

PaperAGE

JULY/AUGUST 2013

TISSUEMAKING

**Tight supply of
“white” recovered
fibre pushing
tissue producers
towards virgin
fibre furnish**

NEWSPRINT
Mills look for options
to offset continued
drop in basic demand



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The American Forest & Paper Association (AF&PA) hosted its biennial Forest Products Industry Fly-In on June 19 in Washington, D.C. The event attracted more than 45 industry CEOs and company executives to participate in meetings with 72 House and Senate members, making the case for the industry's policy priorities under the theme for 2013 – Leaders in Sustainable Manufacturing.

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Bio-based Boost

By John O'Brien, Managing Editor

jobrien@paperage.com

Just when I thought the popular prefix "bio" may have been headed for greener pastures (pun intended), the European Commission turned up the volume nearly four billion notches and announced that it is fully behind an initiative to pump EUR 3.8 billion into Europe's bio-based industries sector.

In July, the EC, European Union Member States and European industry announced their intention to invest more than EUR 22 billion over the next seven years in innovation for sectors that deliver high quality jobs. According to the EC, most of the investment will go to five public-private partnerships: Innovative Medicines 2, Fuel Cells and Hydrogen 2, Clean Sky 2 (aeronautics), Electronic Components and Systems, and Bio-based Industries (BBI).

These Public-Private Partnerships (PPP), or "Joint Technology Initiatives" (JTIs), are projected to "boost the competitiveness of EU industry in sectors that already provide more than 4 million jobs," the EC noted.

Three of the JTIs currently exist and another (electronics) will combine two existing partnerships. But the BBI initiative is new, and new legislative proposals have been put together to establish the initiative under the EU's new program for research and innovation, *Horizon 2020*, which runs from 2014 to 2020 with an EUR 80 billion budget. The program is part of a drive to create new growth and jobs in Europe.

The EC's legal proposal "Council Regulation on the BBI Joint Undertaking," explains, "Bio-based industries are industries which use renewable biological resources for the production of bio-based products and biofuels. Production usually takes place in bio-refineries and often relies on bio-based processes. They give rise to new value chains, linking previously unrelated primary producers (and e.g. managers of organic waste) and industries, thus opening new opportunities for a wide range of established players.

An increasing number of processing industries, such as the chemical, biofuels, pulp and paper, sugar and starch, and technology providers (in particular on industrial biotechnology and engineering) are interested in moving partially or entirely towards sustainable renewable bio-based resources and/or products."

Máire Geoghegan-Quinn, EU Commissioner for Research, Innovation and Science said, "The emerging bio-based industry sector is set to be the game-changer for stimulating smart, sustainable and inclusive growth in Europe. By finding commercially viable ways of generating fuel and other products from plants and waste, it will significantly reduce our dependency on oil, help us meet climate change targets, and lead to greener and more environmentally friendly growth. Europe must develop technology leadership in this sector, which is why the EU and industry are backing this new Joint Technology Initiative."

To bolster BBI, the Biobased Industries Consortium (BIC) was organized. The consortium is a cross sector group of 48 large and small companies working with the European Commission to set up an "unprecedented" Public-Private Partnership (PPP) worth EUR 3.8 billion with a mission to "accelerate the deployment of bio-based products in Europe by 2020." (see story on page 38). Currently, 13 pulp and paper producers are members of the BIC: Billerud Korsnäs, Borregaard, ENCE, Holmen, Metsä, Mondi, Norske Skog, SAPPi, SCA, Smurfit Kappa, Södra, Stora Enso and UPM.

The JTIs won't solve all the economic challenges facing Europe and the BBI initiative certainly isn't a cure-all for its pulp and paper industry. But the BBI collaborative effort is testament that the industry is making a decisive move away from its traditional business model and formulating a plan to utilize a portion of its assets, which hopefully may pump some renewed bio-life into its tired body. ■

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NORTH AMERICA

Kapstone to Acquire Longview Fibre Paper and Packaging for \$1.025 Billion



KAPSTONE

KapStone Paper and Packaging Corporation and Longview Fibre Paper and Packaging, Inc. jointly announced on June 10 that they signed an agreement for KapStone to acquire the stock of Longview Fibre Paper and Packaging, Inc. from Brookfield Capital Partners II, a private equity fund managed by Brookfield Asset Management Inc. in a cash free, debt free transaction for \$1.025 billion in cash and subject to certain post-closing adjustments.

The deal received a green light on June 28 from the U.S. Federal Trade Commission, who granted early termination of the waiting period under the HSR Act, leaving only an approval from the Federal Energy Regulatory Commission for the acquisition to clear all regulatory processes.

Longview, a manufacturer of high quality containerboard, lightweight high performance multiwall paper, specialty Kraft papers, and corrugated containers, operates a mill located in Longview, Washington equipped with five paper machines that produce 1.15 million tons of containerboard and Kraft paper annually.

"Acquiring Longview is an outstanding opportunity for numerous reasons," said Roger W. Stone, Chairman and CEO of Kapstone. "The acquisition immediately adds value for our shareholders by increasing earnings and generating very strong free cash flow. The deal is accretive to our bottom-line from Day 1."

"This acquisition will increase our exposure to the highly desirable containerboard segment. It also broadens our Kraft paper line and makes KapStone a global producer of high performance extensible multiwall paper, a grade which is growing at about 4% per year," he added.

Matt Kaplan, President and COO of KapStone, noted, "We anticipate synergies of approximately \$10 million within the first 18 months."

KapStone has committed financing from Bank of America, Barclays Bank, and Wells Fargo Bank.

Kapstone expects to close the deal in the third quarter of this year.

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Expera Specialty Solutions Celebrates "Day 1" of Operations

Expera Specialty Solutions on June 26 celebrated its first day of operation following the close of the transaction establishing the new company.

Expera's manufacturing platform includes machines at four Wisconsin mills, including the Thilmany Mill in Kaukauna, the Nicolet Mill in De Pere, and the former Wausau Paper Mills in Mosinee and Rhinelander.

Expera also has a supply agreement for paper produced on the #5 Paper Machine at Verso Paper's Androscoggin Mill in Jay, Maine.

According to the company, the name "Expera" was inspired by the Expertise and Experience the newly formed company brings to the table, as well as the new era in service and solutions the team will provide.

Expera Specialty Solutions manufactures specialty paper products for use in the tape, pressure-sensitive release liner, industrial and food packaging segments. The company is owned by KPS Capital Partners, LP.

Neenah Paper to Market and Distribute Gruppo Cordenons' Fine Papers in North America

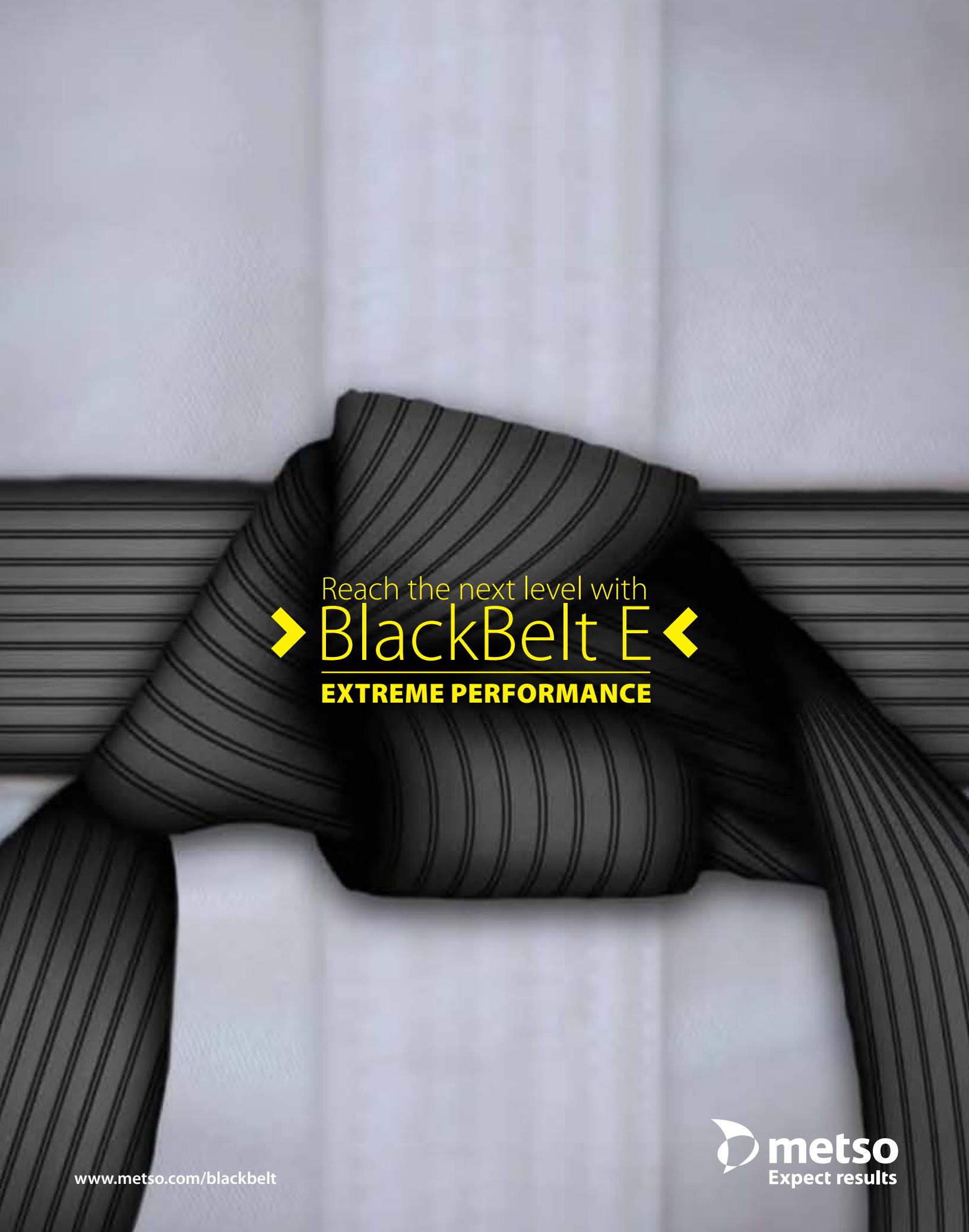


Neenah Paper has signed an exclusive partnership agreement with Gruppo Cordenons, the Italian maker of high quality fine papers, to market and distribute all Cordenons papers to the U.S. and Canada.

The papers will continue to be manufactured by Gruppo Cordenons at its two paper mills in Northern Italy — the Cordenons mill and the Scurelle mill.

"Neenah has an unwavering commitment to providing designers with unique product options to set their work apart," said Julie Schertell, President of Fine Paper. "Cordenons papers are known for their exemplary quality, thick and heavy cover weights, and artisanal color palettes. Brands like Stardream, Plike, and Canaletto are specified by designers for projects that require a unique and premium image. This collection is a natural complement to our existing portfolio of fine papers."

The papers will be available to Neenah distributors beginning September 3, 2013.

The background of the advertisement features a large stack of numerous black paper rolls, creating a sense of depth and texture.

Reach the next level with
BlackBelt E
EXTREME PERFORMANCE

Mercer International to Trim Workforce at Celgar Pulp Mill

Mercer International announced that, after conducting a comprehensive assessment, its Celgar mill, near Castlegar in British Columbia, Canada, intends to reduce its workforce in order to improve its competitiveness with other pulp producers.

The planned reduction will affect both hourly and salaried employees, Mercer said.

The workforce reduction is expected to involve approximately 85 employees over the next five years, with the majority of employees to be affected over the next 12 months, the company said.

"This action is being taken to make a substantial reduction in fixed costs by bringing personnel levels more in line with other



mills operating safely and productively around the world," Mercer said in a press statement.

Mercer's President and CEO, Jimmy Lee, said, "It is essential for the long term viability and sustainability of the Celgar mill that it maintains a competitive cost structure compared to other producers in the face of ever increasing costs and other challenges.

"A competitive cost structure is also essential to attract the necessary investment capital required to continue to modernize the mill and participate in growing bio-economy opportunities," Lee added.

According to Mercer, the Celgar mill will continue to operate with an annual capacity of approximately 520,000 air-dried metric tons of market northern bleached softwood kraft pulp and plans to employ approximately 370 employees when the workforce reduction is completed at the end of 2017.

Mercer said it will take appropriate measures to assist employees affected by the workforce restructuring in accordance with applicable agreements, policies and legislation and offer early retirement incentives for senior employees.

Newark Recycled Paperboard to Expand Certain Operations, Close Others

Newark Recycled Paperboard Solutions announced a plan to strengthen the company's capabilities in Franklin, Ohio and Milwaukee, Wisconsin and consolidate its Northeast facilities.

"On the heels of a strong performance last fiscal year, we're making the decision to reinvest in several operations," said Frank Papa, CEO and President of Newark. "We strategically developed a plan to improve the utilization of our people and assets and most importantly, provide quality products and services in areas where our customers reside."

The Newark Franklin, Ohio facility, which currently produces laminated panels, spines, and floor protection products, will take on a larger footprint as tube and core manufacturing will be added, Newark said. And in a related move, Newark's Greenville, Pennsylvania facility will be consolidated into the Franklin facility.

At its Milwaukee, Wisconsin facility, the company is increasing the plant's converting capabilities in the area of laminated panels for book and loose-leaf customers.

In the Northeast, Newark's Chicopee, Massachusetts operation will become the primary facility for the Northeast and will continue producing tubes and cores, while the company's operation in Lawrence, Mass. will be consolidated into the Chicopee operation.

"It makes economic sense and provides a strong platform to support our valued Newark customers," said Papa. "Both of these moves will enable us to be more efficient and supply quality products to our customers in a quicker timeframe."

The streamlining of operations is expected to be completed this coming fall, Newark said.

NewPage and Omya to Build PCC Plant

NewPage and Omya announced that they have entered into a long-term supply agreement to build a Precipitated Calcium Carbonate (PCC) plant which will be located at NewPage's Escanaba paper mill site in Michigan.

Steve Stueck, Director of Marketing, Sales & Marketing Paper, Region Americas, informed PaperAge that ground-breaking for the plant began in mid-July.

According to Omya, the on-site PCC plant will not only provide cost savings compared to purchasing PCC from an outside source, but will also result in reducing the mill's environmental impact. Currently, the CO₂ produced by the mill is emitted into the air and considered waste. The on-site plant will use CO₂ generated by the Escanaba mill in the process.

"We're very pleased to announce the creation of this PCC plant at the Escanaba mill," said NewPage Senior Vice President of Operations Mark Lukacs. "This plant is a step toward helping us achieve our long-term vision."

Tony Colak, CEO for Omya Region Americas said, "We are very excited to build and operate this new PCC plant for NewPage Escanaba. Most importantly, we are pleased to be a strategic supplier and partner with NewPage."

BlackBelt E



The newcomer's benefits include

- longer life
- less wear
- even doctoring
- better profiles
- higher MD dimensional stability

Thanks to its excellent dimensional stability, wear resistance and long running time, the new Metso BlackBelt E provides paper and boardmakers with lower shoe press belt costs per produced ton.

BlackBelt E is an improved version of the BlackBelt shoe press belt that has enjoyed great success at paper mills around the world ever since its introduction in 2008. The newcomer's benefits include longer life, less wear, even doctoring and better profiles. These all result in lower overall belt costs, a factor much appreciated by mills in these economically tight times.

In the E version, machine-direction (MD) dimensional stability has been taken one step further to better address the problems related to stretching and wear on demanding machines.

Uneven plastic MD stretching causes doctoring problems due to diameter variation; the doctor blade does not touch the belt surface evenly, resulting in poor profiles. It also causes mechanical belt wear because of the speed difference in the nip. Wear is also caused by elastic MD stretching.

"BlackBelt E features higher MD dimensional stability which reduces the risk of permanent changes in the belt. Also, it has a very positive effect on wear resistance," describes Ville Lahdensuo, Product Technology Manager, Belts, Paper Machine Clothing, Metso. *"BlackBelt E stretches only half of what standard BlackBelt does since the modulus of the reinforcement has been doubled. This means that the belt stays better in the operating window, and its dimensions do not change permanently."*



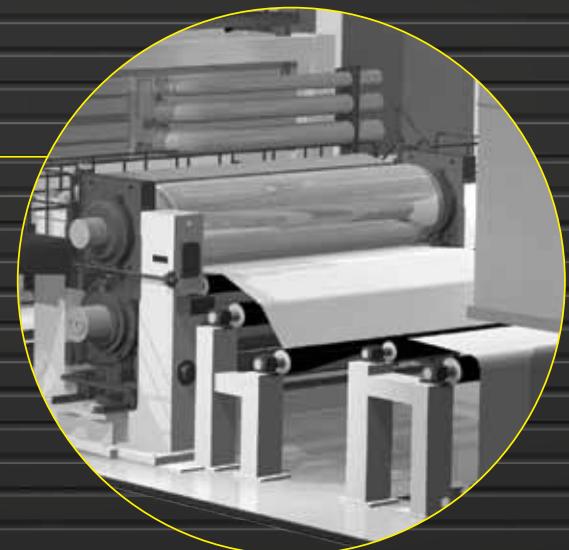
► E stands for extreme performance



130°C

Also applicable to calendering

Another major improvement in the new belt is related to its ability to withstand heat. Its polyurethane material endures high temperatures of up to 130°C in continuous use without degradation. The synthetic yarns that reinforce the belt structure do not soften until 120°C. Usually belts cannot be used in temperatures over 80°C.



"Since BlackBelt E withstands high temperatures, it can be used in calendering and other high-temperature applications, too," Lahdensuo points out.



► Non-marking BlackBelt HD family grows

Simultaneously with the development work on the BlackBelt E shoe press belt, Metso has expanded its range of high-density (HD) grooved surfaces available for the standard BlackBelt and the newcomer. They all prevent marking efficiently and improve water removal from the web.

There is now a high-density option also for machines that require a larger void volume, such as marking-prone board machines. And what is especially interesting: experience gained with HD on tissue machines has also been very good.

EUROPE

UPM Raflatac to Reduce Labelstock Capacity in Europe, South Africa, Australia

UPM Raflatac is planning to reduce labelstock production capacity in Europe, South Africa and Australia to secure cost competitiveness and profitability in low-growth markets. The planned actions are estimated to result in annual cost savings of about EUR 12 million starting from the beginning of 2014.

According to the plan, the labelstock factory in Martigny, Switzerland, the coating operations in Melbourne, Australia and Durban, South Africa as well as the slitting and distribution terminal in Johannesburg would be closed. In addition, working time and shift changes and reductions are planned in France, Spain and the UK.

The product range, service and deliveries offered to customers will not be impacted by these plans, UPM said.

If all plans are implemented, the estimated total impact would be a maximum of 170 positions in the affected countries.

Most of the restructuring is estimated to be complete by the end of 2013.

"The economy in Western Europe has been weak for a long time and we don't expect the situation to improve in foreseeable future," said Jussi Vanhanen, President of UPM Engineered Materials. "Simultaneously, the demands of our customers for cost-efficient labeling solutions continue to increase all over the world. In order to secure our customers' and our own profitability in the long run, we need to ensure that our manufacturing operations continue to be the most cost competitive in the industry."

"Unfortunately the planned restructuring would also mean that we will lose a significant number of dedicated employees," Vanhanen added.

UPM expects most of the restructuring is to be complete by the end of 2013.

Sodra Plans to Increase Pulp Production at Its Varo Mill in Sweden



Sodra has decided to apply for an environmental license to increase pulp production at Sodra Cell Varo (Sweden), from the mill's current production capacity of 425,000 tonnes per year to 700,000 tpy.

"Sodra Cell is currently a leading player in the field of market paper pulp production, and this is a position that we want to retain and develop," said Lars Idermark, CEO and Group President of Sodra. "This is why we have decided to apply for an environmental license to expand our pulp mill in Varo."

"We are currently working on reviewing our group strategy, and we expect this work to be complete in early 2014," he explained.

"Expansion of Sodra Cell Varo is one of the measures that can reinforce our position and create sustainable profitability. This expansion will result in more efficient production and also pave the way for a long-term, profitable market for our members' wood raw materials," Idermark added.

A final decision on the investment may be made once the licensing process has advanced far enough for what is known as a commencement permit can be issued, the company said.

Cham Paper to Sell Italian Paper Mills to Delfort Group

Cham Paper Group said that it has sold its Italian paper mills located in Carmignano and Condino to Delfort Group.

The enterprise value of the deal is about EUR 86 million and includes financial liabilities of about EUR 45 million to be assumed by Delfort. The net purchase price will be paid in cash.

Cham said that with completion of the sale, it is exiting base paper production.

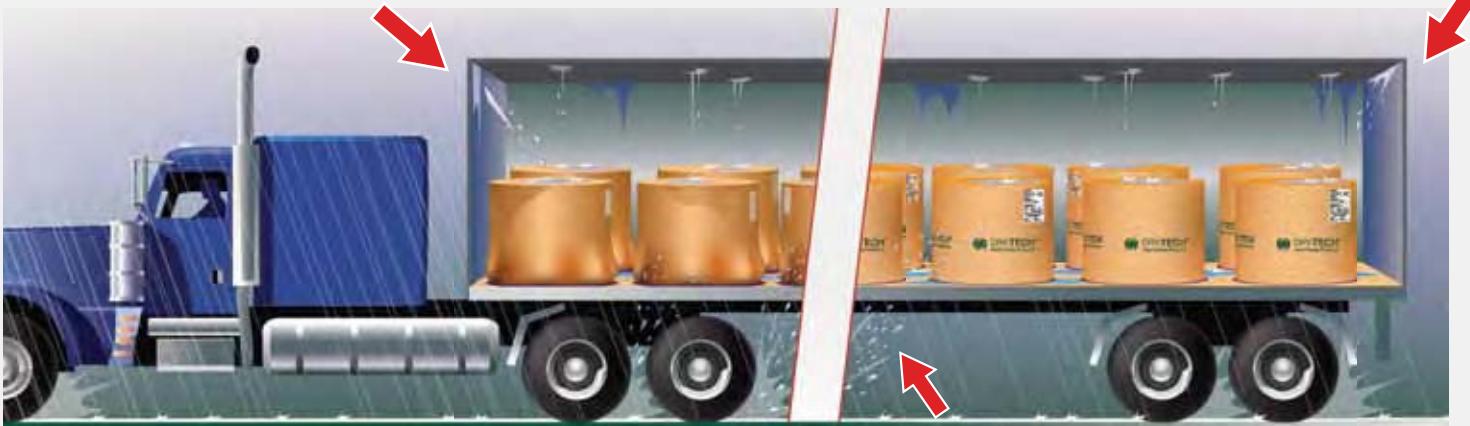
Based in Traun, Austria, Delfort Group produces and distributes specialty papers and has about 1,750 employees at five manufacturing plants in Austria, Hungary, the Czech Republic and Finland.

In a written statement, Cham paper said, "During the last few months, the Board of Directors of the Cham Paper Group has been evaluating strategic options which, after the comprehensive restructuring of the last 18 months, bring back sustainable growth to the specialty paper business. To integrate the two complementary Italian mills into the Delfort Group was found to be the promising option."

Cham Paper expects to close the deal in the fourth quarter of this year, subject to regulatory approval.

Cham Paper said that its business in Switzerland will not be affected by the divestment of the Italian mills.

Since the beginning of 2013, Cham's manufacturing focus in Switzerland has been on finishing (coating technology) of external base paper as well as the development, commercial launch and distribution of high-grade product groups and services.



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RUSSIA

Ilim Group Inaugurates New 720,000 tpy Pulp Mill at Bratsk

Ilim Group on June 19 officially inaugurated its new pulp mill at its Bratsk pulp and containerboard mill (Irkutsk Oblast) in Russia.

According to Ilim, the new pulp mill is the largest investment project completed in the Russian pulp and paper industry over the last 30 years and the world's largest fiberline. Total investments in the Big Bratsk project exceeded \$800 million.

"This is an important and long-awaited event. This industry has not seen such large investments over a long time, and this is a remarkable milestone for the entire industry. The Big Bratsk project is a good example of well-coordinated efforts of business community and regional and federal authorities," Medvedev said.

The annual capacity of the new fiberline after ramp-up will reach 720,000 tons of bleached softwood market pulp, with the total annual pulp and paper products output of the Bratsk Mill



(l-r) John Faraci, Chairman and CEO of International Paper, Dmitry Medvedev, Prime Minister of Russia; and Zakhar Smushkin, Chairman of Ilim Group, tour Ilim's new 720,000 tpy pulp mill.

exceeding 1 million tons per year.

The completion of the pulp mill project also resulted in the Bratsk Mill becoming more efficient and more environmentally friendly, Ilim noted. In addition to the construction of a new fiberline, the project involved the upgrade of the infrastructure, including construction of a new recovery boiler, new woodyard, new chemicals preparation plant, and a number of other upgrades.

John Faraci, Chairman and CEO of International Paper noted, "We have planned large-scale investments and have completed our plans. I believe that Ilim Group is a spectacular and unique example of a joint venture in this industry. It sets an example of how two international companies may come together and collaborate. To bring this project into life, we needed a joint venture and a true partnership."

SOUTH AMERICA

Klabin Approves Plans for 1.5 Million tpy Pulp Mill in Brazil



in the State of Paraná, Brazil, with the capacity to produce 1.5 million tonnes of pulp per year — 1.1 million tonnes of hardwood pulp and 400,000 tonnes of softwood pulp ("Project Puma").

In a written statement, Klabin said, "The Company believes that the Project Puma differs from other ongoing pulp projects due to the flexibility of producing two types of fiber in the same plant and for enabling the supply of the Brazilian market of fluff pulp, which is currently imported."

São Paulo-based paper producer Klabin S.A. announced that its Board of Directors approved the executive officers' proposal for the construction of a new pulp mill in the city of Ortigueira,

"Additionally, it will be possible to obtain a lower cost in the production of the two fibers, as well as to benefit from excellent inbound and outbound logistics and to produce 144MW of surplus energy," Klabin said.

Klabin currently owns 107,000 hectares of planted forest with pine and eucalyptus, which would be the source of raw material for the new pulp mill.

"The average distance between the forests and the plant is 74km," Klabin noted, "ensuring competitiveness and low cost of the wood transportation."

Klabin expects to begin the project in the first quarter of 2016

"Project Puma represents an important step for Klabin, in light of the significant increase of its production capacity, which will not only supply the markets of pulp, but will also enable future expansions in packaging paper machines, as well as provide operational gains and positive impacts in its financial results," the company noted.

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Damaged 3" Coated White



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ASIA

Double A to Begin Producing Dissolving Pulp in 2014

Double A said that it has decided to enter the dissolving pulp market due to significant growth in the market and global demand and has invested \$6.1 million to upgrade its pulp production line in Thailand.

In a written statement, Double A said, "The demand for dissolving pulp has substantially increased during the last few years. The growing demand of dissolving pulp in the market is attributed to the consistent growth of regenerated cellulose fiber production, largely initiated by an increasing demand in China and other Asian countries. In 2012, global demand for dissolving pulp, a viable alternative for cotton, has reached 6 million tons. The favorable trend is expected to continue in the next two years with an annual growth rate of 9%. Global demand is projected at 6.9 million tons in 2014 and thus dissolving pulp will prevail during the next decade."

INDUSTRY SUPPLIERS

AkzoNobel to Increase Colloidal Silica Production in Asia and Europe



AkzoNobel's Pulp and Performance Chemicals business plans to increase capacity at several of its colloidal silica production sites. The planned expansions — at facilities in Asia and Europe — should be completed in the latter half of 2014. Colloidal silica is used in a wide variety of everyday products, with the company's main markets including electronics, paper, construction and coatings.

"As a leading world producer of colloidal silica, we have identified major growth potential for our colloidal silica products, particularly in Asia," explained Lars Andersson, Director of Silica and Paper Chemicals. "We have therefore taken a strategic decision to increase capacity at our production plants in Taiwan, China and Germany."

Added Ann Lindgärde, Director of Sales and Marketing for Colloidal Silica, "We are continuously strengthening our innovative product portfolio and these investments mean we will be well positioned to support the growth of our customers in two of our key markets."

The planned investments are in line with AkzoNobel's strategy of focusing on global leadership positions in pulp bleaching, paper chemicals, colloidal silica and expandable microspheres.

"Asia, specifically China, will continue to be the world's biggest market for dissolving pulp as a viable substitute for cotton with special applications in rayon fiber for textile industry. This is due to the limited domestic supply of fiber, increased production of garments and the short supply of cotton," the company said.

"China is the world's largest production base of viscose fiber. In 2012, 60% of world's total viscose fiber output was produced by China. Production is expected to grow by 10% therefore demand for dissolving pulp will also rise, making China a key market to Double A."

Double A said that it expects to begin commercial production at the beginning of 2014 at an annual capacity of 175,000 tons. The first 100,000 tons output will be exported to China, Double A noted.

Bel Papyrus Starts Up Tissue Machine in Nigeria

Nigerian tissue producer Bel Papyrus Ltd, in June started up a new Toscotec-supplied tissue machine installed in Lagos, Nigeria.

The new machine's average production is 23,000 tons per year.

Toscotec's scope of supply included an AHEAD 1.5S crescent former tissue machine with a single-layer headbox, single press configuration and a Steel Yankee Dryer (TT SYD 12FT), machine auxiliaries, a stock preparation plant for virgin pulp and for recycled paper including deinking cells, 2-loop washer system and a hot dispersion system.

The supply contract also includes a steam generator, air compressors, a three unwind stands tissue slitter rewinder TT WIND-P with a calendering station and a jumbo reel wrapping machine.

The machine's design speed is 1800 mpm with a net web width of 2850 mm.

The project has been managed by Toscotec on an EPC (Engineering and Procurement) basis.

The new tissue machine will bolster Bel Papyrus as a leading tissue producer in the West African tissue market (ECOWAS countries), increasing the company's total production capacity to over 45,000 tpy.

Bel Papyrus is a member of the Boulos Group Of Companies.

Toscotec said that it is currently conducting an on-site study for the Boulos Group in Nigeria that involves the layout of paper mill number 4, which is expected have a capacity of 28,000 tpy and begin production in September 2015.



Every dimension covered. That's inspiration.

AkzoNobel's new Jupiá Chemical Island in Brazil is now operational and has started supplying the Eldorado Brasil Celulose pulp mill, which is the biggest single pulp mill line in the world.

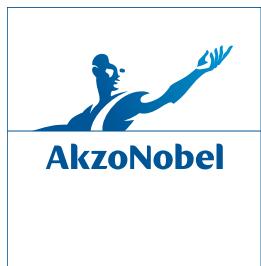
This state-of-the-art Jupiá facility represents one of AkzoNobel's largest investments in Latin America. It will supply, store and handle chemicals for the 1.5 million tons per year Eldorado mill.

During the construction process our Swedish and Brazilian engineers worked side by side with local contractors to accommodate our customer's every need. The result is a cost-efficient, safe, reliable and environmentally friendly production of sodium chlorate and chlorine dioxide. The AkzoNobel Jupiá Chemical Island will also handle other pulp making chemicals for the Eldorado mill.

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Research Institute Says Paper Industry Can Save Energy with New Heat Pump Concept

Innovative concept upgrades industrial waste heat to higher temperatures so it can be reused in the process.

The paper industry can save approximately 10 percent of its energy use by deploying a new heat pump concept, developed by the energy research centre of the Netherlands known as ECN, which makes the process of paper manufacturing more sustainable and more affordable.

ECN, the largest energy research institute in the Netherlands, and, Bronswerk Heat Transfer, worldwide supplier of heat transfer solutions, signed a license agreement on July 5th for selling the concept on the market. The innovative concept upgrades industrial waste heat to higher temperatures so it can be reused in the process.

According to ECN, the temperature of most industrial waste heat is too low to be reused. Therefore, heat pumps upgrade the temperature to higher levels. The application developed by ECN offers an economically viable method to upgrade the temperature of waste heat to such levels that it can be reused in the industrial process, resulting in a significant energy saving.

"Thanks to ECN's concept, reusing waste heat has come within reach for multiple industrial applications. With this technique, the paper industry can make a giant leap towards a more sustainable and efficient production process," said Robert Kleiburg, COO of ECN.

According to Sjaak Remmerswaal, President of Bronswerk Heat Transfer, a more sustainable industry must be economically viable.

"If we can earn back our sustainable technologies by energy savings and lower costs, we increase the incentive to make the switch. We are very optimistic about the market prospects of this system," Remmerswaal said.

The concept is considered innovative because of the much higher temperatures that can be achieved. By using a natural refrigerant the heat pump within this system can upgrade the temperature of the waste heat from 60 up to 140 degrees Celsius to produce steam, which is much higher compared to common heat pump systems.

ECN and Bronswerk, together with Smurfit Kappa and air conditioning and refrigeration technology specialist IBK, are testing the concept on a small scale (200 kW) at Smurfit Kappa Roermond Paper.

"This innovation fits perfectly with our ambition to halve the energy consumption in the whole chain," said Henk Hoevers, Vice President Technology at Smurfit Kappa.

Based in the Netherlands, ECN develops high-quality knowledge and technology for the transition to sustainable energy management, and introduces this knowledge and technology to the market. ECN's focus is on energy conservation, sustainable energy and an efficient and clean use of fossil fuels. For further information, visit www.ecn.nl.

INDUSTRY SUPPLIERS

Metso to Supply New Containerboard Machine to Zhejiang Jingxing Paper

Metso will supply Zhejiang Jingxing Paper Joint Stock Co., Ltd. with an OptiConcept M containerboard production line for their Pinghu mill in Zhejiang Province in China.

The value of the order was not disclosed.

The new containerboard machine will produce high-quality containerboard grades out of 100 percent recycled raw materials.

Start-up of the machine is scheduled for 2014.

Metso's delivery will include a complete OptiConcept M boardmaking line from headbox to reel with related air systems and chemical systems. The automation package will include dilution headbox controls.

The new 5.65-meter-wide (trim) machine, PM 16, will have a design speed 1,100 m/min and produce fluting grades out of recycled raw materials in the basis weight range of 70-120 g/m².

Production capacity of PM 16 will be about 880 tonnes per day.

Zhejiang Jingxing Paper Joint Stock Co., Ltd. manufactures kraft liner board, white top linerboard, high strength corrugated base paper, other special paper, corrugated cardboard as well as tissue paper. The company was founded in 1984 and is based in Pinghu, China.

ABB to Supply SCA Ortviken with Automation System for New Biofuel Plant

ABB has won an order for a System 800xA automation solution from SCA Ortviken for their new biofuel plant for handling and grinding pellets and combustion of wood powder in two biomass boilers, including equipment for cleaning flue gases. The new plant will also be able to deliver district heating to the local utility Sundsvalls Energi AB.

The automation solution from ABB will control and monitor the entire plant, including the safety systems. Existing wood, pulp and energy systems will be utilized and integrated with ABB's System 800xA automation.

The system will handle a complex process with very high security requirements. The control includes two existing boilers rebuilt for the new type of fuel, new fuel handling and integration with adjacent process sections.

By adding new features such as fuel handling and burner control to the existing system, operators will be working in a familiar environment that ensures a safe and smooth transition.

Parts of the existing system will also be upgraded to 800xA. Commissioning is planned for June and October 2013.

Ortviken's paper mill, near Sundsvall, produces coated printing paper, LWC, and newsprint paper on four machines with a combined paper production capacity of 880,000 ton per year.

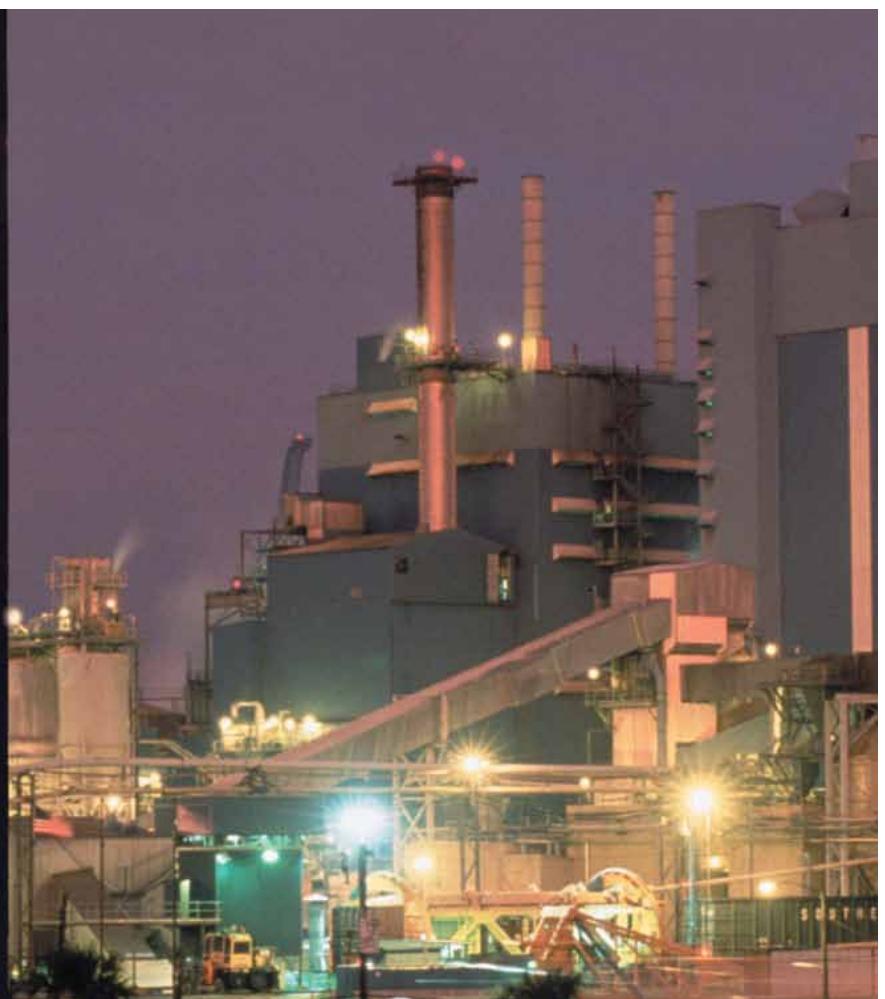


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As the industry leader in power, automation and service, ABB has the products, systems and people that can deliver solid results to improve your bottom line. Its a fact, more than 95% of the world's pulp, paper and tissue mills have ABB products. From simple instrumentation to complex systems, the industry trusts ABB. For your next project call ABB to explore what we can do for you.

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PAPER

■ **Catalyst Paper** has appointed **Leslie Lederer**, a director and chairman of the company, as the interim President and CEO. The appointment took effect upon the departure of Catalyst's CEO **Kevin J. Clarke** at the end of June. Mr. Lederer is a former industry executive with Smurfit-Stone Container. Clarke left Catalyst to return to his home in New York where his family resides.

■ **Finch Paper LLC** recently appointed **Debabrata Mukherjee**, Ph.D. as its new President and CEO. Dr. Mukherjee succeeds **Joseph F. Raccuia**, who stepped down from the position on May 24. Dr. Mukherjee formerly served as vice president and general manager of specialty papers for P.H. Glatfelter since 2008.



Debabrata Mukherjee

■ **Ilim Group's** Board of Directors named **Franz Josef Marx** as the Group's new CEO, effective July 1. Marx replaces **Paul Herbert** who has served as Ilim's CEO for the past six years. Prior to joining Ilim, Marx was Vice President of International Paper and President of International Paper Russia.



Franz Josef Marx

■ **Rayonier** said that **Chris Corr** has joined the company as Senior Vice President, Real Estate and President, TerraPointe Services, Inc. He replaces Charles Margiotta, who retired on June 28, after more than 38 years with the company.



Chris Corr

■ **Rottneros** appointed **Carl-Johan Jonsson** as the company's new CEO, effective July 1. He succeeds **Ole Terland**, who has served as CEO since 2008. Jonsson most recently held a corresponding position with Mondi Dynas AB, a manufacturer of kraft paper.



Carl-Johan Jonsson

■ **Sonoco** has named **Marcy Thompson** as Vice President, Marketing and Innovation. Previously, Thompson headed the North American Rigid Paper division since 2011.

■ **Weyerhaeuser Company** has elected **Doyle Simons** as President and CEO, effective August 1, 2013. Simons succeeds **Dan Fulton**, who turns 65 this year and will be retiring as planned. Effective August 1, Fulton will serve as executive vice chairman of the Weyerhaeuser board of directors until his retirement in October 2013.



Doyle Simons

SUPPLIER

■ **Georgia-Pacific Paper Chemicals** recently named **Mark Zempel** as North American Sales Manager. Most recently, Zempel was a sales manager supporting the Americas for AkzoNobel Pulp and Performance Chemicals.



Mark Zempel

■ **Metso** has appointed **Pasi Laine** as President and CEO of Valmet Corp. — a new company as the result of a demerger plan to separate Metso's Pulp, Paper and Power business into a separate listed company, which will take effect Dec. 31, 2013. Laine is currently President of Metso's Pulp, Paper and Power business, and he will continue in this position until assuming the duties of the President and CEO of the new company at the end of the year.



Pasi Laine

■ **Thiele Kaolin Company** announced that **Steve Humphries** has joined the company as the Mid Atlantic Regional Sales Manager. In this role Humphries will support Thiele's domestic customers across twelve states in the U.S. from South Carolina to Pennsylvania, and as far west as Kentucky. Humphries succeeds **David Hickman**, who will be retiring at the end of 2013. Thiele also welcomes **Tom Bennett** to the company as a Sales & Marketing Associate.

RESIGNATION

■ **Arctic Paper's** CEO, **Michał Jarzynski**, on June 19 submitted his resignation, which became effective on July 15. In the interim, Arctic's Supervisory Board has named **Wolfgang Lubbert** as acting CEO. Lubbert is a current member of Arctic's Management Board and Sales & Marketing Director.



Will you be the next deinker to hit the ‘trifecta’?

Now you can “triple your winnings” in your deinking process by reducing chemical costs *three ways with one additive!* DEKA can replace up to half of costly surfactants, improve pulp brightness, and lower ink residual numbers as well.

Sound too good to be true? In documented mill tests DEKA has replaced fully 50 percent of expensive surfactant dosage without adversely affecting deinking performance. And laboratory studies prove DEKA usage can increase pulp

brightness up to 5 GE brightness points. Plus, additional lab deinking tests have demonstrated ERIC values lowered by up to 74 percent.

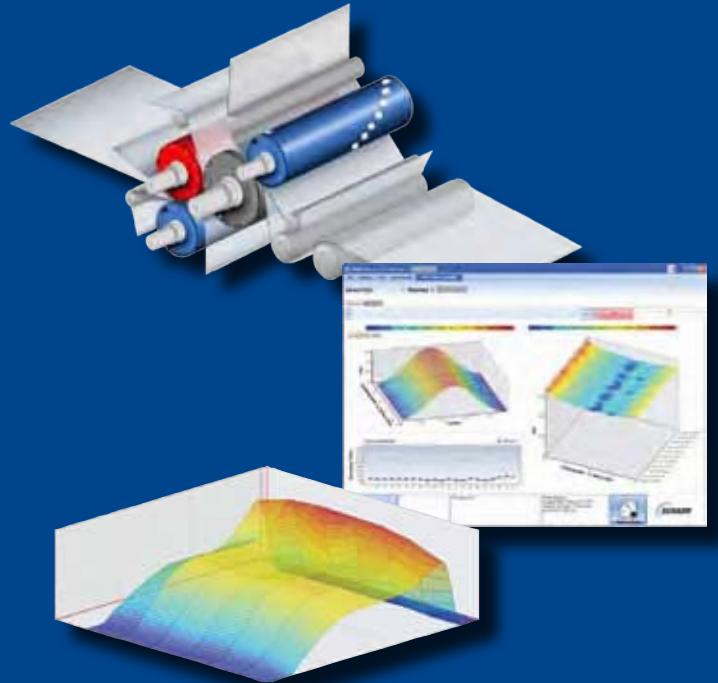
DEKA is also versatile—flotation or wash deinking processes both benefit from this revolutionary deinking aid.

Contact Thiele today for details on how your deinking process might benefit from using DEKA. We’ll be glad to show you the test results and set up a trial in your mill.

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SMART[®] TECHNOLOGY



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"...for our company, SMART Roll has evolved into a production optimization and process tool, similar to the reel scanners, where process variation is evaluated and immediate action can be taken. This was simply impossible before SMART. I recommend evaluating SMART Roll on your paper machines, and experiencing firsthand how it might be a good fit to optimize your process."

"...our entire mill exclusively uses SMART Technology to control the presses on our machines. We no longer use the gauges on the control panel."

"...since adopting SMART Technology in our presses, we've eliminated the guesswork and trial and error when identifying and correcting issues. We have refocused SMART from a "trouble-shooting tool" to a key component of our standard process control intelligence."

**From the pioneers of
intelligent nip technology.**

Case Study

SMART® 5.0 PM 6 UPM Schongau, Germany

UPM Schongau recently upgraded to SMART 5.0 on PM 6 for better control and visibility of nip conditions. (Fig. 1) Upon initial start-up following the SMART 5.0 installation, the SMART system captured a number of process changes including pressure differences, edge overloading, nonuniform distribution of nip load, and others. SMART 5.0 provided rapid and accurate information so production engineers could make immediate adjustments where necessary, and acknowledge the need for other corrective measures to be performed at scheduled downtimes.



Fig. 1 - UPM Schongau PM 6 - 1,400 MPM

Figure 2 shows a sectional enlargement from the long-term nip pressure measurement phase over a period of several days. It displays the measured nip pressure prior to the scheduled PM downtime for changing felts and its changed condition after start-up. (To simplify the graph the actual period of downtime was filtered out.) With SMART 5.0, it's immediately clear that there is an edge overloading condition on tending and drive sides which reduced proportionally during the break-in period of the felts, (green areas = increased pressure level). The insight and accuracy that SMART provided enabled engineers to quickly isolate the edge overload issue and accelerate corrective action.

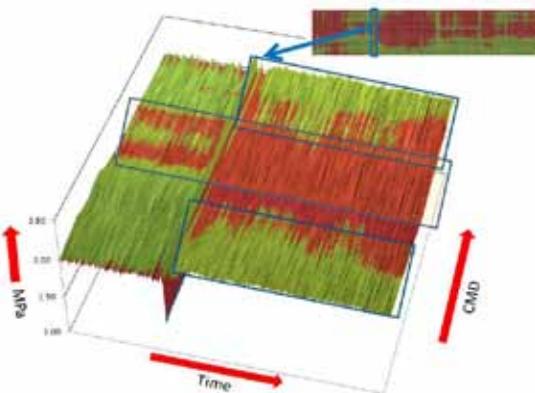


Fig. 2 - Nip pressure vs. felt change

Figure 3 shows the measured nip width prior to shutdown for changing of the bottom and pickup felts and double suction press roll. (Again, to simplify the graph, the actual period of downtime was filtered out.) SMART captured a minor change in the measured nip width after start-up of the paper machine, despite the fact that there was a change of PMC and RC at the same time. After the break-in period of the felts, the nip width was significantly reduced, and a slight overloading effect on tending and drive sides was documented (more red = shorter nip width). Through the change of the double suction press roll, the nip decreased by ~2.5 mm, or ~10% of the prior nip width. That reduction

could be caused by differing cover hardness or a changed diameter of the installed spare roll cover. As an isolated effect this would not have any negative influence to the runnability or productivity, but the width reduction and overloading effect would have gone undetected without SMART.

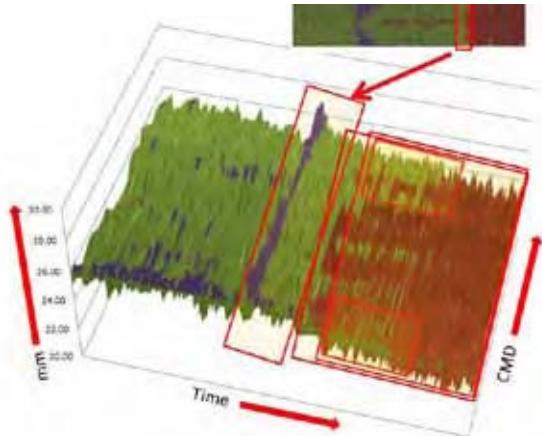


Fig. 3 - Nip width vs. roll cover & felt changes

The SMART system provided UPM with real-time measurement information, which has never before been available, leading to an accelerated trouble-shooting process. Further quality improvements on PM 6 include the 3rd / 4th press and calender.

"We're very satisfied with the SMART System. It provides us with greater information to speed up our troubleshooting. We plan to invest in additional SMART Technology systems for other positions."

Stephan Carda, Production Manager of PM 6
UPM Schongau, Germany.

In summary, each grade of paper produced has an individual pressing environment in which an optimized peak pressure range has been established. Armed with this knowledge the Papermakers can utilize SMART 5.0 technology as a practical engineering tool to ensure the press section operates within this designed peak pressure range. Before SMART 5.0 technology, this was only possible through indirect analytical modeling based on inputs from the roll cover, clothing, and machine parameters. SMART 5.0 accurately identifies and isolates issues for rapid analysis and decision-making to improve the productivity and efficiency of the paper machine. Now, the papermaker will know whether the press nip is performing at peak optimization levels by observing the peak pressure range as a function of nip width. In addition to the press section, SMART technology is also suitable for nip analysis with; couch press rolls, soft calenders, multi-nip calenders, super calenders, size presses, and lamination and finishing applications.

At the end of 2012 Xerium had already sold more than 330 SMART Roll applications worldwide on a wide variety of Stowe roll cover concepts and paper machine types for practically every paper grade.

Authors:

- Stephan Carda, Dir. Production PM 6 UPM Schongau
- Bill Butterfield, CTO, Xerium Technologies Inc.
- Andreas Päch, Dir. Mkg & Application Engineering Forming Fabrics and Rolls, Xerium Europe

For more information visit Xerium.com/SMART.



Newsprint Mills Look For Options to Offset Continued Drop in Basic Demand

Despite the continued decline in demand for newsprint by newspapers several factors including grade substitution, capacity reductions and exports resulted in a relatively calm market for most of last year. However, a stiff drop in North American newsprint demand in early 2013 has weakened pricing and producers are scurrying for ways avoid even larger capacity reductions.

By Harold M. Cody

The North America newsprint market remained in balance for most of last year due to a variety of factors including capacity adjustments and grade shifts. The fact that prices held steady for most of the year in the face of some major headwinds including the continued shrinking in demand by daily and Sunday newspapers is notable. In turn, for most of the year, prices remained stable, but towards the latter part of 2012 things began to unravel and prices started to slip. There is no doubt 2013 will be another challenging year for publishers and mills, but there is hope that changes in the world market coupled with strict supply management can right the ship and avoid a serious downturn in prices.

Statistically, 2012 was a much better year than expected, as domestic shipments fell just 1% from the prior year, driven largely by a significant drop in export tonnage. However, these data don't tell the whole story: shipments to newspaper publishers plummeted nearly 6% but were offset by a surge in shipments to commercial printers. According to reports, a lack of supply for groundwood grades and the lower relative price of newsprint on a square footage basis led to a rise in substitution. The rise in use essentially canceled out the decline in exports.

North American demand fell 1.2% to 4.96 million tonnes in 2012 according to PPPC data and operating rates averaged



Despite some better than expected numbers and welcomed stability, the central challenge for newsprint remains the rapid demise of newspaper print advertising.

92% for the year. Shipments to the U.S. market fell 1.4% vs. 2011 to 4.2 million tonnes. However, overseas exports dropped a whopping 24% to 1.8 million tonnes. Exports in 2011 and 2010 by comparison were 2.3 million tonnes, and 2.5 million tonnes, respectively. North American capacity has been reduced by about one million tonnes since 2010. Shipments by North American mills fell to about 6.7 million tonnes last year, down over two million tons from 2010 levels.

The overall market for graphic papers also continues to decline. Through May, North American demand for printing and writing papers was running 3.4% behind last year's level, while shipments were off by 4.5%.

However, near the end of the year the props holding up the market began to come apart and prices were reported down about \$30/tonne in first quarter 2013. A combination of a slip in exports, which were very weak in the last four months of the year, a restart of some idled capacity and increased availability of groundwood grades combined to weaken the market and led to the decline.

Newspapers Continue Shrinking

Despite some better than expected numbers and welcomed stability, the central challenge remains the rapid demise of newspaper print advertising. According to the Newspaper

Association of America (NAA), print advertising in newspapers has fallen by over 50% in the last five years. Daily and Sunday newspaper advertising revenues in 2012 fell 6.8% compared to 2011 to \$22.3 billion. Since the huge declines posted during the 2008-09 economic downturn, when ad revenue collapsed and fell 40% or almost \$20 billion, revenues have declined on average 6.8% annually over the last three years.

According to NAA, declines were posted in all key categories except for digital advertising, where revenues rose 3.7% to \$3.4 billion. Classified revenues declined 8.0% to \$4.5 billion and retail advertising fell 7.6% to \$11 billion. National advertising dropped 11.6% to \$3.3 billion in 2012. To demonstrate the scale of the decline in newspaper advertising revenues, the print ad total of \$18.9 billion in 2012 is only 40% of the 2006 level. Newspaper advertising revenues peaked at \$47.8 billion in 2005.

A full year breakdown by classified category isn't available, but based on 2012 data for the first three quarters, the decline in classified advertising varied widely. The largest drop was posted by real estate advertising, but automotive and employment revenues also posted substantial declines. The declines were less severe later in the year. For example total classified advertising decreased 9.8% in the first quarter and 8.5% in the second quarter vs. prior year levels, but this eased in the 3rd quarter to a 4.8% decline.

Price Hike Fails but Hope Continues

Pricing appeared poised on an upswing earlier this summer as newsprint producers announced a \$40/tonne increase slated for July 1, 2013 shipments. However, sources report that the increase was rescinded in part due to the fact that the largest producer, Resolute, was not one of the firms announcing the increase. The increase may simply be deferred until later in the summer.

The background behind the attempt to raise prices appears to be centered on better demand in offshore markets and has little to do with domestic supply and demand. Asian demand and pricing have been stronger while a significant decrease in European capacity offers hope for North American exports. Stocks were low as well with U.S. daily stocks down considerably in the first quarter.

Through the first two quarters of the 2013, the fundamentals of the newsprint market were pretty bad. First of all, demand tanked as newsprint shipments to North America were off 9.8% vs. the prior year while shipments to the U.S. were down almost 12% through May of 2013.

Operating rates year-to-date for North American mills averaged 92% and mills operated at 95% in May 2013. Total North American newsprint demand through May was 1.8 million tonnes, a 10 % drop from prior year levels. Those are some sobering numbers.

In contrast, exports posted strong gains in April and May, running 14% and 19%, respectively, above last year's level. Through May, offshore exports were 838,000 tonnes or 11% above 2012 and running at an annualized rate of 2 million tonnes. Gains were driven in particular by a large surge in shipment to Asia, notably to India, along with continued solid export levels to Latin America. Prices were also reported to have gained on the export market in the first and second quarters. Without this surge in offshore tonnage the market would likely have posted severe declines.

Major European capacity reductions in the face of high costs and tepid demand are also a big factor in a potential shift in source of supply for the global newsprint market that could directly benefit North American mills. Since last year, about three quarters of a million tonnes of newsprint capacity has or will close following Stora Enso's move to shutter 470,000 tpy of capacity at a two mills in Finland. The Stora capacity is estimated to account for about 4% of European capacity. On top of this, Russia temporarily closed nearly 750,000 tpy last year as well.

The closures provide hope that U.S. exports could continue high and even expand. Combined with the growth in Asian exports this may give the market a leg to stand on. In turn, if prices don't improve in North America, so the rationale goes, mills will increase export shipments to take advantage of higher prices in other regions.

However, it's likely that despite the opportunities offshore, additional capacity will close in North America as producers match supply to shrinking demand. Last year two major closures occurred with the shut of 275,000 tpy at the Resolute mill in Brooklyn, Nova Scotia and 300,000 tpy of news and specialty papers by Catalyst in Snowflake, Arizona.

Going forward, the decline in demand in mature markets such as the U.S. will continue, but shifts in global supply and capacity may offer North American mills an opportunity to increase exports in 2013. This is particularly important since it is unlikely that last year's shift to newsprint use by printers will continue to the same degree this year. As a result, producers certainly hope the export market can not only support more shipments but also aid in supporting prices. ■

Harold Cody is a contributing writer for PaperAge. He can be reached by email at: HCody@paperage.com.

AF&PA Hosts Successful Industry Fly-In

By Donna Harman, AF&PA President & CEO

The American Forest & Paper Association (AF&PA) hosted its biennial Forest Products Industry Fly-In on June 19 in Washington, D.C. The event attracted more than 45 industry CEOs and company executives to participate in meetings with 72 House and Senate members, making the case for the industry's policy priorities under the theme for 2013 – *Leaders in Sustainable Manufacturing*.

The participants discussed a broad range of topics, advocating for our industry's interests to be represented in air regulations, the U.S. Department of Agriculture's (USDA) BioPreferred program, carbon neutrality of biomass, postal reform, maintaining paper options for government programs, tax reform, truck weights, and green building.

Air Regulations

Paper and wood products manufacturers have spent billions of dollars on regulatory compliance over the years that have led to major improvements in air quality, yet we continue to face challenges from new regulatory proposals. We highlighted our work with the U.S. Environmental Protection Agency, the administration, Congress, states, and other stakeholders to create air regulations that are more cost effective in protecting the environment.

USDA's BioPreferred Program

Currently, forest products are still excluded from the USDA's BioPreferred biobased markets program. Through the *Forest Products Fairness Act of 2013*, we urged Congress to correct this egregious oversight and allow paper, packaging, and wood products to be eligible to compete on a level playing field with other biobased products as was originally intended by the law.

Carbon Neutrality of Biomass

Paper and wood products manufacturers use biomass energy from sustainable forestry operations to run our mills, providing significant carbon reduction benefits to the environment while manufacturing value-added products used in everyday life. We encouraged policymakers' continued recognition of our industry's use of biomass residuals for energy as carbon neutral.

Postal Reform

Approximately one-third of printing and writing paper produced in the U.S. is delivered through the mail system. The U.S. Postal Service (USPS) is facing unprecedented challenges, and only Congress can provide the necessary tools through legislation that will provide the agency with the flexibility and authority to quickly adapt to changing market needs. We urged lawmakers we spoke with to act on legislation soon that will ensure the long-term viability of the USPS.

Maintaining Paper Options

There are several important government services – such as Social Security documents, tax documents, and savings bonds – that are now only available to those with access to electronic formats. We believe the decision to only provide these services in electronic form is short-sighted, ignores the needs of many seniors, could end up being more costly than anticipated, and that people should be able to choose the manner in which they receive information and services. We support the complementary use of



(back, l-r) AF&PA Board Chairman David Scheible and AF&PA President and CEO Donna Harman, along with Jeanne Connelly, Resolute Forest Products (front left), meet with Senator Debbie Stabenow during the Forest Products Industry Fly-In.

digital and paper-based communications rather than choosing one at the exclusion of the other.

Bolstering the fly-in advocacy, AF&PA released its newest web video the week of the fly-in titled "Paper: Making Life Better," which calls attention to the educational, functional, and memorable benefits that paper brings to the everyday lives of people across the country and around the world. The video has been very popular, receiving coverage in *The Washington Post's* Wonk Blog, and is available on AF&PA's website (www.afandpa.org) and YouTube channel (<http://bit.ly/1I1vU93X>).

Tax Reform

Comprehensive reform of the tax code has been a hot topic on Capitol Hill for some time now, and we have added our voice to the business community's call for reform of the corporate tax code in the interest of improving economic growth, job opportunities, capital investment, and the competitiveness of U.S.-based businesses.

Truck Weights

Transporting raw materials to our mills and finished products to the marketplace can be challenging, which is why we support an increase in truck weights on federal interstate from 80,000 lbs to 97,000 lbs, with the addition of a sixth axle for safety. This change would decrease congestion, emissions and energy consumption, and increase efficiency and our global competitiveness.

Green Building

At present, the government relies exclusively on a single green building rating system that discriminates against the use of wood. Members of Congress were encouraged to ensure that the federal government's use of green building rating systems doesn't pick winners and losers in the marketplace and recognizes the benefits of building with wood products.

In discussing these and other important issues with key policymakers, our members put a face on the nearly 900,000 employees of the paper and wood products manufacturing industry – and reminded them why we are the leaders in sustainable manufacturing. ■



The world of synthetic lubricants just took three giant leaps forward.

Challenging times and changing technology call for forward-thinking solutions. That's why we've taken our proven Mobil SHC™ synthetic lubricants — the standard-setting oils and greases for more than 40 years — into the future, unleashing the next generation of productivity with three new advances. Each delivering overall balanced performance with substantial energy-efficiency benefits.

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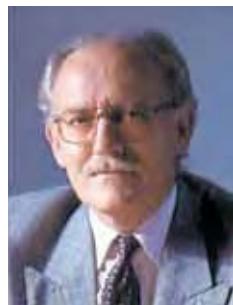
Mobil SHC



The energy efficiency design is a trademark of ExxonMobil Corporation. Energy efficiency relates solely to the fluid performance when compared with conventional reference oils of the same viscosity grade in gear applications. The technology used allows up to 3.6% efficiency compared with the reference when tested in circulating and gear applications under controlled conditions. Efficiency improvements will vary based on operating conditions and applications.

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By David Price

Europe's Papermakers Enduring Stubborn Recession

Three forecasts by European industry watchers are generally pessimistic about near-term growth. But there are some developments in the region which may help to drag our industry out of the doldrums.

The forecasters are CEPI, StepChange Consulting, and Nick Steidl, chairman of leading UK paper merchant H.H Pegg Ltd — the latter writing in the June issue of *Paper Technology*. There is too much detail to include in my column, but the summary of all three is basically: ongoing recession, no sign of a turning point, relentless cost reduction, rising prices for everything especially fiber and energy, job cuts and so on.

What is interesting is that the struggle for survival has pushed sustainability, "greenness," and PR further down the agenda. Each report devotes a lot of space explaining why and how certain grades of paper are being affected by the digital culture, especially graphic papers. CEPI reports that for 2012, European paper production was down 1.6% to 92 million tonnes. For comparison sake, in 2008 that figure was 97.9 million tonnes.

First quarter fiscal results show, generally, decent average profitability, but StepChange reports that CEOs feel negative about any improvement. A minority of CEO's (six) in CEPI's forecast believe things could not get any worse and that a piecemeal upturn is imminent. However, the mantra across the industry is "cash is king," but this is threatened by too many late payments and bad debts. It doesn't help that



Despite massive culling of excess capacity in Europe more needs to be done to balance supply with demand.

banks have stopped lending.

Nick Steidl believes that the industry's problems began in the 90s. A number of European groups decided to invest further in new capacity. They were encouraged by the belief that the growth rates of between 5-8% would continue and did not see emerging markets as a threat. The industry did recognize the peak and when growth disappeared it was thought to be temporary. The mills did not respond until 2004/05 when they started to cut capacity in an effort to

match demand. But it was too little, too late. Now we face over-capacity in Western Europe and new capacity from Asia — the latter looking to move excess production to markets like the UK and USA after their domestic orders have been filled.

Steidl still believes that despite massive culling of excess capacity in Europe more needs to be done to balance supply with demand. Maybe mega-mergers are the answer. But much depends on economic recovery and the behavior of non-European mills.

But Some Markets are Pretty Good

To no one's surprise business is good in the tissue, packaging and label grades — and in the peripheral areas of bio-energy

and timberlands investment. The stand-out performer is European packaging company, DS Smith. In January, it bought the packaging arm of its larger Swedish rival SCA, for \$2.5 billion during the height of the crisis in Europe. The purchase didn't do much to improve sales volumes, but its improved bottom line came largely from savings of bringing together the second and third biggest cardboard packaging firms in Europe.

DS Smith CEO Miles Roberts said he expects to be able to squeeze more out of the business. The company has been able to make savings by merging back office roles and cutting costs in procurement and transport. DS Smith makes boxes for Cadbury's chocolate, PG Tips tea and food giant Nestle. The deal was bet on a long-term shift from plastics to cardboard as Europe's food and consumer manufacturers become more environmentally aware in their packaging. "I personally think we can start to shift consumers out of

big bottles like fabric conditioners into something easier to recycle," Roberts said.

Bio-based Products

The other area of exploration and expansion in Europe is bioenergy/fuel. But my feeling is that the forest industries are still on the fringes of alternative energy development. Not one company has fully invested in the total energy supply chain on a commercial scale. Only the giant agri-groups or energy producers like Cargill and Shell have the deep pockets and other resources to make alternative energy work. In our industry, who can make the link between wood chemicals and something like aviation fuel? I honestly think that our industry needs to rethink its bioenergy strategy and possibly scale back. ■

David Price is a contributing writer for PaperAge. He can be reached by email at: DPrice1439@aol.com.

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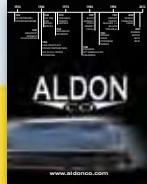


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“Virginising” Tissue Fibre Furnish

Tightening availability and increasing prices of “white” recovered fibre are impacting the developments of the tissue fibre furnish, while recovered fibre usage concentrates on brown grades. So, how is this scenario affecting the tissue industry?

By Pirkko Petäjä

This story was originally published in *Tissue World Magazine*, Apr/May 2013 (www.tissueworldmagazine.com).

Global recovered fibre consumption has historically clearly grown faster than virgin fibre usage. By 2010, recovered fibre represented 55% of the total raw material volume for paper, while virgin fibre pulps had a 41% share and non-wood pulps stood for 4%. The world is still counting on an increased supply of recycled fibre, but the massive volume growth in demand for brown recycled fibre has buried the story of white fibre supply challenges.

Recovered paper consumption and collection are expected to grow globally by almost 60 million tonnes until 2020. Most of the consumption growth will take place in China, where OCC (Old Corrugated Containers, “brown” RCF)

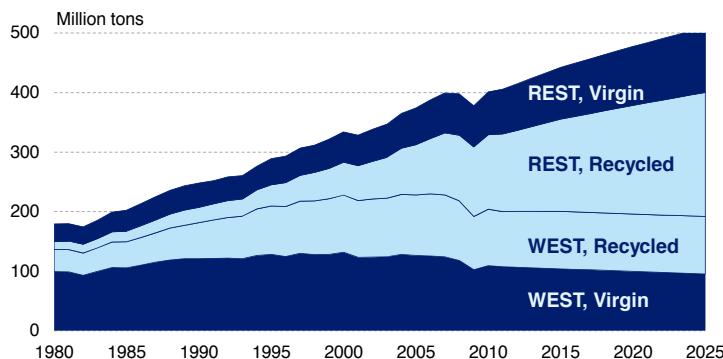
is used for packaging grades. HG/PS (High grades/Sorted Office Paper, “white” RCF used in tissue) consumption is projected to grow 4.4 million tonnes. The increasing supply will be reached by growing consumption of woodfree papers in the developing regions and increasing collection rates in all regions.

RECOVERED FIBRE AVAILABILITY WORSENS, ESPECIALLY FOR THE WHITE GRADES

Collection rates are estimated to reach almost theoretical maximum limits by 2020 which likely will increase recovered paper prices because of higher collection costs. Theoretical maximum collection rate for total RCF is 80-81% (for HG separately, clearly lower than that for OCC and Old News and Mags), the world average for the total rate is currently approaching 60%.

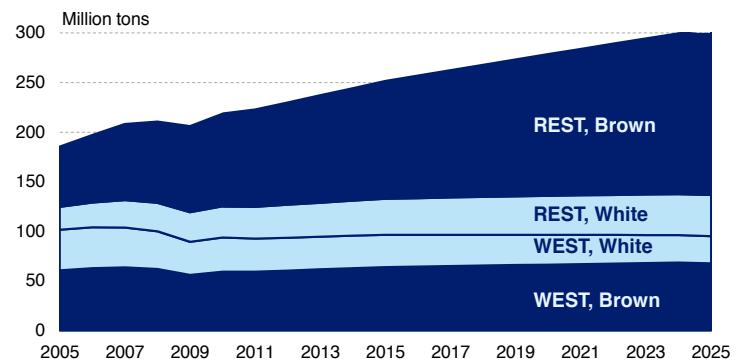
World Fibre Demand 1980-2025

The world still counts on growing supply of recycled fibre.



World Recycled Fibre Demand 1980-2025

Massive volume growth in demand for brown recycled fibre buries a story of white fibre supply challenge.



The decline in graphic paper consumption in the industrialised world and slowing down of the growth in emerging economies will seriously limit the availability of RCF in ONP/OMG and High Grades. The impact is greatest in Europe, in the US and in the international trade of RCF. Potentially, printing and writing paper demand might decrease in developed regions even more than anticipated. Due to the fibre flow from printing and writing papers to tissue and packaging grades, the demand for ONP/OMG and HG RCF continues to increase, tightening the balance significantly. There is very limited possibility to increase RCF share in the white grades.

PRICES OF RECOVERED FIBRE SHOW AN UPWARD TREND EVEN IN REAL TERMS

The rising collection costs are the main price driver, together with the tightening supply/demand balance. As the collection rate increases, the collection cost goes up — it can be exponentially (longer transportation distances, smaller volumes per lot, more advanced sorting, etc). For the users of recovered paper, reject disposal and other usage related costs are also rising which gradually makes virgin fibres relatively more attractive, even if the nominal price difference is still high for many pulp substitution grades.

Recovered paper quality is also deteriorating and expected to deteriorate further. Deteriorating RCF quality increases the cost for the user (lower yield, higher processing costs and lower quality end product). The tissue industry has lower paying capability of RCF than other end users and thus is foreseen to relatively increase the use of virgin fibres.

High quality RCF-based tissue products can only be made with highly bleached deinked pulp (DIP). The high bleaching requirements as well as the fact that the filler/coating con-

tained in many graphic papers is to large extent rejected, lead to a low yield, at some 65-70%, in the deinking process. Due to the low yield, tissue producers' RCF paying capability is lower compared to the producers of some other paper grades where the filler (or coating) is not rejected. In addition, the raw materials required for the high brightness products are high and medium grades of RCF (e.g. sorted office paper), which have the highest prices and fastest deteriorating quality and availability among RCF grades.

The tissue industry has lower paying capability of RCF than other end users and thus is foreseen to relatively increase the use of virgin fibres.

Products/producers with the best paying capability (white surface boards and printing and writing papers) will not see those big changes in furnishes, while products with lower paying capability are expected to see furnish changes — from RCF to virgin based. In tissue furnish, RCF is increasingly foreseen to be replaced by virgin pulp.

WHO DEMANDS RECOVERED FIBRE?

Desired fibre properties determine the basic fibre furnishes and tissue producer's main emphasis is on end-product quality. This drives the raw material choice. Price, certification and other environmental issues are also important but still secondary. Especially in selected markets the environmental argumentation and certification has become a requirement set to the tissue producers, and in these regions the fibre choice is no longer purely an economic or quality question.

The stakeholders in the environmental front include tissue companies themselves, environmentalists / non-governmental organizations (NGOs), retailer chains, governments, institutions and other public buyers as well as final consumers that can be corporates or individual buyers. Environmental requests are much more driven by retailers, NGO's and

Desired fibre properties determine the basic fibre furnishes and tissue producer's main emphasis is on end-product quality.

institutional buyers than by the final consumers. The existing respected environmental certificates and labels in tissue are often programmes which address multiple environmental attributes and provide a rather comprehensive assessment of the overall environmental impacts of the product.

Few labels require 100% RCF content, but at least partial RCF content may be the requirement of some institutional, governmental and public buyers. This is especially impacting AFH (away-from-home) furnish and is not expected to change. AFH furnish is not predicted to "virginise," partially due to the demand but also as there are less quality requirements and economic pressure towards virgin furnish in the segment. RCF is still holding its position as the primary raw material for the lower quality, lower-priced tissue products, which are not economically viable to produce from virgin pulp. The yield of RCF based pulp (not necessarily deinked) used in the low brightness products is higher due to lower washing and bleaching requirements. In addition, these kinds of products mainly contain the cheaper RCF grades.

Also, retailers may require RCF content for part of the products. There is also a debate of the willingness of consumers or the retailers to pay for the RCF content if they require it. Some tissue producers believe this is possible by 2020, others say that in the worsening economic situation this will not happen, in a better economic climate maybe. Several consumer surveys indicate that though the majority of consumers claim that the raw materials influence their buying decision, only some 20% are willing to pay for "eco friendliness."

WHICH IS THE MOST SUSTAINABLE FIBRE?

The growing spectrum of environmental labels that certify also virgin fibre based products means that the ecological benefits of using certain sources of virgin fibre are being increasingly recognised. It is not only the origin of fibre that

determines the eco-friendliness of the tissue products, also sustainability aspects in the tissue process and in the mill need to be considered. Especially water and energy consumption and energy supply concepts are important sustainability issues. Fight against climate change should be seen as equally important as the fibre origin.

The specific water consumption of RCF based tissue manufacturing is significantly higher than that for virgin fibre based tissue — the best technologies limit virgin tissue water consumption in extreme cases to only some 2-3 m³/tonne, while good standard is 4-5 m³/t; in the RCF based tissue the consumption is at its minimum double. Effluent quality is also more "difficult" in the RCF based process. Sludge after RCF handling and de-inking is a clear environmental concern — it typically goes to landfill that in many places starts to be restricted. Also, sludge incineration has been opposed due to environmental reasons. Specific energy consumption is typically higher for the RCF based process than virgin process.

The recent focus on non-wood fibre originates also from environmental concerns. The focus is entirely on the origin of fibre and the other environmental attributes are neglected. One cannot be convinced that, for instance, bamboo can be seen as a more sustainable fibre as there are many attributes which remain neglected.

SUMMARY

While "brown" recycled fibre consumption for board is typically still increasing, "white" recovered fibre availability is significantly tightening and the price of the fibre is increasing due to increasing collecting costs. Tissue has lower fibre paying capability for the white RCF than many other end uses. Due to the tightening availability and increasing prices, especially tissue furnish is expected to "virginise."

RCF content in tissue is primarily requested by retailers, NGOs and institutional buyers, and much less by final consumers.

Fibre origin is not the only factor that determines eco-friendliness; water footprint, carbon footprint and chemical toxicity are equally important. Responsibly produced virgin pulp can be an equally sustainable fibre choice compared to recovered fibre, especially in the fight against climate change. Responsible forestry, renewable raw materials and energy sources can also play a significant role. ■

Pirkko Petäjä, Principal at Pöyry Management Consulting, can be reached at pirkko.petaja@poyry.com. Pöyry is a leading advisor to players within the global Paper, Pulp, Packaging and Hygiene sector (www.poyry.com).

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Advances in Marking Technologies for Defect Identification

Today's defect marking systems help create safer work environments, reduce down time when removing defects, increase process efficiency, and identify exact locations of defects in the roll for converters.

By Tim Rye

Certain defects in a web will cause problems in subsequent processes or quality issues in the final product and must be removed prior to shipping. Not only is defect identification important but also marking identified defects to warn downstream operators to take preventative actions. It has been a common practice to have machine operators manually make marks for process upsets or any other observed defects that may occur during production. However, manually marking with hand flags or crayons can be hazardous and may also violate important safety protocol.

Automated defect marking systems provide marking for defect identification and can be interfaced to web inspection systems or other process control equipment. Once marked, defect positions can be found visually by operators or automatically with detection devices such as cameras or sensors. Defect marking systems help create safer work environments, reduce down time when removing defects, and identify exact locations of defects in the roll for converters. Automated defect marking can help prevent process upsets, increase process efficiency, and ensure that necessary defects are removed from the final product.



An automatic spray marking system is usually interfaced to a web inspection system. The markers operate at extremely high speeds so the mark is always in the precise desired location.

WEB MARKING METHODS

All paper is manufactured as continuous webs that are wound into large rolls for further processing and converting. These processes are very fast and cannot be stopped to immediately address defects or process upsets. As a result, a roll of paper can contain many known defects and sections of off-quality paper that must be removed to

ensure 100% defect product. Critical defects such as large holes, edge cracks, and web breaks will cause runnability problems in downstream processes. Safety concerns in the plant are prohibiting operators from placing flags or hand-marks on the reel. This article discusses how automatic web marking devices have advanced and are now the only solution to all these problems.

Since the early days of papermaking, the need has been to mark the edge of a paper roll to identify the location of known events such as a defect or grade change. Generally, marks would be placed on the roll while it's moving by rubbing a piece of chalk or waxed crayon along the circumference. This marking method would produce a visible colored ring on the end of the roll at the approximate location of the problem. This visible mark was an indicator to a downstream operator to take corrective action during the unwinding of the roll. If marks were missed or in the wrong place the process of relocating the target area was very slow and inefficient.

Over the years there have been injuries to operators who were placing marks on the web by hand. Cuts and abrasions to the hand are likely the most common injury when hand

marking the reel. Unmarked reels sent to the next process can result in a break or blow-up during converting. For example: a large hole that is not marked can catch on the slitter blade of a winder resulting in a web break at very high speeds. The result will be downtime on the winder, poor quality rolls, and exposing the operator to unsafe conditions as the web is cleaned up and rethreaded near the slitter blades. Clearly, hand-marking or not marking the reel is a poor choice.

Early attempts to automate the web marking process have met little success. One attempt to automate the marking process involved moving the web quickly in at a slitter to produce a "dog-ear" sticking out from the reel at the target location. Another attempt involved mounting a marking pen on a pneumatic arm that slammed the marker onto the sheet edge in order to produce a mark. It was soon discovered that the ideal marking process must not contact the web nor introduce a new problem into the web.

In an attempt to improve operator safety, one plant taped waxed crayons to the end of long sticks allowing the operator to stand away from the moving web and mark the reel by hand. Paper flags or tags are sometimes inserted into the reel to mark the target area, but these have to be placed at a nip point resulting in even more unsafe conditions. In many countries the local safety regulatory boards are prohibiting operators from entering the area around the moving reel of a paper or tissue machine. In light of this, the ideal marking method must be automatic.

Here is a list of marking methods used over the years:

- Manual marking by hand flagging or wax crayon
- Forcing the web to move in at a slitter producing a "dog-ear"

- Contact-based automatic tagging with felt tip applicators
- Contact roller marking
- Non-contacting automatic tagging using air to place the tag
- Non-contacting automatic spray marking

AUTOMATIC SPRAY MARKING SYSTEMS

Nearly all marking systems installed today utilize non-contacting automatic spray marking technology. An automatic spray marking system applies a liquid stream of dye onto the moving web via a spray nozzle. Two main types exist: atomized and non-atomized.

An atomized spray nozzle mixes air and liquid together to create a fast drying wide mark. The non-atomized nozzle does not mix air with the liquid and produces a thin, slow drying mark. Marks are usually placed on or near the edge so they can be seen from the end of the reel. In order to ensure the mark is always at the edge, an automatic edge tracking system is utilized to follow normal web wander.

Today's marking systems are capable of spraying up to six colors of dye from one nozzle with very fast color turnover time. The top and bottom surfaces can be sprayed at the same time or independently. Since atomizing dye produces an airborne mist, systems today offer a self-contained vacuum system to pull the mist away from unintended contact areas. Features such as automatic cleaning cycles, automatic sheet break retraction, and built-in maintenance alarms are all common on today's marking systems.

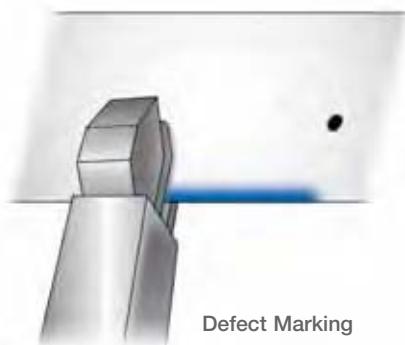
An automatic spray marking system is usually interfaced to a web inspection system. The markers operate at extremely high speeds so the mark is always in the precise desired location. Markers can also accept signals from any process control equipment such as

quality basis weight scanners to mark for any off-spec paper. Marks can be made during grade changes to avoid large amounts of wasted paper. A "slab-to-here" mark can be made during reel changes to avoid waste from too much paper being removed from the reel after turn-up.

THE FUNCTIONS OF A MARKING SYSTEM

The function or use of a marking system varies from application to application. As processes are becoming more and more automated, the role of the Marker is constantly expanding. Today's marking systems perform the following critical functions:

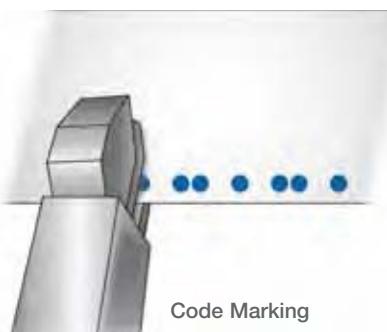
Defect Marking. This system places a mark at the MD position of a defect. The mark is visible from the end of the roll and is intended for the downstream operator as a warning to take corrective action. A sensor can be used to detect the mark during unwinding and to initiate automatic stopping. The mark is usually very long, and during the unwind process the defect will be located precisely at the end of the mark.



Defect Marking

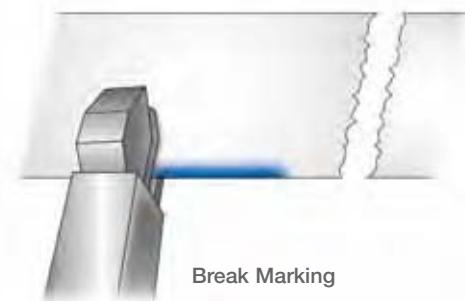
Code Marking. Modern web inspection systems have the capability to synchronize a defect map to the web during the unwind process. To accomplish this, the web inspection system activates a code marking system at the point of inspection that is laying down length or footage marks along the edge of the web. These length code marks

are read during the unwind process to find a precise location in the web according to defects contained in the defect map.



Code Marking

Break Marking. A break marking system is primarily used in a tissue plant to mark the location of all breaks in a jumbo roll of tissue. This mark is placed on the edge of the web immediately after the sheet is restored after a machine break. This type of marking warns the winder or re-reeler operator that there is a break in the jumbo. The operator then slows the process down and avoids costly downtime from a blow-up on his machine.



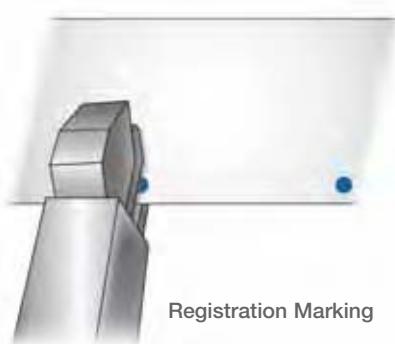
Break Marking

Sheet Count Marking. When paper products are converted into stacks of sheets a sheet count marking system is used to indicate a stack count. For example, every 100 sheets get a mark to aid the operator in counting.



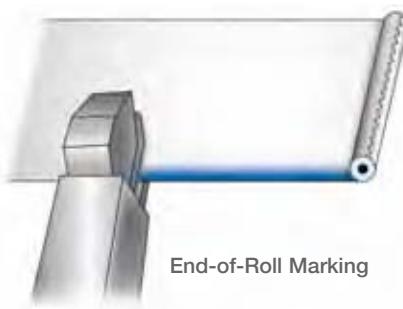
Sheet Count Marking

Registration Marking. Registration marks are precise, evenly spaced marks placed on a moving web to provide reference points for downstream processes. They can be used in a downstream process to activate cutting devices or can be used to measure distortion in a processed web. For example, if short marks are placed precisely one meter apart on a flexible web the amount of stretch during winding can be determined by measuring the spacing of the marks after processing.



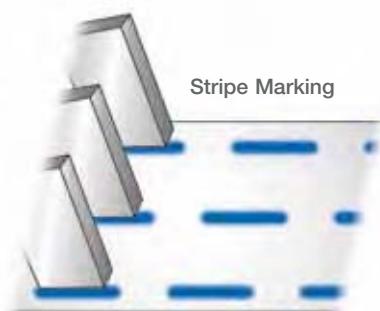
Registration Marking

End-of-Roll Marking. A mark placed near the end of a roll can convey important information to downstream operators. If smaller rolls are being produced from a larger roll, the mark will indicate that there is not enough paper left to produce any more daughter rolls. This saves wasted processing of short rolls. Marks can also indicate to the end user that he/she has reached the end of a rolled product such as cash register tape.



End-of-Roll Marking

Stripe Marking. Marks that are used to indicate product type or orientation are called stripe marks. For example, if the middle layer of a three-ply laminated web has the same appearance as the other layers it is necessary to mark stripes on the web to indicate to operators that this is the middle layer. Marked lines to indicate top vs. bottom of a coated web is another form of stripe marking.



Stripe Marking

CONCLUSION

Today's marking systems have advanced to the point where they have become a critical component in the modern paper manufacturing process. Markers have helped companies to improve quality, increase efficiency and create safer work environments for their employees. The automatic spray maker has solved the problems of past systems. While marking for defects is still its primary use, the marker can now do so much more. ■

With over 30 years of expertise in the paper industry, Tim Rye is President and General Manager of RYECO Inc., a manufacturer of edge crack detection, edge marking and sheet break detection systems. The company is based in Marietta, Georgia. For further information, visit www.ryeco.com or contact Tim at: TRye@ryeco.com.

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A Public-Private Partnership for Bio-based Industries

A number of paper producers in Europe are partnering with the European Commission in support of a EUR 3.8 billion bio-based industry initiative.

Forty-eight companies have joined forces with the European Commission to set up an unprecedented Public-Private Partnership (PPP) for bio-based industries, which brings together EUR 3.8 billion to advance the bioeconomy in Europe.

According to CEPI (Confederation of European Paper Industries), the European pulp and paper industry is a strategic partner in this PPP, with 13 of the 48 member companies from the sector as well as CEPI as an associate member.

"This is a unique partnership that places sustainability at the heart of all economic, social and industrial activities," said Berry Wiersum, CEO of Sappi Fine Paper Europe. "It is about realizing the untapped potential of biomass and waste, to deliver sustainable growth in Europe."

The PPP combines EUR 1 billion of public support from the European Commission's Horizon 2020 program with EUR 2.8 billion of industry investment. The initiative will create new markets and value chains for bio-based products, bringing jobs and growth to Europe, CEPI said.

On July 10, European Commission President José Manuel Barroso launched the Bio-based Industries PPP as part of the European Innovation and Investment Package.

Teresa Presas, CEPI's Director General, applauded the European Commission's initiative. "CEPI has worked hard to help make the PPP become reality. It is a great initiative. This support for innovation and demonstration is much needed. It keeps investments in Europe and helps realise our industry's future."

The PPP will capitalize on Europe's research leadership to bring solutions to commercial scale via pilot and demonstration projects. It brings different industry sectors together to optimize and create new value chains. Equally, the PPP is set to boost growth and jobs especially in rural areas, CEPI explained.

Biorefineries are at the heart of this development. The bio-refinery concept is well placed in the pulp and paper industry, which already constitutes a large part of the bioeconomy in terms of volume and value, CEPI said.

The industry's expertise in forestry, recycling, wood chemis-



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*– Berry Wiersum, CEO,
Sappi Fine Paper Europe*

try and fiber processing provides a unique and strategic opportunity in this initiative. The pulp and paper sector's focus on value creation from raw materials is leading to new products such as bio-chemicals, bio-composite materials and second-generation biofuels, CEPI concluded.

Key objectives:

- Leverage Europe's bio-based research and technology.
- Develop the under-utilized potential of agriculture and forestry residues.
- Replace oil-based chemicals and materials with biodegradable and bio-based ones.
- Generate new industries, revitalize others, and create thousands of jobs.
- Diversify and grow farmers' incomes.

About the Bio-based Industries PPP (BBI)

The BBI is a new Joint Technology Initiative (JTI) or Public-Private Partnership between the EU and the Biobased Industries Consortium (BIC) to realize the bio-based economy vision.

About the Biobased Industries Consortium (BIC)

BIC is an association that was established in 2012 to collectively represent the private sector partners in the Public-Private Partnership with the EU. The Consortium started with 40 European member companies (large and small) and is set to grow over time. It also includes associate memberships comprising RTOs, universities and European trade associations. It is host to a unique mix of sectors including agriculture, agro-food, technology providers, forest-based sector, chemicals and energy. For further information, visit: www.bridge2020.eu

About CEPI:

The Confederation of European Paper Industries is a Brussels-based non-profit organization regrouping the European pulp and paper industry. Through its 18 member countries (17 European Union members plus Norway) CEPI represents some 520 pulp, paper and board producing companies across Europe, ranging from small and medium sized companies to multi-nationals, and 950 paper mills. Together they represent 24% of world production. For further information, visit: www.cepi.org. ■

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