TRADE WARS
The Potential Impact on the Global Paper Industry

Corrugated industry displays ingenuity with liners and coatings
What’s all the chatter about?

If your conventional hard and thin Yankee coating causes blade chatter, switch to Buckman’s Bubond® Yankee adhesive. Bubond Viscoelastic coatings help prevent chatter to protect the Yankee and increase blade life. Bubond adhesives are formulated to improve sheet to Yankee intimacy through the pressure roll nip which results in more efficient heat transfer. As a tissue maker, you can get better drying efficiency, crepe structure, improved softness and better Yankee protection.

Cut the chatter and get down to business.
Contact your Buckman representative or visit buckman.com to learn more.
FEATURES

20  Trade Wars – The Potential Impact on the Global Paper Industry
The current debate over globalization and trade is fundamentally challenging some of the basic beliefs that have dominated global commerce.

24  Paper2017: Where the Industry Meets
Registered attendees representing over 700 companies from virtually every segment of the paper industry’s supply chain took advantage of the premier networking business convention that takes place annually — alternating each year between New York City and Chicago.

26  Irving Leaps Forward
New continuous digester pulp line project results in higher pulp yield, more production, better quality, lower maintenance and chemical savings for Irving Pulp and Paper.

COLUMNS

16  The Responsible Package
When it comes to The Responsible Package, the paper industry’s youth education program designed to highlight paper-based packaging solutions, five looks like a lucky number!

DEPARTMENTS

4  Editor’s Note
6  Industry News
12  Packaging Matters
Corrugated coated substrates, such as ethylene absorbing board used in fruit and vegetable trays, are helping in the battle against food waste by slowing down unwanted ripening, playing a significant role in improving further in-store shelf life and food freshness.

14  People
15  Calendar
18  Mill Safety
Stora Enso’s long-term goal is to become an accident-free workplace. While this work begins with its leaders, building up a company-wide safety culture means that everyone is responsible for making every workday safe.

30  Sustainability Matters
European researchers examine new use for paper industry’s sludge and fly ash.

SERVICES

29  Classified Ads
29  Index of Advertisers
The government of Canada has introduced the Innovation Superclusters Initiative (ISI) — a new opportunity to strengthen Canada’s most promising clusters and accelerate economic growth in highly innovative industries, while positioning Canadian firms for global leadership.

According to ISI’s program guide, “The ISI will invite industry-led consortia to lead and to invest in bold and ambitious proposals that will supercharge their regional innovation ecosystems. By pulling in large firms, innovative small and medium-sized enterprises (SMEs) and industry-relevant research institutions, business leaders will come together — with partners and in new ways — to build business-led innovation superclusters at scale.

“Their plans must build on shared private sector commitment — demonstrated through matched industry funding — to leverage strengths, address gaps, and incent innovation ecosystem players to work together more strategically for the collective benefit of their clusters.”

Proponents leading the development of a bioeconomy supercluster have welcomed the federal government’s launch of the ISI.

“We believe the bioeconomy is the primary industry that will enable Canada to be a global leader in environmental leadership transitioning Canada to a low carbon economy,” said A.J. (Sandy) Marshall, Executive Director, Bioindustrial Innovation Canada.

According to the Forest Products Association of Canada (FPAC), the Canadian bioeconomy covers a wide range of Canadian traditional and non-traditional bio-sourced industrial sectors that employ more than 2 million Canadians and generates sales of $300 billion for our country.

Derek Nighbor, CEO, FPAC, commented, “We believe that innovation development and deployment (including de-risking processes, products and markets) are key to our respective sectors’ competitiveness and diversification to ensure economic growth and job creation in rural and urban regions of Canada.”

In a press release, FPAC stated, “Our organizations are well advanced in the development of a new non-linear approach to the bioeconomy through the establishment of a BioDesign Innovation Super Cluster. The proposed super cluster already has significant industry participation and will be industry led, feedstock agnostic (eg, wood fibre, agricultural residues, waste and other) and focus on achieving specific market outcomes aligned with enabling Canadian companies to be global leaders while creating jobs across Canada. This is a whole of value chain, circular economy approach. It connects players along the value chain from biological feedstock to specific bio-based applications, building on current investments and successes in creating world bio-based technologies, products and markets.”

Through an investment of up to $950 million over five years, the ISI will offer contributions to not-for-profit Entities (or “Recipients”) representing industry-led consortia (or “Applicants”), under the terms of a Contribution Agreement that will be negotiated with successful Applicants to implement their proposal.

Pierre Lapointe, President and CEO, FPInnovations, noted, “Our proposed BioDesign Super Cluster will focus on transformative processes and products. It will also link Tier One players along value chains that will build a sustainable low carbon economy where Canadians live and travel with bio based products.”

The initiative is an interesting one for the forest products industry in Canada, and should spur technological advances towards the gradual replacement of fossil fuels by renewable resources. Comprehensive information about the ISI is available on the Government of Canada’s website: www.ic.gc.ca.
Move your pulp production productivity forward

Improve your business with Valmet’s intelligent, integrated and complete pulping processes from raw material handling to finished pulp bales. Our innovative pulp technology and automation solutions help you to reach high productivity with minimum environmental impact. To maximize the reliability and performance of your processes; utilize our advanced services and remote support. Read more at valmet.com/pulping
NORTH AMERICA

Georgia-Pacific Investing $400 Million to Grow Consumer Products Business

Georgia-Pacific announced significant investments, which total more than $400 million, for its GP Consumer (retail) tissue and towel business. The investments support further growth for key customers’ private label brand products.

The company has approved funding for a paper machine using through-air-dried (TAD) technology, associated converting equipment and infrastructure work. A final decision on the location of the new operations, which will be in the eastern United States, is expected to be announced soon with startup projected for 2019. Approximately 80 jobs would be created to support operations.

“This investment demonstrates our commitment to GP Consumer’s current and potential customers who plan to grow their premium private label towel brands, as well as to expand Georgia-Pacific’s own Brawny® premium paper towel brand,” said Fernando González, president - GP Consumer business.

WestRock to Acquire Five Facilities from U.S. Corrugated Holdings, Inc.

WestRock has entered into a definitive agreement to acquire certain operations of U.S. Corrugated, a large independent manufacturer of corrugated products for packaging and displays.

WestRock will acquire five corrugated converting facilities in Ohio, Pennsylvania, and Louisiana from U.S. Corrugated, through which it provides a comprehensive suite of products and services to customers in a variety of end markets, including food & beverage, pharmaceuticals and consumer electronics. WestRock will not acquire U.S. Corrugated’s facilities in California, Georgia, and in Ashland, Ohio, nor its affiliates in New Jersey and Tennessee.

Jeff Chalovich, President, Corrugated Packaging, WestRock “When the transaction closes, we expect to realize significant synergies from supply chain optimization, better procurement, and integrating approximately 105,000 tons of the containerboard converted annually by the acquired facilities and another 50,000 tons under a long-term contract with a newly created company formed from the remaining assets of U.S. Corrugated.”

WestRock will pay a total consideration of approximately $192 million, representing an EBITDA multiple of 5 times on a post-synergy basis. The consideration includes a combination of cash and WestRock common stock.

The transaction is expected to close in June 2017.

Graphic Packaging and DHL to Invest $274 Million in Louisiana Paper Mill, Folding Carton Plant, Logistics Center

Louisiana Gov. John Bel Edwards on April 28 joined Michael Doss, President and CEO of Graphic Packaging International, and Scott Sureddin, CEO of DHL Supply Chain, North America, to announce the companies will make a combined $274 million capital investment in Northeast Louisiana and develop a 1.27 million-square-foot folding carton plant and logistics center in Monroe.

In West Monroe, Graphic Packaging will continue to reinvest in its paper manufacturing location, including upgrades to the mill’s paper machines. The company’s West Monroe operations will supply paperboard for the new packaging and logistics center in Monroe, where DHL will build the 1.27 million-square-foot center consisting of a 793,000-square-foot distribution facility and a 480,000-square-foot carton converting facility.

In addition to West Monroe mill investments totaling $120 million over the next several years, Graphic Packaging will invest $70 million in new state-of-the-art folding carton plant equipment for the converting plant in Monroe. DHL will construct that building and the adjoining distribution center. The total construction investment for the new Monroe facility will be over $84 million.

“After a thorough analysis of our manufacturing needs, it was clear that Ouachita Parish was the best location for this new facility,” said Graphic Packaging’s Doss. “A number of factors influenced our decision, including access to an experienced and skilled local workforce and our relationship with the State of Louisiana and local community.”

DHL will complete the new logistics center by the second half of 2018, with Graphic Packaging consolidating the production of its two West Monroe carton plants into the new combined converting facility in 2019.
Rayonier Advanced Materials Inc. (RYAM) and Tembec Inc., on May 25, announced a definitive agreement under which Rayonier Advanced Materials will acquire Tembec, providing the combined company with leading and complementary positions in key high purity cellulose end-uses and diversified earning streams from packaging, paper, high-yield pulp and forest products businesses.

The transaction received the unanimous approval of the Boards of Directors of both companies.

The purchase price of approximately US$807 million, including the assumption of US$487 million of debt net of cash, represents a multiple of 4.6 times LTM pro forma EBITDA after expected synergies or 6.3 times before synergies. For Tembec shareholders, the purchase price per share represents a 37% premium to its closing price on May 24, 2017.

RYAM expects to retain Tembec’s Canadian headquarters in Montreal, Québec and a presence in Ontario, and continue all Tembec operations. The company will also proceed with Tembec’s recently announced four-year investment plan for its Québec facilities and make additional investments in other key facilities and operations to further enhance the Company’s growth potential and competitiveness.

“This transaction advances our growth objective to pursue strategic acquisitions where we can leverage our core competencies to provide significant long-term shareholder return,” said Paul Boynton, Chairman, President and CEO of Rayonier Advanced Materials. “By joining forces, we are diversifying our product offering in high purity cellulose and expanding into the adjacent packaging and forest products markets with significant scale. With pro forma revenue of US$2 billion, the combined company will be poised to compete effectively in any market, benefit from greater product and geographic diversity, and provide an attractive value proposition for our shareholders.”

James Lopez, President and CEO of Tembec, said, “Rayonier Advanced Materials is the ideal partner for us, given the complementary nature of our products, expertise, and resources. They are committed to our operations and employees in Canada and France and — above all — to the values we share. This combination will enable us to sustainably grow our business for the benefit of our customers, employees and communities. We are pleased that our shareholders will be able to participate in the company’s future success through an ongoing equity ownership.”

RAYM intends to finance the cash portion of the transaction with a combination of cash on hand and committed bank financing.
Tranlin’s Tissue Mill Project in Chesterfield, Virginia to Be Delayed

Editor’s note: excerpts from a story on the Chesterfield Observer’s website.

Delays continue to hamper Shangdong Tranlin’s proposed $2 billion pulp, tissue, and “biostimulant” fertilizer production facility in Chesterfield, Virginia.

Chinese-owned Tranlin Inc. announced early in May that the project is being delayed due to the parent company’s recent, unexpected success with a new “pulping, papermaking and biostimulant fertilizer manufacturing facility in China.”

The parent company, Shandong Tranlin Paper Company Ltd., is drawing in resources from other operations to bolster new research that could improve production efficiencies and reduce pollution, said Lisa Randall, associate director of corporate communications for Tranlin.

The recent delay is raising questions about Tranlin’s ability to meet earlier commitments to Virginia regarding its construction timeline.

The Chesterfield project, first announced in 2014, was expected to employ 2,000 people and be fully operational by 2020. It’s unclear how long the project will be pushed back by the recent delays, and what the improved “production efficiencies” may mean for the Chesterfield facility. Randall and state officials, however, say Tranlin, also known as Vastly Inc., is moving forward.

“Early indications from performance testing [at the Chinese facility] show that there will be significant efficiencies that will impact all aspects of Tranlin’s U.S. business plans,” Randall said in an email. The company hopes to implement the new technology in its planned manufacturing facility in eastern Chesterfield.

The recent delay follows a series of earlier delays and setbacks. Early last fall, Tranlin officials said difficulties obtaining environmental permits were slowing the pulp mill’s progress. And in March of this year, the company’s chief executive, Jerry Zhiyuan Peng, left the company.

Kimberly-Clark Invests in Energy Efficiency at its Mobile, Alabama Tissue Mill

Kimberly-Clark has approved an investment of $75 million for construction of a new on-site combined heat-power plant at its tissue mill in Mobile, Alabama.

“The Mobile team is excited about the role this state-of-the-art energy supply will play in strengthening our position as a strategic manufacturing site for Kimberly-Clark, and as an employer of choice in southwest Alabama,” said Todd Visscher, Mill Manager for Kimberly-Clark’s Mobile operations. “The investment in highly efficient energy technologies will improve our outlook for long-term operations at the site.”

The investment is guided by Kimberly-Clark’s Sustainability 2022 strategy to reduce emissions and costs through energy efficiency projects across our operations.

“Energy projects like the one in Mobile contribute to our vision for sustainability while creating value for our business,” said Lisa Morden, Director of Global Sustainability for Kimberly-Clark. “Our overarching goal is to reduce our greenhouse gas emissions by 20 percent over 2005 levels by Kimberly-Clark’s 150th anniversary in 2022.”

Currently, the Mobile Mill produces bath tissue and paper towels under the Scott, Cottonelle, and K-C Professional brand names.

The new on-site energy plant is expected to be in operation during the first quarter of 2019.
Brazil's Production of Pulp Records 3% Growth in First Quarter 2017

The Brazilian Tree Industry (Ibá) reported that pulp production recorded 3.0% growth in the first quarter of 2017, totaling 4.69 million tons against the 4.55 million tons recorded in the same period of last year.

In the paper sector, the surplus continues with exports that reached a volume of 544,000 tons sold between January and March — a 5.6% increase compared to the same period in 2016 when 515,000 tons were traded.

In the wood panels segment, domestic sales rose 2.9% in Q1 2017, reaching the 1.6 million cubic meter mark.

Export volume. In the first quarter of 2017, the volume of pulp exports reached 3.3 million tons, an increase of 5.5% over the same period in 2016, when 3.1 million tons were exported. The wood panels segment recorded exports of 284,000 cubic meters (+45.6%).

Export revenue. From January to February of 2017 the sector recorded exports of US$1.9 billion (-2.6%); pulp reached US$1.4 billion (-4.3%), paper registered US$ 464 million (-0.2%), and wood panels US$64 million (+25.5%). As a result the balance of trade in the sector registered a positive balance of US$1.7 billion during the first three months of the year (-0.9%).

Destination of exports. China continues to be the main destination for the Brazilian pulp sector, with a 44% share. In the first quarter revenues for this country increased by 21.6% (US$620 million) compared to the same period last year. Meanwhile, Latin American countries continued to be the main markets for paper and wood panels in the period, with exports to this region increasing 17.5% (US$295 million) and 25% (US$35 million), respectively.

Production. Brazilian pulp production surpassed 4.6 million tons (+3.0%) between January and March of 2017, and paper registered 2.5 million tons (-2.2%).

Domestic sales. In the first quarter of 2017, paper sales on the domestic market reached 1.3 million tons (-3.0%), while the wood panels sector registered sales of 1.6 million m3 (+2.9%).

---

**Works great on paper.**

Essco’s best-in-class doctor blades, holders, and maintenance programs help some of the world’s largest and fastest paper machines deliver consistent, trouble-free performance. It’s a doctor solution that literally works great on paper. And it’s not bad for your bottom line either.

PH: 920.494.3480 || 800.835.7134 || esscoincorporated.com
EUROPE

Metsä Board Starts Up New Extrusion Coating Line in Sweden

Metsä Board announced the startup of its new extrusion coating line at its Husum mill in Sweden. The new state-of-the-art coating line has an annual capacity of about 100,000 tonnes and represented an investment of EUR 38 million.

At the same site, Metsä Board operates a 270,000 tonnes efficient linerboard machine and a folding boxboard machine, which started production at the beginning of 2016 with an annual capacity of 400,000 tonnes.

According to the company, the new extrusion coating line is now producing first orders and it will serve the global food service market and offer improved availability and competitive products.

Sappi Europe to Increase Coated Mechanical Paper Prices

Sappi Europe on May 9 announced a price increase of 5% for all of its coated mechanical reels business as of July 1, 2017.

In a press release, Sappi said, “The continuing cost inflation and the consequently declining profit margins makes the price correction inevitable.”

INDUSTRY SUPPLIERS

Valmet to Supply ThruAir Tissue Line to First Quality Tissue

Valmet will supply a complete Advantage ThruAir tissue line to First Quality Tissue (FQT) in the U.S. The new production line is planned to be started-up in the second quarter of 2018 and will add 70,000 tons of ultra-premium quality tissue to the company’s annual production.

Valmet noted that it has delivered three Advantage ThruAir lines to FQT’s Anderson mill. They were started up in 2011, 2012 and 2016.

“Once again we have been awarded with the opportunity to continue to support FQT on their expansion plans in the ultra-premium tissue category,” said Jan Larsson, Director of Tissue Technology Sales, North America at Valmet.

First Quality Tissue is a member company of the privately-held First Quality group of companies, headquartered in Great Neck, New York. FQT is currently operating five tissue machines in Lock Haven, Pennsylvania and in Anderson, South Carolina.

Kemira Awarded Chemical Management Contract by Pro-Gest for Containerboard Machine Start-up

Kemira announced that it has been awarded a start-up contract at Pro-Gest Mantova in Italy for a new containerboard machine.

According to Kemira, it will supply the start-up with all water treatment and wet end chemistries in line with its Total Chemistry Management (TCM) concept. The contract is signed for three years.

The start-up of the machine is scheduled for the second half of 2017, and the production capacity will be 550,000 tons of high-quality lightweight recycled board.

“Kemira is proud to have the opportunity to participate in the new Pro-Gest Mantova board machine start-up,” says Kimmo Strengell, Marketing Manager, Strength Products, Export Manager, Kemira Pulp & Paper EMEA. “Our TCM model makes chemistry management carefree in all different phases of the mill lifecycle — from start-ups and conversions to day-to-day operations. With our expertise, service capability and broad portfolio of board making chemistries, we are able to support Pro-Gest in reaching the desired quality and productivity targets of the new board grade.”

Pro-Gest is Italy’s leading vertically integrated producer of packaging in corrugated board, active in all fields, from the collection of raw materials to packaging production. It operates in 8 Italian regions with 22 production sites, employing over 1,100 people.

Rodewisch Opens New Office in Brewer, Maine

Rodewisch GmbH, a manufacturer of paper machine clothing, announced that it recently opened a sales and service office in Brewer, Maine to support the company’s customer base in Canada and the U.S.

“We have reached a point where we need to be closer to our customer base in the USA,” explained Peter Klose, CEO of Rodewisch. “We will be more effective in handling inquiries and providing service support with our own, permanent office.”

Rodewisch, Inc. will be managed by its new head of sales, Peter Witt. Witt comes to Rodewisch from a career in consulting for European companies entering the North American market. Most recently he managed a German sales subsidiary in New England, tripling its turnover in nine years.

Rodewisch (www.filztuch.de/en/) focuses on specialized dryer fabrics, with a particular eye on smaller machines and single-fabric orders, delivered very quickly. Particular expertise is with difficult applications requiring unique fabric materials, the company noted.
Voith announced that it will supply Japanese tissue producer Daio Paper with a new XcelLine tissue machine. The new machine will produce approximately 54,000 metric tons per year of high-quality facial tissues, bathroom tissues, and kitchen papers made from virgin fibers.

The expected start-up date of the new machine was not disclosed.

The scope of Voith’s supply includes a MasterJet Pro T headbox, CrescentFormer, the NipcoFlex T shoe press, steel Yankee dryer cylinder with deckle insulation, high-efficiency gas fire hood, MasterReel with automatic core shaft return, and full automation for machine operation control: MCS, DCS and QCS.

Daio Paper, founded in 1943, produces approximately 3 million metric tons per year of different paper grades including paperboards, wrapping papers, linerboards, tissue papers, cardboard papers and pulp.

Andritz has received an order from Paper Mill Investment (PMI) to supply a tissue machine with steel Yankee and shoe press to Algeria. The new plant will produce high-quality facial wipes as well as toilet and towel papers.

The new Andritz PrimeLineCOMPACT tissue machine has a design speed of 2,000 meters per minute and a paper width of 2.85 meters. The order includes a complete stock preparation for virgin pulp with a capacity of 135 bdmt/day.

According to Andritz, the tissue machine is equipped with the latest shoe press technology (PrimePress XT Evo). As a result of the energy-efficient design, improved dewatering, and reduced need for thermal drying, the shoe press minimizes energy consumption.

The 16 ft. PrimeDry Yankee is made entirely of steel and enables a high drying capacity, Andritz added.

Start-up is scheduled for the first quarter of 2018.

Paper Mill Investment (PMI) is a new paper manufacturing company. Its expansion plans include paper mills in several countries of the MENA region.
Corrugated Industry Displays Ingenuity with Liners and Coatings

Corrugated coated substrates, such as ethylene absorbing board used in fruit and vegetable trays, are helping in the battle against food waste by slowing down unwanted ripening, playing a significant role in improving further in-store shelf life and food freshness.

Recent research, commissioned by the European Federation of Corrugated Board Manufacturers (FEFCO), found that corrugated trays offer an effective solution for reducing the risk of contamination during delivery of fresh produce, extending the shelf life by up to three more days, compared to plastic returnable transit packaging.

Corrugated’s protective qualities are serving food at both ends of the temperature scales. Barrier coated liners for cold store packing offer moisture resistant materials to meet the packaging requirements of a wide range of favorites including burgers, patties, chicken portions and meat cuts, while laminates have made it possible to produce a corrugated pack which is heat resistant to over 200°C.

As well as reducing food waste, coatings can offer attractive Point of Sale (POS) solutions. Surveys suggest that the majority of consumers make their purchasing decisions at POS, and to help brands make the most of this key retail space the UK Corrugated Industry is producing sustainable and higher quality, clay coated display boards for digital printing.

These high-quality boards are becoming increasingly popular because they offer a superior printed finish to create exceptionally decorative POS displays that can boost marketing activity in-store and influence customer buying habits.

High-quality boards are becoming increasingly popular because they offer a superior printed finish to create exceptionally decorative POS displays that can boost marketing activity in-store and influence customer buying habits.

Improved strength and better print finish offered by coated corrugated boards are further confirmation of the Industry’s versatility and ability to create bespoke, sustainable and stand-out packaging and marketing solutions for brand owners.”

Corrugated is meeting the modern requirements of many retailers for convenient, attractive and sustainable grocery and food packaging, while still delivering the supply chain with a highly functional packaging that enables both suppliers and consumers to benefit from improved product presentation and protection.

The Corrugated Industry is already a pioneering force in sustainable packaging that does not compromise the integrity of the goods, while innovative developments and investment in linings and coatings have led to new types of even more efficient and decorative in-store solutions.
Catalyst Paper has appointed Edward (Ned) Dwyer as Chief Operating Officer. He will oversee the company’s five manufacturing operations in Canada and the United States. In addition, Om Bhatia has been named Executive Vice President & Chief Financial Officer. Bhatia has more than 15 years of experience in the financial services sector and previously held a progression of senior positions in the pulp and paper industry.

Domtar has appointed Steve Makris as General Manager of Domtar’s Pulp business, effective May 1, 2017. Previously, Makris served as Group Vice President, Strategy and Innovation of Domtar’s Personal Care division.

Holmen has appointed Stina Sandell Director of Sustainability and Communications – a newly created post. Sandell comes to Holmen from SBAB, where she was Head of Sustainability. Holmen’s former Director of Communications, Ingela Carlsson, has chosen to leave the company after nine years in her post.

International Paper has named Guillermo Gutierrez as Vice President of Investor Relations, effective July 1, 2017. He succeeds Jay Royalty, who has been named Vice President and General Manager, Foodservice. Gutierrez joined IP in 1994 and has held roles of increasing responsibility in finance, sales, marketing, supply chain and general management. He currently serves as Regional Managing Director, EMEA Packaging. Gutierrez earned a Bachelor’s degree in finance from Tulane University in 1994 and an MBA from the University of Miami in 2001. Guillermo, his wife Melanie, and their sons will relocate from Madrid, Spain to Memphis, Tennessee.

Norske Skog has appointed Lars P. S. Sperre as interim President and CEO. Sperre replaces Sven Ombudstedt, who resigned on May 7. Sperre has been with Norske Skog since 2006 and has been a member of the corporate management team since 2014. Prior to this appointment, Sperre acted as Senior Vice President Corporate Strategy & Legal.

Sappi North America said that Tom Collins, Vice President and Casting and Release Paper Managing Director, will retire after a successful career spanning over four decades. With Collins’ departure, Deece Hannigan, formerly the Vice President of the Coated Paper & Packaging business, will now serve as the Vice President for the newly expanded Packaging and Specialties Business. In addition, Rick Sloglund, formerly Director, Coated Sheet Grades, will join the Lead Team as Vice President, Coated Business; and Beth Cornier, Vice President of Research, Development and Innovation, expands her responsibilities to include Coated Paper, Packaging and Specialties Paper.

Smurfit Kappa Group in April appointed Saverio Mayer as CEO Europe. Mayer previously held the position of COO of Corrugated and Converting Europe. He succeeds Roberto Villaquiran who stepped down from this position to pursue another opportunity.

Stora Enso has appointed Markus Mannström Executive Vice President for the Biomaterials division, effective June 1. He has been the group’s Chief Technology Officer and a member of the Group Leadership Team since 2015. Mannström replaces Juan Carlos Bueno, who has served as Executive Vice President since 2011 and led the Biomaterials division since its creation in 2012. Mill Manager of Ehingen at the beginning of 2015. Willig holds a master’s degree from the University of Munich in Pulp and Paper Engineering.

Voith announced that Bertram Staudenmaier, Chairman of the Management Board of Voith Paper and Member of the Corporate Board of Management, has decided to look for new challenges outside the company and will leave at the end of this year. Voith noted that a successor will be named soon. Staudenmaier joined Voith as a Member of the Corporate Board of Management in 2005, where he assumed responsibility for Fabric & Roll Systems at Voith Paper.

INDUSTRY SUPPLIERS

Voith announced that Bertram Staudenmaier, Chairman of the Management Board of Voith Paper and Member of the Corporate Board of Management, has decided to look for new challenges outside the company and will leave at the end of this year. Voith noted that a successor will be named soon. Staudenmaier joined Voith as a Member of the Corporate Board of Management in 2005, where he assumed responsibility for Fabric & Roll Systems at Voith Paper.
The Responsible Package: Promoting the Benefits of Paper and Paper-based Packaging

By Donna Harman, President and CEO, American Forest & Paper Association

When it comes to The Responsible Package, our industry’s youth education program designed to highlight paper-based packaging solutions, five looks like a lucky number! AF&PA recently began its fifth year as a joint sponsor of the initiative that in 2017 aims to educate 150,000 fifth graders and their families about the value of paperboard, corrugated cardboard and paper bag products. We’re proud to play a role in raising awareness about responsible consumer behavior regarding paper-based packaging and educating young students that paper-based packaging is a responsible choice. And we firmly believe that the program’s interactive education materials, now distributed to more than 1,100 schools in 14 states, are an avenue to that goal.

Opening the door to knowledge about recycling, science, the environment and math through curricula that supports Science, Technology, Engineering & Math (STEM) programs and National Science Education Standards holds value today and tomorrow. The Responsible Package — accessible to everyone at the newly redesigned website www.theresponsiblepackage.com — exposes children to exciting in-class lessons and materials they can take home to their families.

Let’s take a closer look at the core aspects of the program.

PROMOTING PAPER-BASED PACKAGING

The Responsible Package reveals the ubiquitous nature of paper-based packaging. Students learn to recognize types of packaging they may not have noticed before. They also observe how versatile paper-based packaging is and how it is used to transport, protect and preserve items used every day.

Through the program’s youth education materials, students discover ways to make positive changes to increase use of paper-based packaging, boost recycling and reuse of paper and paper-based packaging at school and at home.

A RENEWABLE RESOURCE

The Responsible Package explains that paper and paper-based products are made from a renewable resource — tree farmers plant, grow, harvest, and replant trees just like farmers who grow other agricultural crops.

Students learn that by using paper and paper-based packaging, they are supporting tree farmers and giving them a reason to continue to grow trees on nearly 500 million acres of working forests in the U.S. — nearly two-thirds of America’s forests.

RAISING RECYCLING AWARENESS

Advocating best recycling practices is an important component of The Responsible Package.

Our industry nurtures an environment where the rate of paper recovery continually increases. In 2014, 96 percent of the U.S. population had access to curbside and/or drop-off paper recycling services. The U.S. paper recovery has nearly doubled since 1990 and has exceeded 63 percent for the past eight years. Through the industry’s Better Practices, Better Planet 2020 initiative, AF&PA members have pledged to increase paper recovery for recycling to exceed 70 percent by year 2020.
Ongoing paper recovery success is possible thanks to the millions of Americans who recycle at home, work and school every day. To prepare the next generation of recyclers, The Responsible Package educates students and their families on the types of paper-based packaging that are recyclable and encourages them to place clean and dry paper products in their recycling bins. And, the Family Recycling Pledge allows families to demonstrate commitment to improved recycling practices in their households.

**CREATIVE REUSE**

Finally, students are encouraged to get creative and explore ways to reuse paper and paper-based packaging. The options are nearly endless — from practical storage solutions to science projects to arts and crafts.

In 2016, one hundred percent of participating teachers and 95 percent of participating students reported that they enjoyed learning from the materials. We thank our partners in The Responsible Package — the Independent Packaging Association (AICC), the Corrugated Packaging Alliance (CPA), the Fibre Box Association (FBA), the Paper Shipping Sack Manufacturers’ Association (PSSMA), the Renewable Bag Council (RBC), and TAPPI — and look forward to building on this success for five more years and beyond.

**About The Responsible Package**

The Responsible Package initiative is an industry-wide effort to promote the versatile and sustainable packaging solutions provided by paper-based packaging. The Responsible Package supports paperboard, corrugated, and paper bag and sack products and will further the paper-based packaging industry’s commitment to providing renewable, recyclable and sustainable packaging that also is reliable and economically viable.

**About AF&PA**

The American Forest & Paper Association (AF&PA) serves to advance a sustainable U.S. pulp, paper, packaging, tissue and wood products manufacturing industry through fact-based public policy and marketplace advocacy. To learn more, please visit: www.afandpa.org.

---

**IBS iDeckle™**

The Edge of Perfection

Over the last few years we have worked with our papermaking experts and customers to develop the iDeckle, the most advanced and user friendly edge control system available. This new generation of deckle board provides many features including:

- Thermal Compensation
- Curved Divergence
- Wire Protection
- Captive Teflon Seal Strip
- T-handle Stand Adjusters
- Topless Teflon Seal Slots
- Self Deploying Kick Stands
- No Plastic Attachment
- One Bolt Per Stand Disassembly
- Outside Cleanup Shower
- Observation Slots
- Hinged Stands for Wire Removal

For more information on these features and how iDeckle can improve your papermaking process, please contact us at info@ibs-america.com

---

*Over the last few years we have worked with our papermaking experts and customers to develop the iDeckle, the most advanced and user friendly edge control system available. This new generation of deckle board provides many features including:*
Stora Enso’s long-term goal is to become an accident-free workplace. While this work begins with its leaders, building up a company-wide safety culture means that everyone is responsible for making every workday safe. Stora Enso’s Anjalankoski Mills have shown that engaging employees by giving actions a local flavor can have a significant positive effect on safety.

To make sure people in all of Stora Enso’s different production units in more than 35 countries pay attention to safety, robust management tools are needed. The company uses a specially designed ‘Safety Toolbox’ at all of the company’s mills around the world. This toolbox contains all safety related tools and programs, and defines minimum requirements for all units. So far these tools have worked well, with accident rates dropping by 50% in just a few years. However, one of the lessons learned along the way has been that the mills need to localize this work according to local tastes and cultures.

**PROMOTING A PROACTIVE SAFETY CULTURE AT ANJALANKOSKI MILLS, FINLAND**

Located in southeast Finland, Stora Enso’s Anjalankoski Mills consist of a paper mill at Anjala and a board mill at Inkeroinen. The two mills’ products include book paper, improved newsprint and boxboard, and they have approximately 500 employees.

During 2014, a disconcerting fact became evident at the mills. In spite of clear progress thanks to 15 years of effort and investments, too many accidents were still happening. In 2013 a total of 16 lost time accidents occurred at the mills — which was 16 too many.

“We decided to revamp our whole safety culture, and the best way to succeed was to work together,” says mill director Ari Johansson. “We believe that the best motivation and the best outcomes arise when everyone has a real chance to influence their own working routines and environment.”

**ADDED LOCAL FLAVOR**

The mills’ local “Accident-free mill” program (given a name
using the local dialect!) has been created together with all personnel to complement the global Stora Enso Safety Toolbox. To kick the program off, ideas were collected from staff members. This created a treasure trove of promising suggestions on issues ranging from safety instruction in plain language to new innovative coaching methods. The program was then defined to encompass more than 500 of the ideas, getting everyone on the right track towards an improved safety culture.

In 2015, during the first phase of the program, safety coaches selected from among the mill personnel held discussions covering safety issues with every single employee in-person. These coaching sessions also spotlighted a comprehensive package of safety measures, including Stora Enso’s existing safety tools, as well as safety risk assessments for all individual tasks.

During the sessions employees also practiced making safety observations. Safety observations can be big or small, and positive or negative. They might concern anything from looking out for tangled cords, to reminding colleagues of the importance of using phones hands-free while driving.

“Safety observations are an important tool enabling us to collect practical ideas as well as information on risks,” says Anjalankoski Mills’ occupational safety manager Seppo Viljakainen. “Our goal is that each worker will submit at least ten observations a year. Giving constant feedback on safe and unsafe behavior ensures that we walk the talk, while also demonstrating how much we care about our colleagues’ safety.”

ACCIDENT LEVELS HEADING DOWN

Thanks to the program, improvements soon became evident, and in 2015 the total number of lost time accidents fell to six. Staff members started to show more concern for their workmates, while considering risks more seriously. More safety observations were reported and guidelines were more closely followed. Safety issues began to become a more embedded aspect of everyone’s work, instead of being a separate topic.

The target of zero accidents still lie some way ahead, but new ideas to build on the already successful work are now being realized. For example, safety coaches have been selected from each work team to serve as safety experts in their day-to-day work, and a mobile data app is already being piloted to facilitate the collection of safety observations.

This article was first published on Stora Enso’s website: www.storaenso.com.

---

**RAILROAD SIGN HOLDERS**

**RAIL-CLAMPING**

**THE MOUSE TRAP**

**MAGNET BASE**

*our most popular sign holder*

*foot-operated hinged sign holder*

*for flush or exposed rail*

*rare earth magnets withstand 60 mph winds*

*NEW: Customized OSHA sign plates*

*Ask about our new solar combo flashing light...*

*OSHA-MANDATED “BLUE FLAG” SIGN PLATES*

*Ask for our informative catalog*

---

**ALDON COMPANY, INC.**

Railroad safety and track repair products since 1904.

847.623.8800 | aldonco.com | e-mail@aldonco.com | Waukegan, IL 60087
The newly inaugurated US President has proposed a review of current US trade agreements and tariffs with the objective of strengthening US-based manufacturing. A potential outcome could be increased tariffs from the US side that most likely would be followed by counteractions from other nations. A chain reaction of events could lead to a reshaped global pulp and paper industry.

There would be line and site closures as well as companies going out of business in markets and regions that were previously dependent on export business. New domestic capacities would need to be created in protectionist markets, in some cases initiating investments in rebuilds and new machines. Alternative markets would have to be found for replaced export volumes, in some cases leading to displacement and closures of non-competitive producers. Market prices could increase in markets where imports are stopped and replaced with costlier domestic production. Overall uncertainties about future market conditions and trade rules would lead to an investment slow-down. Although little is known today about the details and how far-reaching an actual decision would be a couple of possible scenarios can be drafted. This analysis will focus on trade of paper excluding market pulp.

**GLOBAL PAPER TRADE COVERS ALL COUNTRIES AND GRADES**

The total paper volumes traded across national borders in 2015 amounts to 106 million MT at a value in excess of 87 billion USD according to UN Comtrade statistics. This represents approximately 22% of the 2015 global paper capacities. Germany tops the list for both the exporting and importing countries as shown in Figures 1.

Important to note is that a substantial part of the volumes are traded within economic zones such as the European...
Union (EU) and North American Free Trade Agreement (NAFTA). The top three exporting European countries, namely Germany, Sweden and Finland, all have the bulk of their export going to other EU members as shown in Figure 2. Only a minor share is exported to the US. These relatively small volumes could nevertheless create widespread disruption depending on grade, site and corporation. The export volumes would need to find other markets, eventually replacing other less competitive sites and ultimately potentially leading to closures and business exits.

It currently appears unlikely that the inter-EU trade would be the subject to future tariffs since free trade of goods is one of the four fundamental freedoms that the EU charter is based on. The situation regarding NAFTA is different since president Trump has stated that he intends to start renegotiation talks with Mexico and Canada over the NAFTA agreement. Packaging and Printing & Writing grades are the most commonly traded grades (Figure 3).

**US NAFTA PAPER TRADE IS WELL BALANCED**

The US is of special interest since it is one of the biggest importing and exporting nations coupled with the likelihood that changes in US trade policy may be the starting point for a chain of events involving other nations. A closer study of US paper imports shows that Canada is, by far, the country of origin with the largest volumes. Canada’s position as the leading exporting country to the US is not only valid for the total paper imported volumes (57%) but also for every grade except the relatively small imported volumes of Coated Woodfree and Specialty grades where the imported volumes from South Korea and Finland, respectively, exceeds the Canadian volumes. Canada exports one third of its total paper production to the US.

Reviewing the NAFTA trade balance (export less import) as shown in Figure 4, we can see that the US enjoys a small trade surplus of almost 400,000 MT made up of a trade deficit with Canada at 1.6 million MT and a trade surplus with Mexico at 2.0 million MT. The biggest deficit from a US perspective is for Uncoated and Coated Mechanical with a combined trade deficit of approximately 1.75 million MT.

**WOULD US BE ABLE TO REPLACE ALL IMPORTED VOLUMES?**

There are close to 100 shutdowns (excluding demolished) P&W lines in the US. Most of these lines would not be suitable for a restart due to a number of critical factors. Some essential criteria need to be fulfilled for a machine to be a viable restart candidate. The Technical Age (a Fisher

---

**Figure 1.** Top exporting and importing countries 2015 (by volume).

**Figure 2.** Export volume split by destination.

**Figure 3.** Global trade by paper grade 2015 (volume).

**Figure 4.** US NAFTA 2015 trade balance in MT for paper.
calculation that accounts for refurbishments and upgrades) of a line and the time elapsed since the shutdowns are both factors strongly influencing the scope and expense of getting a line ready for production again. In addition, machine Speed and Width need to be dimensioned on par with current market standards. By applying the criteria as displayed in Figure 5, FisherSolve™ identifies only seven machines remaining as suitable for a restart.

Five of these lines are at closed sites which would further increase the costs associated with a restart. The combined annual P&W production of all seven potentially suitable lines at the time of their shutdown totaled approximately 1,250,000 MT. Some additional capacity increase is likely possible with appropriate investments.

Restarts of shutdown lines and construction of new machines will, even in the most optimistic view, require 3-4 years before fully implemented given all necessary planning, permits, hiring and training of personnel as well as construction. The investments would generate attractive business opportunities for equipment suppliers and others. A big portion of the new business would likely benefit non-US corporations such as Valmet and Voith.

Given the above scenario of a total import stop and its consequences, one could question whether this would be in the best interest of the US. An argument could be made that it would be more reasonable to install trade barriers enabling some imports or even keeping the current trade rules.

IMPACT ON EUROPEAN PRODUCERS OF COATED MECHANICAL

A paper trade war would have an impact on European producers in almost all grade segments. As an example, let’s study Coated Mechanical. In 2015, Europe exported approximately 400,000 MT of Coated Mechanical papers to the US. This represents about 5.5% of the total European capacity for the grade which happens also to be the grade’s capacity reduction in Europe in 2016. A stop of exports to the US market due to changed trade rules would therefore have a severe impact. These export volumes need to be shifted to other non-European export markets, shifted to other grades, or result in a taking out of capacities. Assuming that a shift to other export markets or repurposing is unlikely, Europe would be left with line closures as the only option to finding the new capacity — demand equilibrium.

It would be natural to assume that producers with a high cost level would be at highest risk for closures. Figure 6 identifies five lines at four sites with a critically high cost position.
There are, however, other factors besides Cost that have an impact on the viability or mid- to long-term competitiveness of an asset. A more sophisticated analysis could include the line Technical Age, Capital Requirements, and Size in addition to Cost. Such an analysis identifies a slightly different set of high-risk lines as shown in Figure 7.

**FUNDAMENTAL CHANGES OF INVESTMENT PLANNING ASSUMPTIONS**

The paper industry is capital intensive and requires careful long-term consideration for its investment planning. The current discussions and uncertainty about the future global trade landscape and its rules challenges some basic planning assumptions. Sound investment decisions based on a given set of assumptions can suddenly turn risky given another set of planning assumptions. The new 400,000 MTPY FBB line at the Metsä Board Husum mill that started up in early 2016 was built under the assumption that the lion’s share of its output was going to be exported to the US. This may now have to change. Will Metsä Board be able to find alternative markets offering the same profitability or will they be faced with diminished returns of their investment?

BillerudKorsnäs announced in January its intention to invest in a 550,000 MTPY line at its Gruvon site producing Liquid Packaging Board and Solid Bleached Sulphate. Will this investment still make sense in a world of protectionism and trade wars? Uncertainties and increased risk traditionally leads to reduced investments. Some capital expenditure will likely be put on hold until there is clarity about the new trade rules.

China, as the world’s largest paper producer, has recently started to shift its focus from domestic capacity expansion to a more aggressive international expansion strategy. Given its huge cash reserves earmarked for investments, China could easily take on an even larger role in the global paper industry. Will we see a flow of Chinese investments in new US capacities aimed at replacing imports?

**VALUE CREATION OR VALUE DESTRUCTION?**

The current debate over globalization and trade is fundamentally challenging some of the basic beliefs that have dominated global commerce. Potential decisions regarding trade agreements and tariffs cannot be seen as individual stand-alone events since countries, markets and corporations are connected to and interdependent on each other. A shift to a more protectionist approach would undoubtedly lead to dramatic changes of market dynamics and there would be winners and losers as in all change processes. Major capital investments are likely to be delayed until the potential new outlines of global trade have started to crystallize.

The verdict is still out on whether the global paper industry as a whole, once the dust has settled, would experience value creation or value destruction. But maybe the heated debate will merely lead to a strengthening of the acceptance of the overall benefits of global trade and some system improvements. The future will tell.

Urban Lundberg can be reached at: ulundberg@fisheri.com.
Paper2017

Paper2017 lived up to its slogan, “Where the Industry Meets”

The industry met March 26-28 at Paper2017 in Chicago. Registered attendees representing over 700 companies from virtually every segment of the paper industry’s supply chain took advantage of the premier networking business convention that takes place annually — alternating each year between New York City and Chicago.

Co-hosted by American Forest & Paper Association (AF&PA) and the National Paper Trade Association (NPTA), Paper2017 offered registered attendees a unique environment in which to create new business partnerships and expand and enhance existing ones.

Throughout the three-day event, holders of official hospitality suites reported full appointment books and commented that the suites were the perfect place to meet new business partners, while bolstering relations with established customers and clients. In addition, the “Connections Lounge” was available to registered attendees and worked out perfectly for impromptu meetings or simply a place to sit down and get organized in between appointments.

PAPER INDUSTRY LEADERSHIP FORUM: WHY MEGATRENDS MATTER

Max Blocker of PricewaterhouseCoopers provided an overview of megatrends: accelerating urbanization; climate change and resource scarcity; demographic shifts; shift in global economic power; and technological breakthroughs. To elaborate on what these megatrends mean for the paper industry, Mark Gardner of Sappi North America, Mike Graves of Midland Paper, Packaging + Supplies, Linda Massman of Clearwater Paper Corporation, John Rooney of GEC Packaging Technologies, and Steve Voorhees of WestRock joined a panel discussion moderated by AF&PA’s Donna Harman.

The leaders discussed how these five megatrends are influencing their businesses, focusing on workforce recruitment and retention, including mentorship to ensure transfer of “historical knowledge” of company operations, mission and workflow; technology updates and training; government advocacy; and changing consumption patterns around the globe. Sappi
North America’s Deece Hannigan spoke about the industry’s opportunities for the future, and its flexibility and determination to succeed in a changing world.

**PAPER2017 RECEPTION**

Event registrants networked at the Paper2017 Reception immediately following the Paper Industry Leadership Forum. Domtar’s Rob Melton encouraged attendees to get involved in initiatives that support the industry.

**RISI SESSIONS**

During the RISI Global Printing-Writing Papers Market Trends Session, RISI Vice President of Global Graphic Papers John Maine gave the market outlook for printing-writing papers. At the ensuing RISI Global Paper-based Packaging and Recovered Fiber Trends Session, Vice President of World Packaging Ken Waghorne discussed trends in paper-based packaging and Senior Economist of Global Recovered Fiber Hannah Zhao gave an update on recovered fiber. In between both sessions, RISI sponsored a coffee break for attendees.

**PAPER2017 LUNCHEON**

NPTA presented the 2017 Stanley O. Styles Industry Excellence Award to Marjorie Pond, vice president of sales at Neenah Paper, who spoke about the highlights and relationships that helped form her 26-year career in the paper industry. The Paper2017 keynote speaker was Susan O’Malley, the former president of Washington Sports and Entertainment and the first female president of a professional sports franchise. In her humorous address, she shared anecdotes and lessons from her impressive career to illustrate her seven rules for leadership and life: make your bed every day; plan your work and work your plan; outwork everyone; set expectations; when you mess up, make it right; do the right thing, even when nobody notices; and have fun.

International Paper’s Pat Wilczynski highlighted the commonalities between sports and business, explaining that success in both realms depends on having the right talent, sharing common goals, and executing plans well.
New continuous digester pulp line project results in higher pulp yield, more production, better quality, lower maintenance and chemical savings for Irving Pulp and Paper.

By Mark Williamson, Journalist Engineer

When Irving Pulp and Paper of Saint John, New Brunswick, on the Atlantic coast of Canada, started up its new continuous pulping operation in March, 2016, it was a milestone in the Canadian pulp and paper industry. The two-phase modernization project for the bleached kraft pulp mill represented the largest investment in the Canadian industry since 1993. In addition to new chip screening and handling, the new continuous digester pulp line is based on Valmet’s CompactCooking™ technology which replaced 14 batch digesters. In a second phase following the fiber line startup, a new pulp dryer will replace three existing dryers.

For this major investment, Irving was expecting significant returns based on increased mill capacity now and in the future, higher yield, flexibility of operation for hardwood and softwood pulps, reduced maintenance and operating costs, and improved pulp quality. As outlined in a presentation by Irving’s Jim Brewster, now-retired Senior Project Advisor, at
Valmet’s recent Customer Days in Sweden, that is exactly what they got, and some extra benefits as it turned out.

The project was right on schedule and 10% below budget, according to Brewster. The startup was excellent, reaching target production on the third day and running for 75 days continuously after which a recovery boiler washdown was scheduled. Most importantly, the 600,000 man–hour project was completed with only one lost time accident. Irving Pulp and Paper was the general contractor for the project with Valmet providing valuable pre and post installation assistance as team members.

**GOOD TEAM DESIGN, OPERATOR TRAINING**

The challenge in the design phase of the digester was to accommodate hardwood and softwood pulp swings, as the hardwood species (birch and maple) are much denser than softwood species (spruce, balsam fir and pine). Therefore, the residence times for hardwood pulp in the digester are considerably longer at the lower cooking temperature characteristic of CompactCooking.

Brewster comments, “It was a very good team effort between Valmet and Irving to design the digester for maximum production of softwood yet sized also for the considerably lower hardwood chip flow.” The digester is sized for 1,866 adt/d of softwood pulp.

Operator training was another challenge since the 15 process operators had experience with batch cooking only, but none with continuous cooking. Process simulation and interactive multi-media training provided by Valmet were invaluable ingredients needed to bring the operators up to a high level of proficiency before startup.

**NICE AND STEADY OPERATION**

Brewster noted that one of the key features of Valmet’s two-vessel digester is the excellent liquor impregnation provided by ImpBin™ chip impregnation system. It combines the basic features of the traditional chip pre-steaming bin, impregnation vessel and flash system.

Impregnation of chips at low temperature for a longer time has proven to be very effective generating pulps with very low reject content. Brewster notes, “We had significant problems with high rejects with batch digesters, now we have very few.”

Hemicellulose protection and high pulp yields are achieved as well at the lower temperatures. He also notes that that cross-column uniformity is excellent, with no digester circulation required. Cooking temperatures are dramatically lower than the previous batch digesters, at 140 degrees C for hardwood and 148 degrees C for softwood. He concludes, “The machinery is very robust and reliable. Everything runs nice and steady.”

**EXPECTED RESULTS, PLUS MORE**

Although some further optimization continues, Irving Pulp and Paper has achieved the expected results plus more, and some unexpected side benefits. The mill is able to run at a
50 t/d higher production rate with constant recovery boiler solids loading. A good part of that is higher yield from the digester. Oxygen delignification effectiveness is up 5 to 10 percent at lower reactor temperatures and there has been a 15 to 20 percent decrease in chlorine dioxide and caustic soda consumption at the same pulp Kappa number to the bleach plant. Those savings are attributed to an integral pulp washing zone in the digester which reduces black liquor carryover. That lower carryover decreases chemical consumption in downstream delignification and bleaching operations. Even the mill effluent quality is better with BOD down 20 percent and COD down 12 percent.

Energy consumption is down as well. The mill electrical load has been reduced by 1.5 MWe. Process steam is down 40 tonnes/hr, which is then diverted to the condensing turbine, saving 80,000 tonnes per year of biomass. “It has revolutionized the energy system in the mill,” says Brewster.

Softwood pulp strength has improved although there is some further optimization required. Surprisingly, improved runnability on the pulp dryers due to improved drainage properties was an unexpected benefit, with web breaks down 60 percent. The pulp dryers are no longer a mill limitation.

The expected lower maintenance costs are being realized according to preliminary numbers. The mill-wide costs are down about 10 percent, although the digester reductions are higher.

In summary, Irving Pulp and Paper is “delighted with the results,” according to Brewster. “We are looking forward to further optimization.”

For further information about technology portrayed in this story, please contact Mona Henderson, Business Manager, Valmet, at: mona.henderson@valmet.com.
Hydro-Flo™ LP Deckle Systems

Improve MD & CD Profiles
Easy Operation
NO WIRE CONTACT
Very Low Maintenance
Fast Return on Investment
Increase Trim Width

Papermachine.com  +1 989 695 2646  PSISALES@PAPERMACHINE.COM

HAVE HEADBOX ISSUES?
Not getting answers?
Edwin X. Graf, A.P.M., LLC

- 30+ years experience with major builders of both Hydraulic and Roll Headboxes
- Negotiated Rates
Cell: (920) 915-1845
e-mail: Headbox@aol.com

PaperAge

Take out a classified ad and reach thousands of paper industry readers. We set up your ad free of charge.

Contact Mike O’Brien: 781-923-1016, or e-mail: mobrien@paperage.com

index of advertisers

<table>
<thead>
<tr>
<th>Company</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldon</td>
<td>19</td>
</tr>
<tr>
<td>Andritz</td>
<td>13</td>
</tr>
<tr>
<td>Buckman</td>
<td>2</td>
</tr>
<tr>
<td>Edwin X. Graf</td>
<td>29</td>
</tr>
<tr>
<td>Essco Inc.</td>
<td>9</td>
</tr>
<tr>
<td>Kemira</td>
<td>32</td>
</tr>
<tr>
<td>OX Industries</td>
<td>15</td>
</tr>
<tr>
<td>Papermachine Service Industries</td>
<td>29</td>
</tr>
<tr>
<td>Stroud</td>
<td>11</td>
</tr>
<tr>
<td>The Arnold Company</td>
<td>8</td>
</tr>
<tr>
<td>Valmet</td>
<td>5</td>
</tr>
<tr>
<td>Voith</td>
<td>7</td>
</tr>
<tr>
<td>Xerium Technologies</td>
<td>31</td>
</tr>
</tbody>
</table>

www.aldonco.com
www.andritz.com
www.buckman.com
headbox@aol.com
esscoincorporated.com
www.kemira.com
www.oxindustries.com
papermachine.com
stroudindustrialsafetysolutions.com
www.arnoldcompany.com
valmet.com
www.voith.com/papermakingnextlevel
xerium.com
European Researchers Examine New Use for Paper Industry’s Sludge and Fly Ash

Up to half of oil-based polypropylene can be replaced with paper industry side streams. Plastec Finland Oy and Wiitta Oy made a trial batch of floor tiles and storage containers, of which side-streams accounted for 30%.

VTT Technical Research Centre of Finland examined, as part of the EU’s Reffibre project, whether new industrial applications could be developed for various types of sludge and fly ash generated by the paper and board industry. Laboratory tests showed that these side streams can replace up to 50% of oil-based polypropylene. They can be used as a raw material in plastic composites made using injection molding and extrusion.

Large quantities of various side streams are created during the manufacture of paper and cardboard. Part of these can be used instead of natural aggregates as a raw material in concrete or asphalt, or in construction. Large amounts of side streams still end up in landfills and incineration.

Side streams could be used to lower composite manufacturing costs, reduce the environmental impacts of production, and lower the total amount of waste. This would also reduce the production of oil-based plastics.

Laboratory tests showed that 50% of the raw-materials in injection-molded composite could come from paper and board industry side streams. The amount of side streams has an effect on the product’s properties: strength, stiffness, heat resistance, appearance and the texture of the surface.

During the project, Plastec Finland Oy and Wiitta Oy produced floor tiles and storage containers, of which side-streams accounted for 30%. New applications are continually being sought — in the future, they may include pallets and crates, for example.

The possible legal restrictions still have to be explored prior to the product-specific use of side-streams in composites.

VTT coordinated the Reffibre project (No. 604187), which formed part of the EU’s Seventh Framework Programme, during 2013-2016.

In addition to VTT, Technische Universität Darmstadt, Papiertechnische Stiftung, Instituto Tecnológico del Embalaje, Transporte y Logistica, Bumaga BV, Confederation des Industries Papetieres Europeennes CEPI Aisbl, Vrancart S.A. Adjud, Alucha SL, Papierfabrik Utzenstorf AG and Holmen AB participated in the project.

The side streams used for the study were obtained from European companies.

THE REFFIBRE PROJECT

The EU-funded REFFIBRE project took place from November of 2013 and concluded in December of 2016. The project’s intent is the development of tools for the paper and board industry that can instantly provide the needed information regarding the impact of new production processes, raw material input and product innovations, as well as the influence on the recyclability of the end product. The tools enable papermakers to consider innovations affecting profitability in the value chain.

VTT Technical Research Centre of Finland Ltd is the leading research and technology company in the Nordic countries and serves both private and public sectors.
TransForm™ is a new generation of forming fabric technology incorporating innovative new fabric structures with proprietary, game-changing materials delivering superior performance on your demanding paperboard and packaging grade machines.

The TransForm portfolio includes designs specially engineered for fourdriniers, twin wire machines, top formers, gap formers, bottom ply positions, mid-ply positions, and top ply positions.

TransForm’s many benefits include:

- Reduces energy consumption by more than 15%
- Improves fiber retention by up to 15%
- Extends fabric life by 15 to 25%
- Delivers superior fabric stability
- Enhances sheet drainage rates
- Improves sheet quality & strength

Contact your Xerium representative today to find out how to TransForm your machine...and your profits! 

xerium.com
Value built in paper

Kemira’s roots are in the pulp and paper industry and we are here to stay. Our commitment to the industry means we are fully dedicated to the success of our customers.

Kemira products and solutions help you to create value in paper by improving process efficiency, productivity, and end-product quality. Gain peace of mind; choose the team that delivers best-in-class application expertise and a portfolio that covers every process in a pulp and paper mill.

Let’s work together to build value into paper.

www.kemira.com