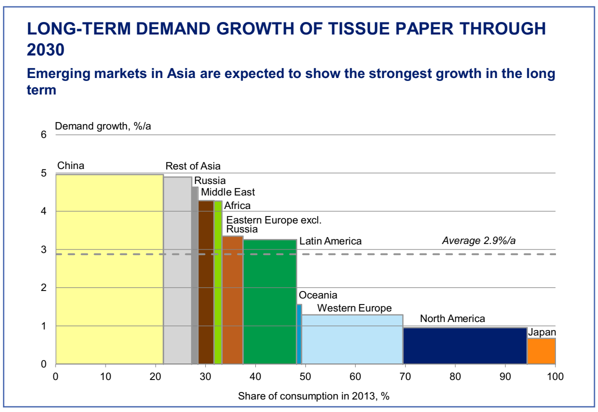
Maturing markets in the West will continue to grow but at a slower rate. Quality trends and demographics are the key drivers supporting the growth in the West.

What is topical in Europe?

The European tissue market continues to grow at a steady 2-3%/a (depending on forecasting span). The mature Western European market grows at an average below 2%/a and the emerging Eastern European market is boosting the total growth with the average 4-5% annual growth rate.

Brisk capacity additions continue especially in Eastern Europe. The most important countries are Russia and Poland that together account for close to 60% of the total Eastern European market.

The UK tissue market grows at the average Western European rate supported by general economy. Independent converting industry is relatively large in the UK and characteristic is that the UK is a net importer of both jumbo reels and converted products; roughly one third of the over million ton market volume is imported as reels or as finished goods. The UK is an interesting target market and opportunity for many suppliers.



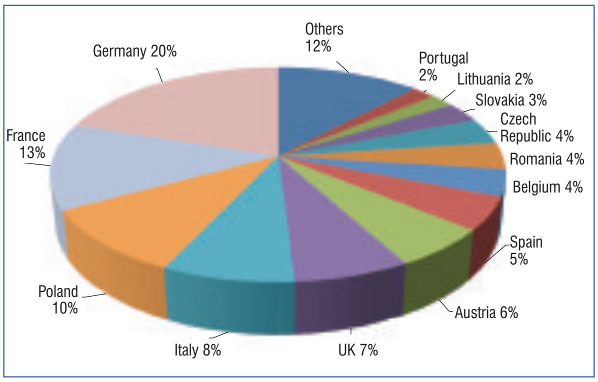
Wood-Based Panels Industry Review

Isabelle Brose
Economic Adviser,
European Panel Federation

Following several years of decline, the European particleboard production in the EPF member countries upturned by 2.5% in 2014 and exceeded the projection made last year. Output amounted to 29 million m³ although this production level remains far below the output peak of 37.8 million m³ observed in 2007.

In 2014, significant increases of output were noted in Hungary, Latvia, Poland, Portugal, Spain and Norway. It is worth noting the actual recovery of activity in Iberia. On the other hand, production continued to collapse in Greece and declined to a lesser extent in Sweden. Concerning Greece, it is important to underscore that a large part of the capacities was shut down in 2014. On the contrary, facilities have been expanded in Hungary.

With a slightly increasing output, Germany remained the largest particleboard producing country in Europe in 2014, accounting for merely less than one fifth of the EU-EFTA production volume. France and Poland continued to complete the particleboard producers' podium. France kept its second position despite a small decrease in its production and the significant progression of the Polish output. Italy where production decreased moderately and the United Kingdom where output grew steadily fulfilled the top 5 and the club of the producers of more than 2 million m³ of particleboard in 2014. Together, these five countries accounted for 57.5% of the total EU-EFTA production in 2014.



Breakdown of particleboard production by country in 2014

As forecast, the overall European particleboard production capacity remained relatively stable in 2014 and rose very moderately by 0.4% or 150,000 m³. It amounted to almost 39.5 million m³. Some restructuration of capacities took place in Spain and Belgium while projects started to be operational in Bulgaria, Hungary and the Slovak Republic.

The expectations for this year are stable. The rise in production in the EU-EFTA area as a whole is estimated at +0.6% for 2015. This should result in a particleboard production slightly above 29 million m³.

In 2014, MDF production in Europe grew further by 2% reaching 11.5 million m³, excluding Turkish and Russian production. However, this production level remains significantly lower than the peak of 13.3 million m³ observed in 2007. With an increasing output of about 3.6 million m³, Germany is still the largest European MDF producer in 2014. Poland kept its second position while Italy had taken back its third position to France on the podium. Spain and France completed the top five of the European MDF producers. The joint output of these five countries accounted for an increasing share of 78% in the overall European MDF production in 2014. The overall capacity utilisation rate increased from 74% in 2013 to 77% in 2014. In 2014, MDF consumption in Europe rose by 4.1% and exceeded 10.5 million m³.

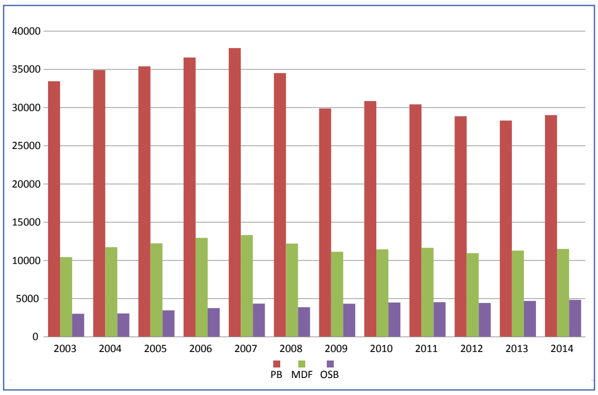
Despite a small increase in Italy, the European production capacity of MDF fell by 345,000 m³ in 2014, reflecting the expected closure of a plant in Austria in January 2014 and some downsizing in Spain. The total capacity amounted to a little less than 15 million m³ in 2014

EPF is currently re-evaluating its production statistics for OSB which were clearly an underestimation of the market these last years. The European production of OSB rose by 3% in 2014 and exceeded 4.8 million m³. Germany and Romania have the largest European OSB production capacities. Thanks to an efficiency investment in Belgium, the European production capacity of OSB increased slightly in 2014 and almost reached the 5.6 million m³ threshold.

In 2014, the production of hardboard in Europe decreased slightly by 1% compared to 2013, exceeding 565,000 m³ excluding Russia. For Europe as a whole, home sales fell by 2% while exports remained stable. 93% of sales went towards EU28, EFTA, Russia, Turkey and the Balkans compared to 92% in 2012.

For the third year in a row, the European production of softboard increased. In 2014, output rose by 6% compared to 2013, exceeding the 4 million m³ threshold. Rigid softboard accounted for 67% of the output and flex softboard for 32%. 95% of the sales went towards EU28, EFTA, Russia, Turkey and the Balkans.

At last, the general economic situation in Europe is showing slow but steady improvements. Consumers' confidence and other indicators continue their positive development. With the exception of hardboard, markets for all types of panels represented by EPF are growing and expectations for the near term are cautiously optimistic.



Overall production of Particleboard, MDF and OSB in Europe (1,000 m³), 2003-2014

Tissue Review (continued from page 18)

Transition of the paper industry is shaping also the European tissue business. New entrants appear due to escape from graphic papers or in search of competitiveness for smaller pulp mills. In addition, tissue is becoming increasingly important for the whole forest industry cluster; for instance for machinery and equipment suppliers and for pulp producers. Tissue end use accounts for more than half of the markets of many significant market pulp suppliers, especially of BHKP.

European Containerboard and Corrugated Board Review 2015

Outti Juntti,
Senior Principal,
Pöyry Management Consulting Oy

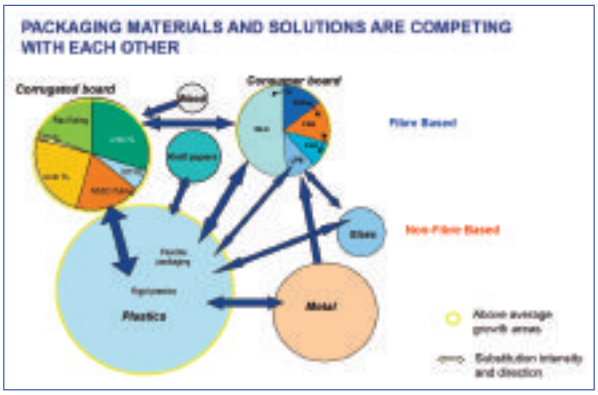
Positive development throughout Europe

If one should describe the European containerboard and corrugated board markets in 2015 with two words, staid and robust are the words that first come into one's mind. Corrugated box demand continued good growth in all the main countries and especially the large Southern European markets and Poland were performing well during the whole year. In Italy price increases in both containerboard and corrugated boxes were announced already in May and demand during the first three quarters was some 6% higher than last year. Similar market growth took place in Spain. The Polish market was brisk the whole year and several price increases were introduced.

The three largest European markets – German, France and the UK – demonstrated a steady development at over 2% during the first three quarters.

Innovation is the key in competition with other packaging materials

An important driver for use of containerboard and corrugated containers has been — and this is expected to continue in the future — its transformation from transport packaging into carefully designed consumer or retail-ready packages with a shiny white surface and high-quality printing. This development is partially driven by the increasing requirements of retail, consumers and brand owners. The corrugated and containerboard industry, however, has also been actively promoting itself, pursuing the growth opportunities represented by this market. Development of retail and consumers' purchasing habits are critical factors for the success and growth of containerboard and corrugated board industry. In this respect e-commerce is one of the most important drivers as the B2C e-commerce is estimated to have over 10% annual growth rates this year and is expected to continue demonstrating robust growth in the coming years as well. Certainly this packaging growth will not benefit only the corrugated markets and competition with other packaging materials and solutions will continue intense. Flexible and rigid plastic packaging, i.e. shrink wrap and plastic trays, are the main competing materials for corrugated containers. Retailers and brand owners have a great impact on this as they make the strategic decision on the packaging solution depending on which segment, consumers or geographies they are targeting with their products.



Expansions, conversions and acquisitions keep on proceeding

In the annals of European containerboard industry, the year 2015 will be remembered as another very active period in the industry development and reshuffling. During the few previous years the Western European countries, especially Germany and the UK, have been the centre of activity as far as investments are concerned whilst the other parts of Europe have been a bit more stable. But in 2015 capacity expansions, acquisitions and investment plans have taken place and announced in all parts of the continent.

The virgin fibre based containerboard (ie. kraftliner and NSSC-fluting) production capacity remained rather stable for years and the activity was limited into smaller expansions of the existing mills. However, this year has been exceptional. First, in May, Metsä Board started-up its BM2 in Husum, Sweden. The machine is a conversion from woodfree papers into bleached linerboard with annual capacity of some 300,000 tonnes. Another transformation from P&W segment into packaging took place in Finland as Stora Enso's Varkaus BM3 came on stream in October. The machine is producing some 400,000 tonnes unbleached and white-top kraftliner annually.

As far as new start-ups are concerned the recycled containerboard industry was actually rather staid as Aviretta's PM4 in Ettringen Germany was the only machine commencing operation this year. However, there were more announcements of investment plans, totally new machines, conversions and expansions, than what we have seen in any year after the crisis in 2009. Decline in the graphical sector and the rather bright outlook in the packaging side seem to lure many companies, and several traditional P&W producers have announced they are investigating in opportunities to enter the testliner and recycled fluting sector. A few investment decisions have already been made, and Parenco's PM2 in Renkum, The Netherlands, is scheduled to start during 2016 - this will be the first one in the market. As many of those P&W paper machines where the conversions are planed are up to 8m wide, the planned projects are rather sizeable, each bringing up to 400,000 tonnes annually if realised. Technically the conversions are in most cases rather straightforward and machines are typically modern and well-invested. However, the success will depend on the chosen business concept and client base as well as recovered fibre sourcing arrangements in this already busy industry.

The leading companies have continued to focus on developing their business, particularly in the converting side. DS Smith has been active in the acquisition front; in May it completed the Duropack deal, which gave it a significant footprint in the South Eastern European corrugated markets and later this year it acquired Spanish Lantero, Cukurova Group in Greece and Milas in Turkey. After acquiring three companies in the US SmurfitKappa Group has lately been focusing in Europe as well; acquisition of Inspirepac, high quality print and display business from the Logson Group and majority shares of Beacon Packaging, both in the UK, belong to the movements done this year. However, the company's expansions in the US corrugated business continued as well and in October it made two more acquisitions: Sound Packaging LLC and Corrugated Professionals LLC both located in Arizona.

Industry Statistics 2014

Information supplied courtesy of CPI, CEPI and HM Revenue and Customs

2014 – Summary

The drop in production from 2013 to 2014 (roughly 170,000 tonnes) is mainly attributable to the closure of both machines at Smurfit Kappa Snodland mid-2013, in preparation for the installation of their new machine, which was due to start in late 2014, but was delayed.

2015 – Preliminary Assessment

The relatively settled performance of 2014 was but a prelude to the major disturbances of 2015. We already knew of the impending closure of UPM Shotton PM1 (215,000 tonnes newsprint) before the start of the year, so had an inkling that 2015 might prove difficult. However, in retrospect it proved much worse than expected!

Shotton PM1 closed 5 February, to be followed less than three weeks later by the unexpected closure of Aylesford Newsprint (around 400,000 tonnes newsprint). In less than a month these two events roughly halved the annual output of UK newsprint – a grade which alone accounted for over 25% of total UK paper production in 2013.

In late April, Tullis Russell Papermakers Ltd. filed for insolvency, partly due to a bad debt incurred through the collapse of merchant Paperlinx UK, although later the TR management admitted they had been actively seeking a buyer since late 2014. This closure removed over 100,000 tonnes of product from the market, and with the complicated operation inherent in a specialist mill of this size, saw almost 500 staff made redundant. (Fortunately, the Tullis Russell coating operation in Cheshire is unaffected).

During the summer the long-awaited closure of Whatman's small Springfield Mill took place. Since this had been on the cards since early 2013, and had been delayed many times due to having to qualify the new production facilities in Europe and China with various customers, at least the closure did not take anyone by surprise. Also, at the end of August, SCA closed PM1 at Ramsbottom Mill near Bury, due, it was reported, to the machine making a size of tissue mother reel for which demand is low in the UK.

The final closure of the year (at least at the time of writing) involves DS Smith Wansbrough Mill in Watchet, Somerset. The site produces 180,000 tonnes per annum of testliner and recycled grades, and will close by 23 December.

Overall, it looks as if 2016 will start with around one million tonnes lower production capacity, and over one thousand fewer mill staff.

On a more positive front, Smurfit Kappa Snodland has been operating the refurbished machine since mid-year. Fourstones started a new Towel machine at Sapphire Mill. Finally, Moulded Fibre Products Ltd., which opened in Scunthorpe during 2013, reportedly installed a new line in late 2014, and another in mid-2015 – but tonnage on either is small.

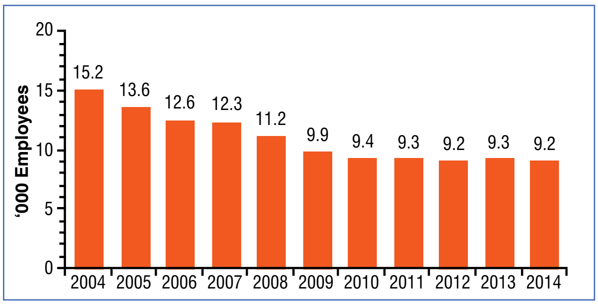
2016 – Preview

It is hoped the Snodland machine performance proves satisfactory soon, allowing this mill to get back to the 250,000 tonnes production level it achieved previously. Aside from this, there is nothing else to anticipate at present as regards mill or machine changes for next year.

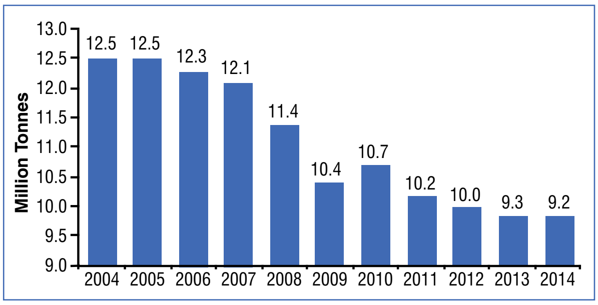
Daven Chamberlain, Editor, Paper Technology

UK Data (CPI/HM Revenue & Customs)

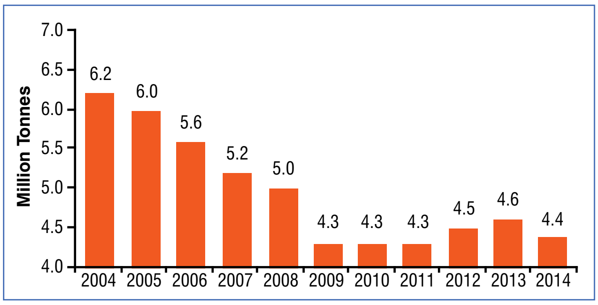
Numbers Employed in the Paper Industry 2004-2014



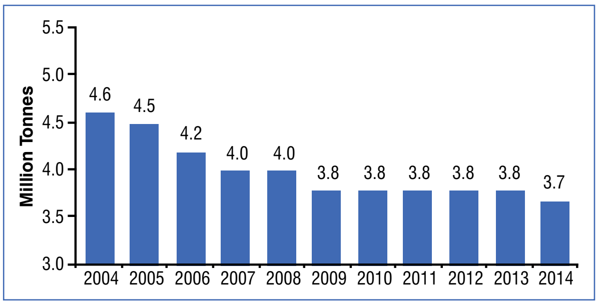
UK Consumption of Paper and Board 2004-2014



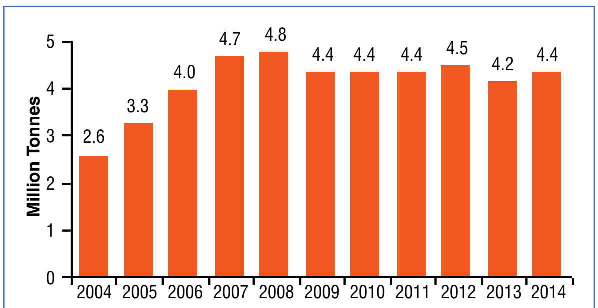
UK Production of Paper and Board 2004-2014



Recovered Paper Usage in UK Papermaking 2004-2014

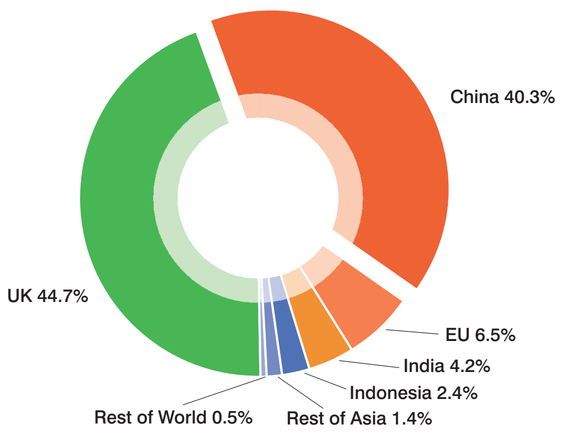


Recovered Paper Exports 2004-2014



Source: HM Revenue & Customs

Recovered Paper Markets 2014



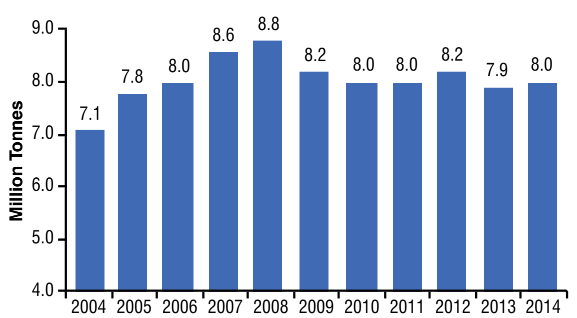
Sources: CEPI, HM Revenue & Customs

Industry Facts 2014

CPI Member Companies	70
CPI Member Employees	19,000
Paper & Board Production* ('000 Tonnes)	4,393.0
Corrugated Production (Million Sq. Metres)	3,615.3
Recovered Paper Collection ('000 Tonnes)	8,013.6
Tissue Parent Reel Production ('000 Tonnes)	768.3

* includes parent reel production

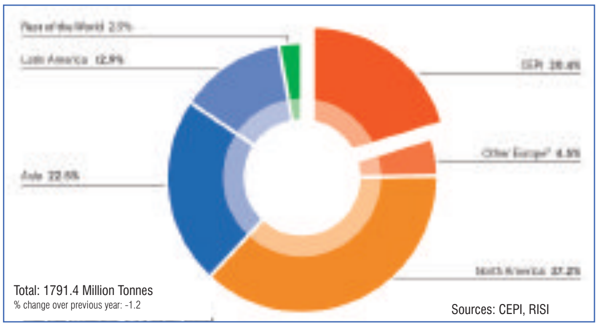
Recovered Paper Collection 2004-2014



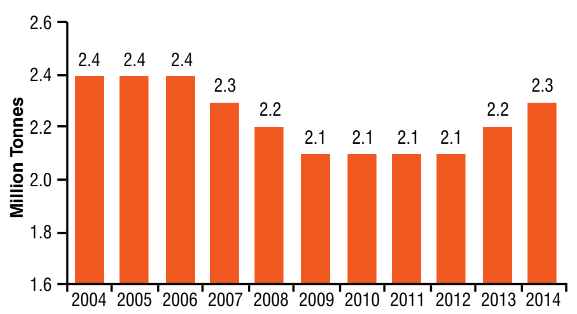
European Data (CEPI)

Pulp – Global View

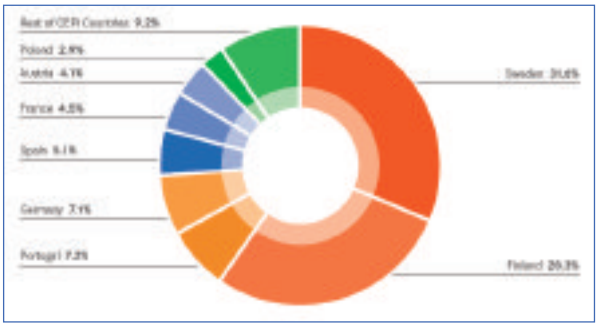
Pulp Production by Region in 2013



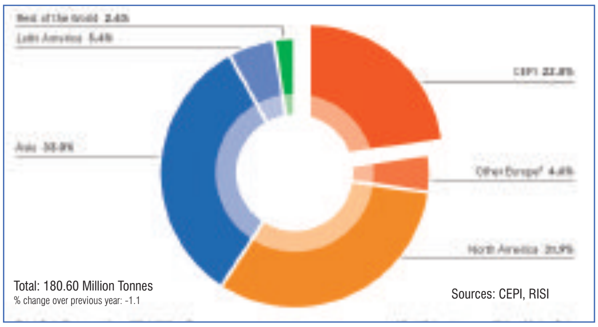
Consumption of Paper by Corrugators 2004-2014



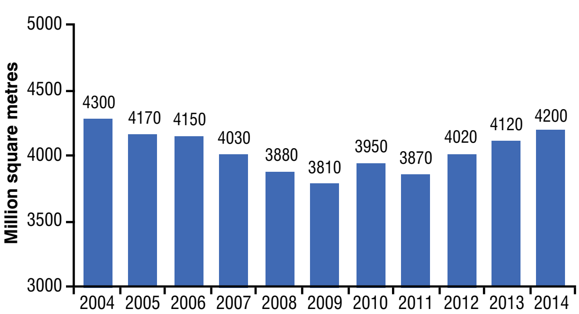
Pulp Production by CEPI Country in 2014



Pulp Consumption by Region in 2013

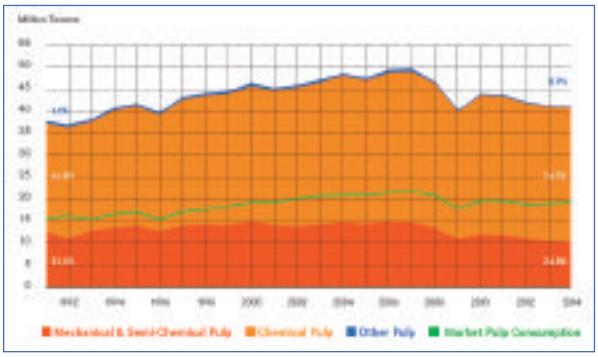


Corrugated Production of Corrugated Boxes 2004-2014



Sources: 2003 FEFCO; 2004-2013 CPI

Pulp Consumption by Grade CEPI Countries in 1992-2014



Pulp

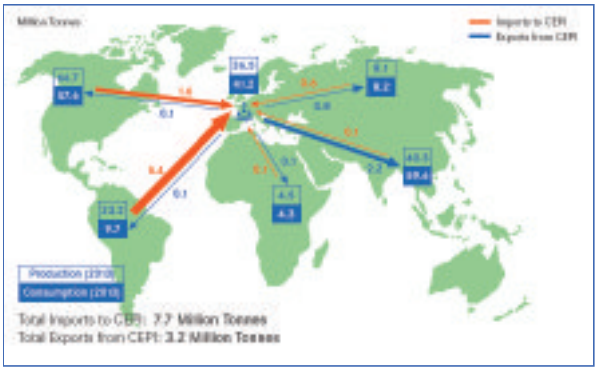
CEPI Exports of Pulp to Other Regions 2000-2014

000 Tonnes	2000	2005	2010	2013	2014	% Share of Total	% Change 2014/2013
Other Europe	724	674	719	807	**791**	24.4	-2.0
North America	104	187	62	60	**46**	1.4	-23.7
Latin America	6	20	49	73	**65**	2.0	-11.33
Asia	412	1,076	1,595	2,689	**2,200**	67.9	-18.2
Rest of the World	86	114	142	156	**137**	4.2	-12.4
Total	**1,332**	**2,071**	**2,567**	**3,785**	**3,239**	**100.0**	**-14.4**

CEPI Imports of Pulp from Other Regions 2000-2014

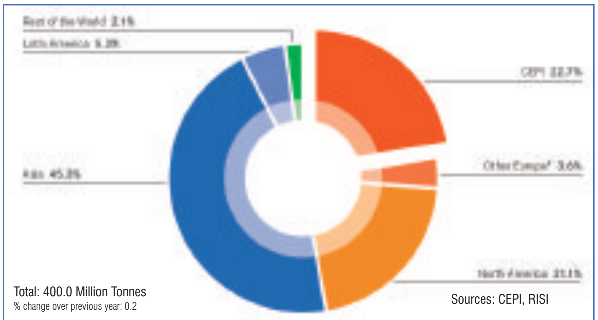
000 Tonnes	2000	2005	2010	2013	2014	% Share of Total	% Change 2014/2013
Other Europe	657	615	480	638	**608**	7.8	-4.7
North America	4,623	3,891	2,292	1,965	**1,578**	20.4	-19.7
Latin America	1,916	2,825	4,733	4,972	**5,378**	69.4	8.2
Asia	272	197	134	69	**97**	1.3	40.2
Rest of the World	456	433	81	77	**83**	1.1	8.9
Total	**7,924**	**7,961**	**7,721**	**7,721**	**7,745**	**100.0**	**0.3**

Trade Flows of Pulp to and from CEPI Countries in 2014

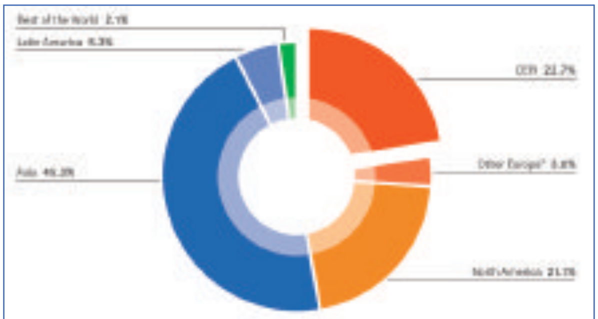


Paper – Global View

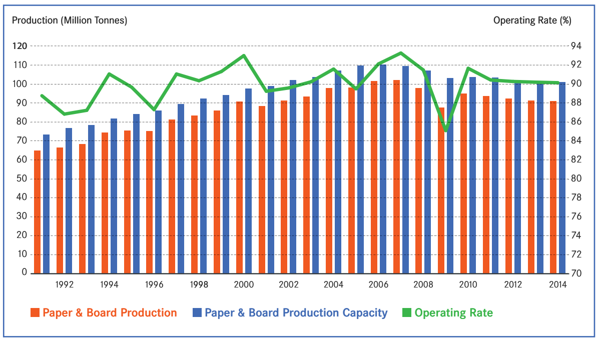
Paper & Board Production by Region in 2013



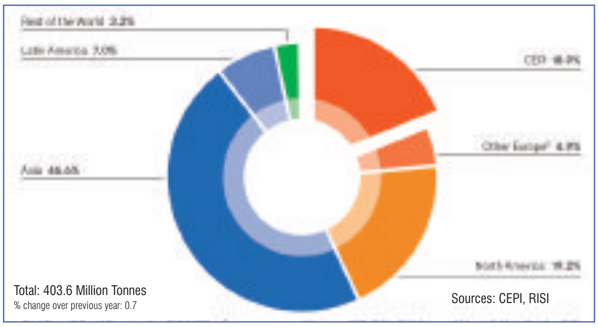
Paper & Board Production by CEPI Country in 2013



Paper & Board Production and Consumption in CEPI Countries 1992-2014



Paper & Board Consumption by Region in 2013



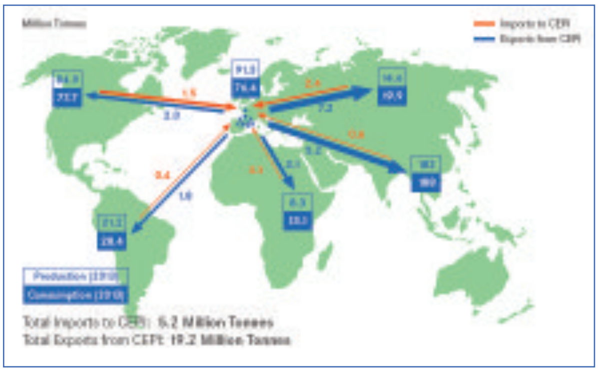
CEPI Exports of Paper & Board to Other Regions 2000-2014

000 Tonnes	2000	2005	2010	2013	2014	% Share of Total	% Change 2014/2013
Other Europe	6,090	6,825	7,349	7,428	**7,188**	37.5	-3.2
North America	2,283	2,802	2,055	2,000	**1,957**	10.2	-2.2
Latin America	874	1,194	1,879	1,863	**1,774**	9.3	-4.8
Asia	2,933	4,742	5,099	5,267	**5,193**	27.1	-1.4
Rest of the World	1,707	2,229	2,783	3,091	**3,053**	15.9	-1.2
Total	**13,887**	**17,793**	**19,164**	**19,649**	**19,164**	**100.0**	**-2.5**

CEPI Imports of Paper & Board from Other Regions 2000-2014

000 Tonnes	2000	2005	2010	2013	2014	% Share of Total	% Change 2014/2013
Other Europe	3,318	2,727	2,525	2,165	**2,417**	46.7	11.6
North America	2,191	1,915	1,829	1,4405	**1,507**	29.1	4.6
Latin America	198	498	498	387	**359**	6.9	-7.2
Asia	332	394	625	540	**581**	11.2	7.5
Rest of the World	344	369	307	268	**313**	6.0	16.8
Total	**6,383**	**5,903**	**5,783**	**4,800**	**5,177**	**100.0**	**7.9**

Trade Flows of Paper & Board to and from CEPI Countries in 2014



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The General Secretariat remains in Paris primarily for legal reasons as EUCEPA is a French registered body. In practical terms the operation of EUCEPA is hosted on a six month rotation by the member Associations.

***NB** to dial any European telephone number from the UK, replace (+) by (00);*
to dial the UK from Europe prefix UK by (00) with the exception of Spain which is (07) and Sweden (009)

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Manager: Gabriele Herzog & Yvonne Groiss

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Chairman: Jan Gojný
Secretary: Ludmila Belicová

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Chief Executive: Barry Read

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Year and Place of Foundation: 1981, Tomar
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Chairman: Eva Karlsson Berg
Executive Director: Marina Asp

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Chairman: Robert Dufresne

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Year of Foundation: 1972
President: Alex Ruf
General Secretary: Marco Rodriguez

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Chief Operating Officer: Neehar Aggarwal

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Year of Foundation: 1947
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Year of Foundation: 1915
President: Larry Montague
Chairman: Chris Luettgen

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Year of Foundation: around 1985
President: Erasmo Jiménez

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B

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Website: www.billerudkorsnas.com
Contact: Ying Sou

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Website: www.bimkemi.com
Contact: Julian Wood

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Website: www.bbchem.co.uk
Contact: Martin Wroe

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Bury, Lancashire, BL8 4QG
Tel: 01204 886879
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Website: www.picon.com
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Belgium
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Website: http://buckman.com
Contact: Sean Sunley

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Contact: Mick Hamilton

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Contact: Andrew Nash

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Tel: 01795 5189 Fax: 01795 414212
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Website: www.dssmithpaper.com
Contact: Guy Lacey

E

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F

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G

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Contact: Yannick Rabot

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www.petergrantpapers.com
Products: Tissue

28 NORTHWOOD & WEPA
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Mid Glamorgan, CF34 9RS
Tel: 01656-684500
Products: Tissue

29 PALM PAPER LTD
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www.sca.com
Products: Tissue

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Tel: 01661-806000
www.sca.com
Products: Tissue

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Tel: 01706-283000
www.sca.com
Products: Tissue

40 TRAFFORD MILL
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www.sca.com
Products: Tissue

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tissue.co.uk
Products: Tissue

45

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British Paper Machinery Suppliers Association (BPMSA)	www.picon.com
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British Wood Pulp Association (BWPA)	www.bwpa.org.uk
Confederation of Paper Industries (CPI)	www.paper.org.uk
Forest Stewardship Council (FSC) UK	www.fsc-uk.org
Independent Waste Paper Processors Association (IWPPA)	www.iwppa.co.uk
Packaging Federation	www.packagingfedn.co.uk
Paper and Board Association (P&BA)	www.paperandboard.org.uk
The Paper Industry Gold Medal Association	www.papergoldmedal.org.uk
Programme for the Endorsement of Forest Certification (PEFC) UK	www.pefc.co.uk
Recycling Association	www.therecyclingassociation.com
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Sheet Plant Association (SPA)	www.sheetplantassociation.com
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www.norbord.co.uk

61 **SMARTPLY EUROPE LTD (OSB)**
Belview, Slieverue, Waterford, Ireland
Tel: +353 51 851 233
www.smartply.com

62 **SUNDEALA LTD (softboard-type material)**
Middle Mill
Dursley, Gloucestershire, GL11 5LQ
Tel: 01453-540900
www.sundeala.co.uk

71 **ARMSTRONG WORLD INDUSTRIES LTD (ceiling tiles)**
Gateshead,
Tyne & Wear NE11 OSP
Tel: 0191 497 1000
www.armstrong.com

WOOD PANEL INDUSTRY FEDERATION (WPIF)
Autumn Park Business Centre
Dysart Road, Grantham
Lincolnshire, NG31 7EU
Tel: +44 (0) 1476 512 381
www.wpif.org.uk

EUROPEAN PANEL FEDERATION (EPF)
24, rue Montoyer box 20
B-1000 Brussels
Belgium
Tel: +32 2 556 25 89
www.europanels.org

Moulded Pulp Mills in the UK & Ireland

63 **ROBERT CULLEN LTD**
10 Dawsholm Avenue,
Dawsholm Industrial Estate,
Glasgow, G20 0TS
Tel: 0141 945 2222
www.cullen.co.uk

66 **HUHTAMAKI (LURGAN) LTD**
41 Inn Road, Dollinsgtown, Lurgan,
Co. Armagh, BT66 7JN
Tel: 02838 327 711
www2.huhtamaki.com

67 **MOULDED FIBRE PRODUCTS LTD**
Flixborough Industrial Estate
Scunthorpe, Lincolnshire, DN15 8SD
Tel: 01724 847 207
www.mouldedfibreproducts.com

68 **PAPER PULP SOLUTIONS**
Pulp Mill House, Banton Road,
Glasgow, G65 0QG
Tel: 01236 829 052
www.paperpulpsolutions.co.uk

69 **VERNACARE LTD**
Folds Road, Bolton, Lancashire, BL1 2TX
Tel: 01204 529 494
www.vernacare.com

Map of the Mills in the UK & Ireland

Key to entries

- Paper Mill
- Panel Board Mill
- Moulded Pulp Mill

Mills in the Benelux Region

B1
AHLSTROM MALMEDY S.A.
Av. Du Pont de Warche, B-4960 Malmedy
Tel: +32 (0) 80 79 54 11
www.ahlstrom.com

N22
ARJOWIGGINS SECURITY B.V.
Postbus 648, 7300 AP Apeldoorn
Tel: +31 (0)55 - 533 21 32
www.security.arjowiggins.com

B2
BURGO ARDENNES S.A.
Rue de la Papeterie 1, B-6760 Virton
Tel: +32 (0)63 - 58 71 11
www.burgo.com

B4
CATALA S.A.
Grand Route 302, 1620 Drogenbos
Tel: +32 (0)23 - 34 06 11
www.catala.be

N1
COLDENHOVE PAPIER B.V.
D.W. van Vreeswijklaan 9
6961 LG Eerbeek
Tel: +31 (0)313 - 67 06 70
www.coldenhove.com

N2
CROWN VAN GELDER B.V.
Postbus 30, 1950 AA Velsen-Noord
Tel: +31 (0)251 - 26 22 33
www.cvg.nl

N23
DE SCHOOLMEESTER PAPIERMOLEN
Guispad 3, NL-1551 SX Zaandijk
Tel: +31 (0)75 - 621 44 65
www.zannschemolen.nl

N18
D.S. SMITH PAPER – de hoop mill
Harderwijkerweg 41, 6961 GH Eerbeek
Tel: +31 (0)313 - 67 79 22
www.dssmith-paper.com

N26
ENKEV B.V.
De Toek 2, P.O. Box 3, 1130 AA Volendam
Tel: +31 (0)299 - 36 43 55
www.enkev.com

N4
ESKA GRAPHIC BOARD B.V.
Noorderstraat 394, 9611 AW Sappemeer
Tel.: +31 (0)598 - 31 89 11
www.eskagraphicboard.com

N5
ESKA GRAPHIC BOARD B.V.
M. Veningastraat 114-116, 9601 KJ Hoogezand
Tel: +31 (0)598 - 31 89 11
www.eskagraphicboard.com

N27
HUHTAMAKI NEDERLAND B.V.
Zuidelijke Industrieweg 3-7, 8801 JB Franeker,
Tel: +31 (0)517 - 39 93 99
www2.huhtamaki.com

B6
IDEM PAPERS S.A.
Rue d'Asquempont 2, 1460 Virginal-Samme
Tel: +32 (0)67 - 64 42 11
www.idempapers.com

B5
ECOPLA BOOMPLATEN
Vaucampslaan 84, 1654 Huizingen
Tel: +32 (0)23 56 57 89
http://boomplaten.be

L1
KRONOSPAN SANEM S.A. (OSB, MDF)
Zone Industrielle, 4901 Sanem
Tel: +35 (0)25 - 90 31 11
www.kronospan.lu

N8
MAYR-MELNHOF EERBEEK B.V.
Coldenhovenseweg 12, 6961 ED Eerbeek
Tel: +31 (0)313 - 67 51 11
www.mm-karton.com

N9
MEERSSEN PAPIER B.V.
Weert 78, 6231 SB Meerssen
Tel: +31 (0)433 - 66 35 00
www.meerssen-papier.com

N24
NEDERLANDS OPENLUCHTMUSEUM
(The Netherlands Open Air Museum)
Hoeferlaan 4, 6816 SJ Arnhem
Tel: +31 (0)263 - 57 61 11
www.openluchtmuseum.nl

B13
NORBORD N.V. (OSB)
Genk, Eikelaarstraat 33, 3600 Genk
Tel: +32 (0)89 - 50 03 00
norbord.be

B8
VPK PAPER N.V.
Oude Baan 120, 9200 Dendermonde
Tel: +32 (0)52 - 26 19 11
www.oudegempapier.com

N28
PAPER FOAM
Hermesweg 22, 3771 ND Barneveld
Tel: +31 (0)342 - 40 16 67
www.paperfoam.com

B12
PAPER MILL HERISEM
Fabriekstraat 20, B-1652 Alsemberg, Brussels
Tel: +32 (0)473 38 32 30
www.herisem.be/en

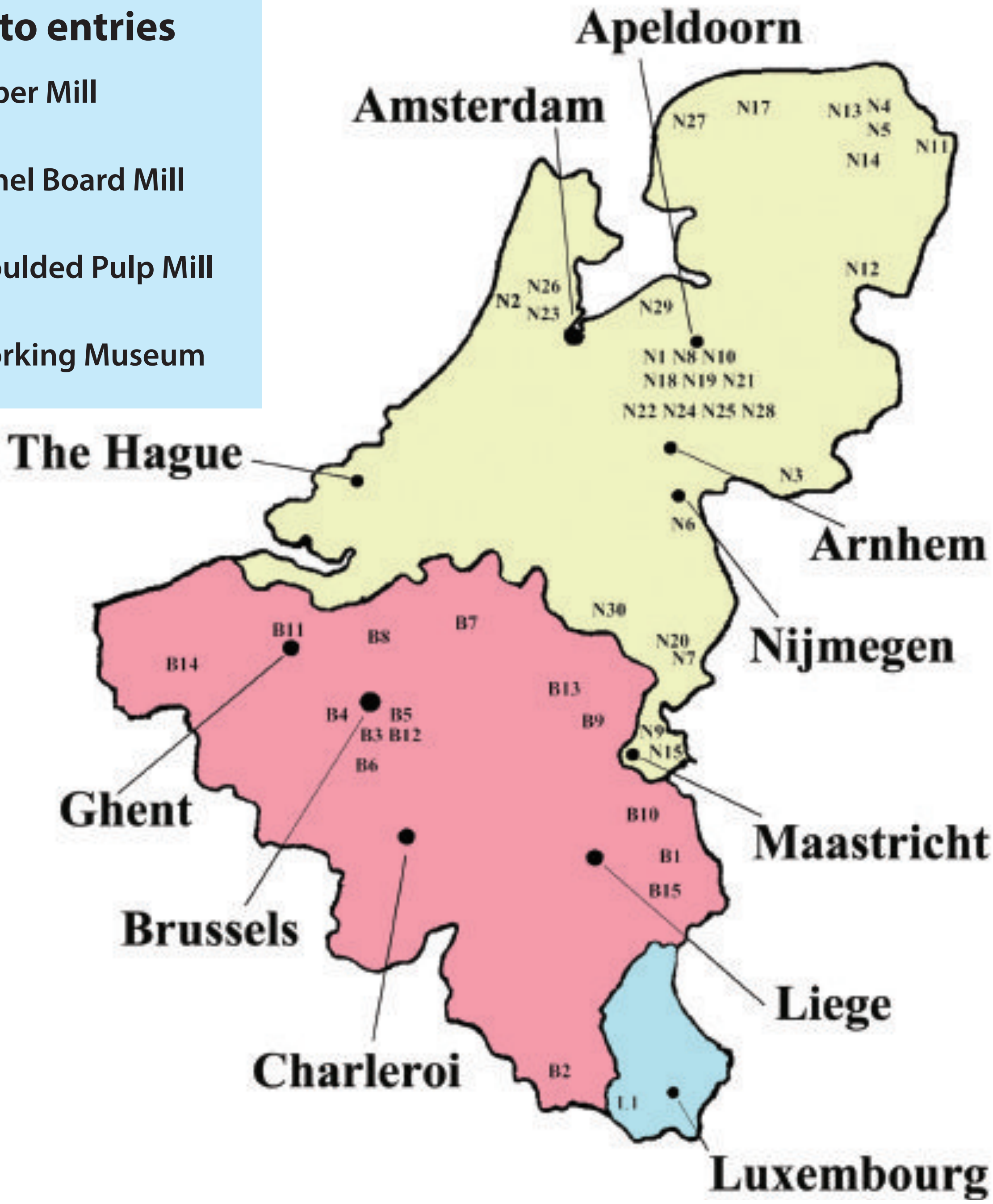
N25
PAPIERFABRIEK DE MIDDELSTE MOLEN
Kanaal Zuid 497 7371 GL Loenen (Gld)
Tel: +31 (0)55 - 505 29 11
www.demiddelstemolen.nl

N3
PAPIERFABRIEK DOETINCHEM B.V.
Terborgseweg 52, 7005 BB Doetinchem
Tel: +31 (0)314 - 34 79 11
www.papierfabriekdoetinchem.nl

Map of the Mills in the Benelux Region

Key to entries

- Paper Mill
- Panel Board Mill
- Moulded Pulp Mill
- Working Museum



CONTACT DETAILS FOR SELECTED EUROPEAN GROUPS / ASSOCIATIONS

Alliance for Beverage Cartons and the Environment (ACE)	www.ace.be
Confederation of European Paper Industries (CEPI)	www.cepi.org
European Carton Makers Association (ECMA)	www.ecma.org
European Federation of Corrugated Board Manufacturers (FEFCO)	www.fefco.org
European Liaison Committee for Pulp & Paper (EUCEPA)	www.eucepa.eu
European Recovered Paper Association (ERPA)	www.erpa.info
European Tissue Symposium (ETS)	http://europeantissue.com
International Association of the Deinking Industry (INGEDE)	www.ingede.org

N19 **PAPIERFABRIEK SCHUT B.V.**
Kabeljauw 2, 6866 NE Heelsum
Tel: +31 (0)317 - 31 91 10
www.schutpapier.nl

N10 **PARENCO B.V.**
Industrieterrein Veerweg 1, 6871 AV Renkum
Tel: +31 (0)317 - 36 19 11
www.parenco.com

N29 **PRESSWOOD INTERNATIONAL B.V. (particle)**
Lokhorstweg 13a-27, 3851 SE Ermelo
Tel: +31 (0)341 - 55 33 79
www.presswood.org

B9 **SAPPI LANAKEN N.V.**
Montaigneweg 2, 3620 Lanaken
Tel: +32 (0)89 - 71 97 19
www.sappi.com

N15 **SAPPI MAASTRICHT B.V.**
Biesenweg 16, 6211 AA Maastricht
Tel: +31 (0)433 82 22 22
www.sappi.com

B10 **SCA HYGIENE PRODUCTS S.A./N.V.**
Rue de la Papeterie 2, 4801 Stembert
Tel: +32 (0)87 - 30 66 11
www.sca.com

N17 **SCA HYGIENE PRODUCTS SUAMEER B.V.**
Solcamastraat 24, 9262 ND Suameer
Tel: +31 (0)511 - 46 66 66
www.sca.com

N6 **SCA NEDERLAND B.V.**
Lange Linden 22, 5433 NC Katwijk (NB)
Tel: +31 (0)485 - 33 93 39
www.sca.com

N20 **SMURFIT KAPPA ROERMOND PAPIER B.V.**
Mijnheerkensweg 18, 6041 TA Roermond
Tel: +31 (0)475 - 38 44 44
www.smurfitkappa.com

N11 **SOLIDUS SOLUTIONS BOARD B.V.**
Hoofdstraat 34, 9693 ZG Bad Nieuweschans
Tel: +31 (0)50 - 30 33 000
http://solidus-solutions.com

N12 **SOLIDUS SOLUTIONS BOARD B.V.**
Robertweg 2, 7741 KX Coevorden
Tel: +31 (0)50 - 30 33 000
http://solidus-solutions.com

N13 **SOLIDUS SOLUTIONS BOARD B.V.**
Halmstraat 1-3, 9745 BC Groningen-Hoogkerk
Tel: +31 (0)50 - 30 33 000
http://solidus-solutions.com

N14 **SOLIDUS SOLUTIONS BOARD B.V.**
W.H. Bosgrastraat 82, 9665 PH Oude-Pekela
Tel: +31 (0)50 - 30 33 000
http://solidus-solutions.com

B7 **SOFIDEL BENELUX N.V.**
Adolf Stocletlaan 3, 2570 Duffel
Tel: +32 (0)15 - 30 06 11
www.sofidel.it

N21 **SOLIDPACK B.V.**
Voorsterweg 38, 7371 GC Loenen
Tel: +31 (0)55 - 505 82 22
www.solidpack.eu

B14 **SPANO N.V. (particle)**
Ingelmunstersteenweg 229, 8780 Oostrozebeke
Tel: +32 (0)56 - 66 70 21
www.spanogroup.be

B15 **SPANOLUX SPRL (MDF)**
Zoning Industriel de Burtonville,
Rue de la Forêt 2, 6690 Vielsalm
Tel: +32 (0)80 - 29 27 10
www.spanolux.com

B11 **STORA ENSO LANGERBRUGGE PAPER**
Wondelgemkaai 200, 9000 Gent
Tel: +32 (0)92 - 57 72 11
www.storaenso.com

N30 **TRESPA INTERNATIONAL B.V. (MDF)**
Wetering 20, 6002 SM Weert
Tel: +31 (0)495 - 45 83 58
www.trespa.com

N7 **VAN HOUTUM B.V.**
Boutestraat 125, 6071 JR Swalmen
Tel: +31 (0)88 0183 000
www.vanhoutum.nl

Useful contact details for Benelux data:

BELGIUM
COBELPA
Association of the Belgian Pulp, Paper and Board Producers
306 Avenue Louise, 1050 Brussels, Belgium
T +32 2 646 64 50
F +32 2 646 82 97
E general@cobelpa.be
www.cobelpa.be
Year of Foundation 1940

THE NETHERLANDS
VNP
Royal Netherlands' Paper and Board Association
Kruisweg 761, 2132 NE Hoofddorp, Postbus 731, 2130 AS Hoofddorp
T +31 20 654 30 55
F +31 20 654 30 64
E info@vnp.nl
http://vnp.nl
Year of Foundation 1904

Mills in the Middle East Region

BAHRAIN

OLAYAN KIMBERLY-CLARK (BAHRAIN) W.L.L.
Askar, Ti
www.olayan.com

IRAN

ARIAN CELLULOSE SANAT
Alborz, Hy, Ti
www.golrang.com/en

ARIAN SINA INC.
Sari, MDF
www.ariansina.com

ARTA PAN
Ardebil, MDF
www.artagroup.com

CHOUKA IRAN WOOD & PAPER INDUSTRIES INC.
Gilan, Pa
www.chouka.com

GOLBONEH PARS INDUSTRIAL
Tehran, Ti

HARIR KHUZESTAN CO.
Haft Tappeh Industrial City, Ti
www.harirpaperco.com

HAYAT KIMYA
Zencan, Ti

IRAN OSB
Tehran, OSB
www.iranosb.com

IRAN PAPYRUS CO. LTD.
Saveh, Bo
www.iranpapyrus.com

ISOFAM
Tehran, MDF
www.isofam.ir

KPM KAHRIZAK PAPER MILLS
Tehrán, Pa
www.kpmpaper.com

LATIF PAPER CO.
Hashtgerd, Ti
www.latifpaper.ir

PARS HAYAT PRODUCTION CO.
Abhar, Ti
www.parshayat.ir/eng

PARS NEOPAN
Nashtaroud, MDF / PB
http://parsneopan.com

PARS PAPER INDUSTRIAL GROUP
Haft Tappeh, P&W
www.icerli.com/parspaper.htm

MAZANDARAN WOOD AND PAPER INDUSTRIES
Sair, Ne / P&W
http://en.mazpaper.com

RAHAN TAVAN CO.
Tehran, MDF / PB
www.rahantavan.com

SANAYE CHOOBE KHAZAR CO.
Amol City, MDF
www.choobekhazar.com

SUGAR CANE & BY-PRODUCTS DEVELOPMENT COMMERCIAL CO.
Shoeybieh, MDF
www.iran-sugar.com

ZARRIN BARG PERSIA CO
Saveh, Ti
www.bergezarrin.com

ISRAEL

HADERA PAPER GROUP
Hadera, Fi / Pa / P&W / Se
www.hadera-paper.co.il/en

MILOUBAN (M.C.P.) LTD.
Nahariya, Pu (cotton)
www.milouban.com

SHANIV PAPER INDUSTRIES LTD.
Ofakim, Ti
www.shaniv.com

TUT NEYAR
Zichron-Ya`akov, Hand
http://tutneyar.wix.com/tutneyar

JORDAN

AL-KEENA HYGIENIC PAPER MILL CO. LTD.
Amman, Ti
www.alkeena.com

AL-SNOBAR HYGIENIC PAPER MILL CO. LTD.
Amman, Ti
www.nuqulgroup.com

JORDAN PAPER AND CARDBOARD FACTORIES CO. LTD.
Awajan–Zarqa, Bo / Pa
www.jordanpaper.com

SPECIALIZED INDUSTRIES GROUP
Amman, NW
www.spic-nonwovens.com

KUWAIT

AL OULA PAPER MANUFACTURING CO.
Shuaiba, Pa
www.al-oula.us

GULF PAPER MANUFACTURING
Fahaheel, CB / Pa / Ti
www.gulfpaper.com

UNITED PAPER
Shuaiba, Pa / Sa

LEBANON

MIMOSA SANITARY PAPER COMPANY
Kaa El Rim, Pa / Ti
www.mimosa.com.lb

SICOMO
Kab-Elias, Bo / CB / Pa
www.sicomo.com.lb

SIPCO GANDOUR STE. INDUSTRIELLE DE PAPIER ET DE CARTON ONDULE
Kafarshima, Bo / Re / MP
http://sipco0.tripod.com

SOLICAR SOCIÉTÉ LIBANAISE DE CARTON
Sin El Fil, Bo / Pa
www.solicar.com

UNIPAK TISSUE MILL
Halat, Ti
www.unipak-tissue-mill.com

QATAR

AL SUWIDI PAPER FACTORY
Doha, Pa

SAUDI ARABIA

ARAB PAPER MANUFACTURING (WARAQ)
Dammam, CB / Pa
www.waraq.com

GULF PAPER INDUSTRIES FACTORY
Riyadh, Kr / Pa / Ti
www.alrajhigroup.com/paper/en

MADA NONWOVENS COMPANY LTD.
Jubail Industrial City, NW
www.alrajhi-holding.com

MIDDLE EAST PAPER CO. (MEPCO)
Jeddah, Pa
www.middleeastpaper.com

OBEIKAN PAPER MILL
Riyadh, Bo
www.obeikan.com.sa

SAUDI PAPER MANUFACTURING CO.
Dammam, Ti
www.saudipaper.com/en

SYRIA

ARAB COMPANY FOR PAPER PRODUCTS J.S.C. (ARAPEPCO)
Aleppo, Bo / Pa / Re
www.arapepco.com

DINATEX PAPER MANUFACTURING
Damascus, Ti

ORIENTAL PAPER (LANATEX)
Damascus, Ti

PULP AND PAPER MILL
Dayr az Zawr

SAFFOURY PAPER INDUSTRIES CO.
Damascus, Ti
www.saffoury.com

SYROPAPER (AZZOUZ GROUP)
Damascus, Kr / Pa / Sa

THE MEDITERRANEAN MILLS
Jableh, Ti

THE SYRIAN CARTON FACTORY
Charife Bross, Damascus

UNITED ARAB EMIRATES

ABU DHABI NATIONAL PAPER MILL (ADNIB)
Abu Dabi, Ti
www.adnpm.ae

AL JAZEERA PAPER MILL L.L.C.
Uum Al Qwain, Pa

AR RAGI PAPER IND.
Abu Dhabi, Hand

CROWN PAPER MILLS
Ajman, Ti
www.crownpapermill.com

EMIRATES PAPER MILL
Jebel Ali Dubai, Ti

GULF PAPER MANUFACTURING FZCO
Jebel Ali, CB / Pa
www.gulfpaper.com/GPMFZCO.htm

PREMIER PAPER MILL L.L.C.
Uum Al Qwain, Pa

QUEENEX HYGIENE PAPER MFG
Abu Dhabi, Ti
www.queenex.com

UMM AL QUWAIN PAPER PRODUCTS
Uum Al Qwain, CB / Pa
www.uaqpaper.ae

UNION PAPER MILL
Dubai, CB / Pa
www.upm.ae

PRODUCT KEY – see p48

Mills in Norway

ARBOR-HATTFJELLDAL A/S
8690 Hattfjelldal, Norway
Tel: +47 75 18 50 00 Fax: +47 75 18 50 01
Website: www.arbor.no
Products: Particleboard

BORREGAARD
Hjalmar Wessels vei 10
1701 Sarpsborg, Norway
Tel: +47 69 11 80 00 Fax: +47 69 11 87 70
Website: www.borregaard.com
Products: Pulp and Speciality Chemicals

FORESTIA AS
Damvegen 31, 2435 Braskereidfoss, Norway
Tel: +47 62 42 82 00
Website: http://forestia.com
Products: Particleboard

HELLEFOSS AS
Hellefossveien 113, N-3300 Hokksund, Norway
Website: www.hellefoss.com
Products: Book Papers

HUNTON FIBER AS
Niels Ødegaards gate 8
2815 Gjøvik, Norway
Tel: +47 61 13 47 00 Fax: +47 61 13 47 10
Website: http://en.hunton.no
Products: Wood Panel

HUNTONIT AS
Vennesla, West-Agder, Norway
Tel: +47 38 13 71 00 Fax: +47 38 13 71 81
Website: http://huntonit.com
Products: Wet-Laid Fibreboard

NORDIC PAPER GREÅKER
P.O. Box 155
NO-1720 Greåker, Norway
Tel: +47 69 13 85 00 Fax: +47 69 14 11 02
Website: www.nordic-paper.com
Products: Greaseproof and Kraft Papers

NORSKE SKOG
Saugbrugs, N-1756 Halden, Norway
Tel.: +47 69 17 40 00 Fax: +47 69 17 43 30
Website: www.norskeskog.com
Products: SC Magazine Papers

NORSKE SKOG
Skogn, Sjøvegen 108, N-7620 Skogn, Norway
Tel.: +47 74 08 70 00 Fax: +47 74 08 71 09
Website: www.norskeskog.com
Products: Newsprint and Improved Newsprint

PETERSON PACKAGING AS RANHEIM
Peder Myhre Veg 19, P. B. 8643, 7452 Trondheim
Tel: +47 815 30 444 Fax: +47 73 57 75 01
Website: www.petersonpackaging.no
Products: CCM and Solid Board Grades

RYGENE-SMITH & THOMMESEN A/S
Sandbergveien 3, N-4821 Rykene, Norway
Tel: +47 37 05 84 00 Fax: +47 37 05 84 03
Website: www.rygene.no
Products: TMP Pulp

VAJDA-PAPIR SCANDINAVIA AS
Nedre Eiker vei 48, N-3045 Drammen
Tel: +47 (32) 80 95 00 Fax: +47 (32) 83 22 12
Website: http://vajdapapir.hu
Products: Tissue

Research Organisations/Departments in Norway

NORDIC FOREST RESEARCH (SNS)
c/o Jonas Rönnberg and Inga Bödeker
Southern Swedish Forest Research Centre
Swedish University of Agricultural Science (SLU)
Box 49, 230 53 Alnarp, Sverige
Website: www.nordicforestresearch.org
(The secretariat rotates between the Nordic countries and lies with Sweden for 2014-2017)

NORSK TRETEKNISK INSTITUTT
P.O Box 113 Blindern, N-0314 Oslo, Norway
Tel: +47 988 53 333
Website: www.treteknisk.no
(Norwegian Institute of Wood Technology)

NORWEGIAN UNIVERSITY OF LIFE SCIENCES
Department of Ecology and Natural Resource Management
P.O.Box 5003, NO-1432 Aas, Norway
Tel: +47 64 96 58 00 Fax: +47 64 96 58 01
Website: www.umb.no

NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY (NTNU)
NO-7491 Trondheim, Norway
Tel: +47 73 59 40 30 Fax: +47 73 59 40 80
Website: www.ntnu.edu
(Department of Chemical Engineering)
(Centre for Renewable Energy – SFFE)
(Bioenergy Innovation Centre)

PAPER AND FIBRE RESEARCH INSTITUTE (PFI)
Høgskoleringen 6b, NO-7491 Trondheim, Norway
Tel: +47 73 60 50 65 Fax: +47 73 55 09 99
Website: www.pfi.no
(Subsidiary of Innventia AB)

SKOG OG LANDSKAP
P.O.Box 115, 1431 Ås, Norway
Tel: +47 64 948 000 Fax +47 64 948 001
Website: www.skogoglandskap.no
(Norwegian Forest and Landscape Institute)

Mills in the Eastern European Region

Excluding Russian Federation; Including: Greece, Latvia, Lithuania, Estonia

ALBANIA

EDIPACK
Durrës, Pa
www.edipack.al

ARMENIA

BUMIZ PAPER MILL
Yerevan

TUKHTARD TARA LIMITED
Yerevan, Pa

AZERBAIJAN

AZERKARTON
Baku, Pa

AZERSUN
Sumgayit, Pa / Re / Ti
www.azersun.com

BELARUS

DOBRUSH PAPER MILL GEROI TRUDA JSC
Dobrush, P&W / Pa / Pr
www.bellesbumprom.by

JSC BORISOVDREV
Minsk, MDF
www.borisovdrev.by

JSC GOMELDREV
Gomel, MDF
http://bellesbumprom.by

KRASNAYA ZVEZDA PAPER MILL JSC
Chashniki, Pa
www.bellesbumprom.by

MOZYRSKY DOK
Mozyr, Ins
http://bellesprom.com

OSJC RETCHIZADREV
Retchiza, PB

PAPER MILL OF GOZNAK
Borisov, Fi / P&W / Pa
www.goznakpaper.by

SCPM "ALBERTIN", OJSC
Slonim, Bo / Pa / Ti
http://albertin.by

SPARTAK PAPER MILL JSC
Shklov, Bo / Pa / Ti / Wa
www.bellesbumprom.by

SVETLOGORSKIY PULP AND PAPER INTEGRATED WORKS, OJSC
Svietlogorsk, Pa
www.sckk.by

BOSNIA AND HERZEGOVINA

NATRON-HAYAT D.O.O.
Maglaj, Kr / Pa / Pu (wood) / Re
www.natron-hayat.ba

SHP CELEX A.D.
Banja Luka, Hy / Ti
www.shpgroup.net

BULGARIA

ALFA WOOD
Varna, PB
www.alfawood.gr

BELOVO PAPER MILL S.A.
Belovo, Hy / Ti
www.zeritis.gr/belana

DUROPACK TRAKIA PAPIR AD
Pazardzhik, Pa
www.dssmith.com

FAZERLES AD
Silistra, HB
http://fazerles.com

ISKAR JSC PAPER FACTORY
Sofia, Bo / Pa / P&W / Wa

KOSTENETS-HHI S.A.
Kostenets, Pa / Ti
www.hhi-bg.com

KRONOSPAN BULGARIA EOOD
Bourgas, OSB
www.kronospan.bg

MONDI STAMBOLIJSKI EAD
Stamboliyski, Pa
www.mondigroup.com

SVILOCELL EAD
Svishtov, Pu (wood)
www.svilosa.bg

WELDE BULGARIA AD
Troyan, HB
www.welde.bgwww.welde.bg

CROATIA

BELIŠĆE PAPER MILL
Belišće, Pa / Pu (wood)
www.dssmith.com

HARTMANN PAPIRNA AMBALAZA D.O.O.
Koprivnica, MP
www.hartmann.dk

PAN-PAPIRNA INDUSTRIJA D.O.O.
Donji Andrijevci, Pa
www.pan-paper.hr

PAN-PAPIRNA INDUSTRIJA D.O.O.
Zagreb, Bo / Pa
www.pan-paper.hr

CZECH REPUBLIC

BIOCEL PASKOV A.S.
Paskov, Pu (wood)
www.biocel.cz

CEREPA A.S.
Červená Řečice, Hy / Ti
www.cerepa.cz

EMBA S.R.O.
Paseky nad Jizerou, Bo / Sp
www.emba.cz

HUHTAMAKI CESKA REPUBLIKA A.S.
Okříšky, MP / Pa / Th
www.huhtamaki.cz

JIP-PAPIRNY VETRNI A.S.
Větřní, Pa / P&W / Sp
www.jip.cz

KORONA LOCHOVICE SPOL. S R.O.
Lochovice, Bo
www.korona-lochovice.cz

KRPA HOLDING CZ, A.S.
Hostinné, Fi / Pa / P&W / Sp
www.krpa.cz

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www.papos.cz

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www.eestivanapaber.ee

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www.maltadecor.pl

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www.mm-karton.com

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www.leventkagit.co.tr

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	Ins (Insulation)	
	PB (Particle Board)	OSB (Oriented Strand Board)
PAPER	Bo (Board)	Pa (Packaging)
	CB (Core Board)	P&W (Printing & writings)
	Co (Coated)	Re (Recycled – various)
	De (Décor)	Sa (Sack)
	Fi (Fine)	Se (Security)
	Hand (Handmade)	Sp (Speciality)
	Kr (Kraft)	Th (Thin Papers)
	La (Label)	Ti (Tissue)
	MG (Machine Glazed)	Wa (Wallpaper)
	Ne (Newsprint)	
PULP	Pu (fibre)	
OTHER	Hy (Hygiene)	NW (Nonwoven)
	MP (Moulded Pulp)	

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ESTONIA	Estonian Forest and Wood Industries Association	www.empl.ee
GREECE	Hellenic Timber Association	http://htca.gr
HUNGARY	Federation of the Hungarian Printers and Paper Makers (FEDPRINT)	www.fedprint.hu
LITHUANIA	Lithuanian Timber Association	www.lietuvosmediena.lt
POLAND	Association of Polish Papermakers (SPP)	www.spp.pl
	Wood Based Panels Producers Association in Poland (SPPD)	http://sppd.pl/en
ROMANIA	The Patronizing Organization for Romanian Pulp and Paper Industry (ROMPAP)	
SLOVAK REPUBLIC	Union of Pulp and Paper Industry of the Slovak Republic (ZCPP SR)	www.paper.sk
SLOVENIA	Chamber of Commerce and Industry of Slovenia Paper and Paper Converting Association	www.gzs.si
TURKEY	Turkish Pulp & Paper Industry Foundation	www.sksv.org
UKRAINE	Association of Ukrainian Pulp and Paper Industry (UKRPAPIR)	www.ukrpapir.org
GENERAL	Euro Forest Portal	http://forestportal.efi.int

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