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MAY/JUNE 2023

**How the Team at
One Georgia-Pacific Paper
Mill Saved Its Future**

**Lean Six Sigma:
Continuous Improvement
Yield Results for Domtar**



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Georgia-Pacific is All-In at Brewton

By John O'Brien, Managing Editor
jobrien@paperage.com

Georgia-Pacific's pulp and paper mill in Brewton, Alabama, has gone through an impressive revitalization since GP acquired the mill in 2007 from Smurfit-Stone Container for about \$350 million. The mill produces white-top linerboard, used for a wide range of packaging products, and solid bleached cartonboard that the company uses in its popular Dixie products, such as paper plates and bowls.

To say GP has made, and continues to make, significant investments in the Brewton mill is an understatement. GP's owner, Koch Industries, between 2009 – 2022, has invested more than \$728 million in capital projects in Brewton. That includes an \$8 million project that proactively looked for and fixed potential weak spots in Brewton's wastewater treatment system, which processes 30 million gallons of water daily.

In addition, Project Phoenix — a \$400 million modernization plan — ultimately transformed the Brewton mill into one of the most efficient pulp and paper mills in the U.S. (see article on page 18). The initiative included a \$388 million energy improvement project that was completed in early-2017. The project modernized and streamlined the mix of equipment in the mill's recovery boiler system and now provides the mill with the ability to generate its own energy using natural gas and biofuel residuals from the paper-making process.

Beyond Project Phoenix resulting in a more profitable operation, Brewton in 2021 became the first U.S. integrated paper mill to earn ENERGY STAR certification by the EPA, meaning it operated in the top 25% of paper mills for energy efficiency.

Brewton also became one of just four paper

mills to achieve the ENERGY STAR Challenge for Industry by the EPA. The achievement recognizes facilities that voluntarily reduce energy use by 10% within five years.

On the heels of completing the recovery boiler project, GP set its sights on another \$50 million investment for upgrades to the mill's paperboard machine, which included a rebuild of a portion of the machine to improve the quality of the mill's white-top linerboard product and increase the mill's competitiveness.

Most recently, in December 2022, GP announced plans to invest \$160 million to further modernize Brewton's operations. The project involves upgrades to the facility's pulp processing systems that will reduce energy and chemicals consumption, other environmental emissions, and allow for more paper production.

Mark Martin, Mill Vice President and General Manager, said, "This is a significant investment for Brewton and will build upon the transformative advancements that have been made here in the recent years. It reinforces GP's long-term operations plan and our commitment to the Brewton community and the region.

"The project also reduces risks for Brewton employees, furthers our competitive position in the industry, and progresses our environmental stewardship efforts with positive impacts to reduce solid waste generation, air emissions, and wastewater," Martin concluded.

Construction begins this year and GP expects completion by Spring 2024.

Congratulations to everyone at the Brewton Mill, Georgia-Pacific, and its forward-thinking owner, Koch Industries.

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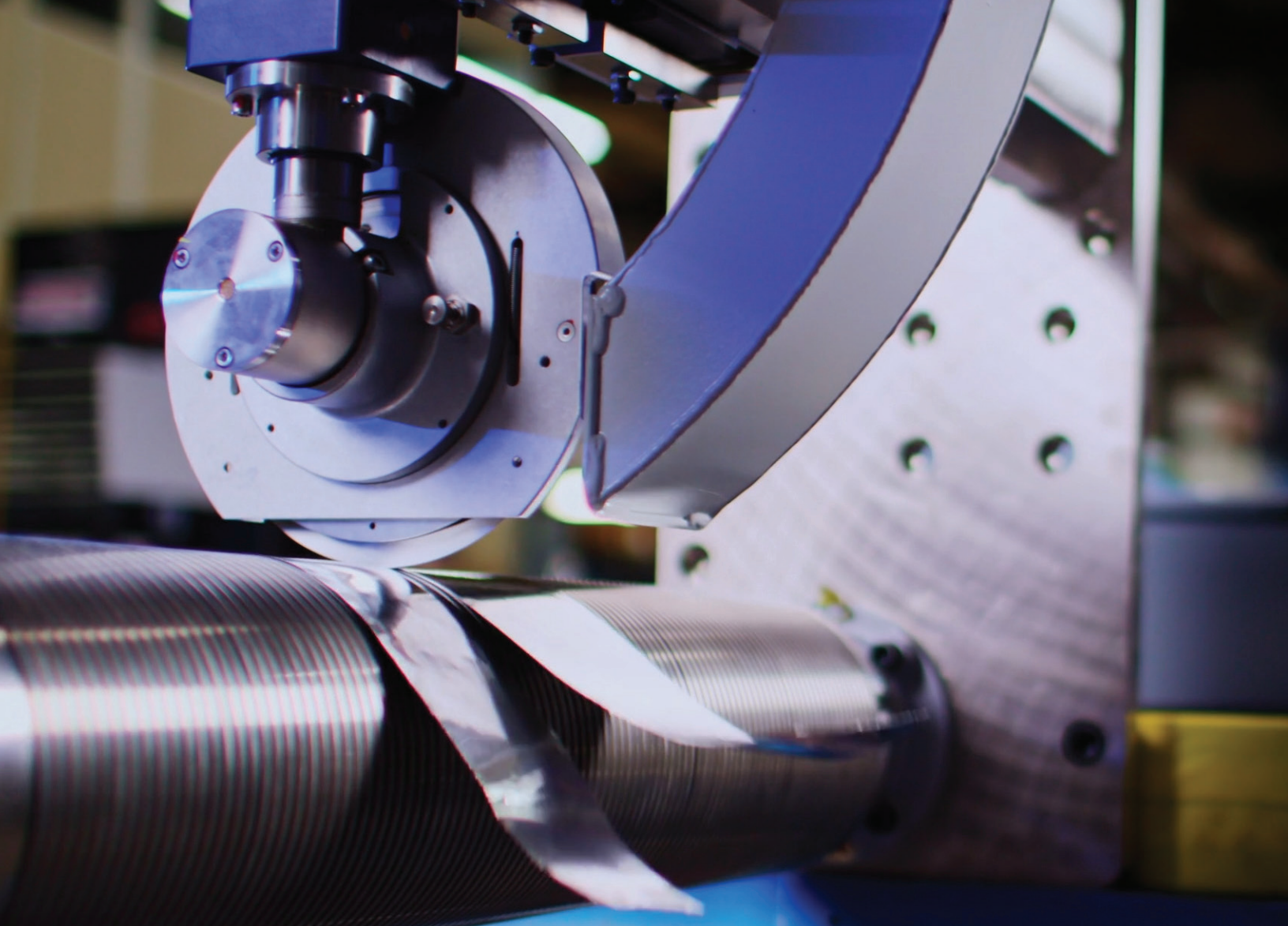
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NORTH AMERICA

Cascades' Bear Island Mill Produces First Roll of Recycled Containerboard



Cascades on May 2 announced that its Bear Island mill in Ashland, Virginia, produced its first roll of 100% recycled containerboard.

Cascades acquired the Bear Island mill from White Birch Paper in July 2018 for \$34.2 million. In October of 2020, Cascades announced plans to convert the mill's idled newsprint machine to the production of containerboard (linerboard and medium grades).

The repurposed machine now has the capacity to produce 465,000 short tons of lightweight, high-quality, 100% recycled containerboard.

According to Cascades, the Bear Island mill is equipped to perform within the top quartile of its industry and will strengthen the operational flexibility, geographic footprint, and competitiveness of Cascades' Containerboard platform.

"After the commissioning of the Greenpac mill nearly 10 years ago, the start-up of Bear Island marks another historic milestone in the strategic modernization of our mill network," said Mario Plourde, President and CEO of Cascades. "More than ever, Cascades has modern and competitive assets that will allow us to pursue long term growth in packaging on a North American scale."

Charles Malo, President and Chief Operating Officer of Cascades Containerboard Packaging,

commented, "This project was the second largest in Cascades' history, and we are very proud to have successfully converted this plant into a state-of-the-art mill that will allow Cascades to grow our market share and enhance service and our portfolio of sustainable solutions for our customers."

The Bear Island mill is now entering the ramp-up phase of the machine and will gradually increase its production to reach full capacity. About 180 permanent jobs have been created with the onset of commercial production.

Permanent Closure of PM 2 at Niagara Falls Mill

Cascades also announced the permanent shutdown of paper machine number 2 at its Niagara Falls mill in New York, which had been temporarily shut down since November 2022. The machine, amongst the oldest in the Containerboard platform, has a production capacity of 90,000 short tons per year, and would require investments for it to remain competitive.

The permanent closure of this machine will impact approximately 40 positions. The majority of these positions are currently vacant or will be subject to attrition in order to minimize the impact on the employees.

WestRock to Close Paper Mill in North Charleston, SC

WestRock on May 2 announced it will permanently cease operating its paper mill in North Charleston, South Carolina, on August 31, 2023.

"WestRock and its predecessor companies have had a long history in the region operating the North Charleston mill, and the contributions of the team members over the years have been greatly appreciated," said David B. Sewell, CEO at WestRock. "The decision to close a facility and impact the lives of our team members is never easy, and we are committed to assisting our North Charleston team with exploring roles at other WestRock locations and outplacement assistance."



The North Charleston mill produces containerboard, uncoated kraft paper (Kraft-Pak®), and unbleached saturating kraft paper (DuraSorb®), with a combined annual capacity of 550,000 tons. Containerboard and uncoated kraft currently produced at the mill will be manufactured at other WestRock facilities.

WestRock intends to exit the unbleached saturating kraft paper business when the mill shutdown is completed.

WestRock is committed to improving its return on invested capital as well as maximizing the performance of its assets. The combination of high operating costs and the need for significant capital investment were the determining factors in the decision to cease operations at the mill.

The North Charleston mill employs approximately 500 people. Employees will receive severance and outplacement assistance in accordance with WestRock policy and labor union agreements.

NORTH AMERICA

Cascades to Close Underperforming Tissue Operations

Cascades announced an important repositioning of its Tissue Papers platform to enhance the performance of the business. The company will simplify operations by concentrating the majority of its tissue product operating activities at core, geographically well-positioned sites that offer opportunities for future development.

Beginning in July 2023, Cascades will progressively close its underperforming plants in Barnwell, South Carolina, and Scappoose, Oregon, as well as the virgin paper tissue machine at its St. Helens plant, also in Oregon.

The equipment slated for closure, which have a combined total annual rated capacity of 92,000 short tons of tissue paper and 10



million cases of converted product, have been operating below capacity producing 56,000 short tons of tissue paper and 5 million cases of converted product in 2022, mostly on the West coast. A portion of this production will

be absorbed by open capacity at our other facilities and by the increase in productivity at our sites, particularly in the United States.

Cascades noted that it has the option to evaluate the possibility of redeploying the seven conversion lines impacted by this decision to other sites at a later date.

Cascades will work closely with its 300 affected employees to mitigate the impact of this announcement. This will include, among other things, offering to relocate as many employees as possible to its other business units in the United States. Employees who cannot or do not wish to relocate to other plants will receive support in their search for other employment.

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NORTH AMERICA

ND Paper Taking Extended Downtime at Old Town Pulp Mill

ND Paper reportedly is taking extended downtime at its Old Town pulp mill in Maine. The downtime began in April.

ND Paper spokesperson Jay Capron told local news outlets that the rising cost of fiber, along with energy costs and market conditions as reasons for the upcoming downtime. He said the company will continually evaluate market conditions for a potential restart.

ND Paper purchased the shuttered mill in October 2018 and converted its production

from bleached hardwood kraft pulp to unbleached softwood kraft pulp.

The mill restarted in August of 2019.

In April of 2021, ND Paper announced the launch of a new recycled pulping operation at the Old Town mill. The new production line has the installed capacity to produce about 200 metric tons per day of unbleached recycled pulp.

According to information on ND Paper's website, the Old Town mill has 199 full-time



employees and operates two pulp lines with the annual capacity to produce 73,000 tons of recycled market pulp (OCC) and 178,000 tons of unbleached softwood pulp (kraft).

Georgia-Pacific Investing \$50 Million to Grow Consumer Towel Business

Georgia-Pacific is making significant investments, totaling more than \$50 million, at its Port Hudson mill in Zachary, Louisiana. The investments will greatly enhance the company's retail consumer towel business.

Investments to the Port Hudson mill include upgrades to increase capacity and improve capability of existing converting equipment and enhance internal infrastructure. Construction has begun on this project, with startup of the



lines scheduled for some time in mid-2023.

The improvements will allow expansion of Georgia-Pacific's own premium paper towel offerings, especially Brawny® Mega and Tear-A-Square®, as well as supporting the growth of current and potential customers' premium private label brands.

The Port Hudson mill currently operates two paper machines and a number of converting operations to make bath tissue and paper towels.

SOUTH AMERICA

UPM Paso de los Toros Pulp Mill Begins Operations

In mid-April, UPM received the final operating authorization for its new UPM Paso de los Toros pulp mill from the environmental authorities, signaling the start-up of the mill.

"The finalization of UPM Paso de los Toros completes our transformative growth investment in Uruguay," said Jussi Pesonen, CEO and President of UPM. "Over the years, UPM has created a highly competitive industrial platform with sustainable, secure wood-supply and efficient logistics in Uruguay. This offers a competitive and secure pulp supply to new and existing customers and helps meet the growing need for renewable materials.

"With an over 50% increase in UPM's

current pulp capacity, this investment creates a step change in the scale of our pulp business and UPM's future earnings. It also has a significant impact on Uruguay's economy and creates significant opportunities for the people and communities," Pesonen said.

In addition to the pulp mill, the overall investment of USD 3.47 billion includes a deep sea-port terminal in Montevideo, a new eucalyptus tree nursery and local investments in infrastructure and facilities. All of these are already completed and in operation.

Bernd Eikens, Executive Vice President of UPM Fibres, explained, "The Paso de los Toros pulp mill with its annual production



capacity of 2.1 million tonnes of eucalyptus pulp puts us among the leading pulp suppliers in the world. With two pulp mills in Uruguay and three pulp mills in Finland, we have a strong offering of sustainable hardwood and softwood pulp for our customers."

The first customer deliveries began shipping in May.

EUROPE

MM Group Investing EUR 660 Million at Kwidzyn Mill

The MM Group (MM) has approved a comprehensive investment project to increase the long-term competitiveness of its largest board and paper mill, MM Kwidzyn in Poland. The investment will focus on energy and CO2 cost reduction, pulp integration, and entry into the market for sack kraft papers.

The EUR 660 million is essentially divided into three parts: The investment in a new recovery boiler and a new steam turbine; a second pulp line and a pulp dryer, which will improve vertical integration and reduce dependence on market pulp; and the conversion of paper machine 1 from the production of copy paper to sack kraft paper.

The implementation of the investment project, which is subject to certain conditions, is planned for the years 2023-2026 with disbursements until 2027. Financing is planned from internally generated resources.



About Kwidzyn Mill

MM Kwidzyn has the installed capacity to produce 745,000 tonnes per year of paper and board. The mill has four machines: PM1 (200,000 tpy copy paper), PM2 (210,000 tpy copy paper and packaging paper), PM3 (75,000 tpy machine finished (MF) packaging kraft paper), and PM4 (260,000 tpy coated board).

The Kwidzyn site also operates a pulp mill with an annual capacity of about 400,000 tonnes.

MM Group acquired the Kwidzyn Mill from International Paper in August of 2021 for EUR 670 million (approximately \$812 million).

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EUROPE

Rottneros Mill to Increase Capacity of CTMP

Rottneros announced that its Board of Directors has decided to invest approximately SEK 180 million to significantly expand the production capacity of CTMP (chemical thermomechanical pulp) at Rottneros Mill in Sweden.

Rottneros said the decision will increase the mill's current capacity of 125,000 tonnes per year to approximately 165,000 tonnes per year at a relatively low investment cost.

Rottneros explained that the additional volume of CTMP is primarily intended for the growing board and packaging market segments as well as tissue.

“The decision to significantly increase capacity within CTMP is a milestone in the continued development of the Rottneros Group as a leading niche player in the global pulp industry,” said Lennart Eberleh, President and CEO of Rottneros. “It is also an aggressive next step in the structural transformation of Rottneros Mill after the decommissioning of the groundwood pulp line. We assess that the future profitability conditions for CTMP are very good, not least through the steadily growing demand for packaging, which is one of the most important application areas.”



The additional 40,000 tpy of CTMP capacity will come on-line in 2024.

Holmen to Invest SEK 450 Million to Rebuild PM52 at Braviken Mill

Holmen is investing SEK 450 million to rebuild a paper machine, PM52, at its Braviken Paper Mill in Sweden.

The Braviken Mill has two paper machines — PM52 and PM53.

According to Holmen, rebuilding PM52 at Braviken will broaden the product range for book paper while enabling the company to efficiently increase the production of fluting,

which is used in the center layer of corrugated boxes. The rebuild is planned for autumn 2024.

“After this investment, we will be able to produce a fluting product that meets the quality requirements for demanding applications with less material consumption than established products,” explained Tommy Wiksand, Vice President Business Development Paper at Holmen. “We will also be able

to offer higher grammages of our book paper from Braviken Paper Mill.”

Braviken Paper Mill is located outside Norrköping, 160 km south of Stockholm, Sweden. The mill produces SC (supercalendered) paper, book paper, light weight uncoated paper, and containerboard. There is also a thermomechanical pulp mill on the site.

Mondi to Modernize Dynäs Kraft Paper Mill

Mondi announced an upgrade program for its Dynäs pulp and paper mill in Sweden, which will increase efficiency and further improve the overall environmental performance of the mill.

The Dynäs mill produces high-quality sack and specialty kraft papers, used for a variety of paper-based packaging solutions for industrial and consumer industries, and is an important part of Mondi's Flexible Packaging business.

The project includes the installation and

upgrade of machinery and equipment such as a new cooking plant and bark boiler, which will improve the mill's energy efficiency. Upgrades will also further reduce air and water emissions, and result in better wood utilization at the mill.

The Swedish Land and Environmental Court approved Mondi's works application in March 2023.

Construction is expected to be completed by the end of 2026.



EUROPE

Norske Skog Starts Production of Containerboard at Bruck Mill

Norske Skog on April 1 started production of recycled containerboard at its Bruck mill in Styria, Austria. Bruck mill's PM3, which was converted from the production of newsprint to testliner and fluting, has the capacity to produce 210,000 tonnes per year.

PM3's production is based 100% on recycled fiber and will use steam from the new waste-to-energy plant, which opened in April 2022.

The Bruck conversion project primarily involved the rebuild/conversion of PM3 (including a new winder, electrical, automation and auxiliary systems); a new OCC plant for 100% of the pulp needed for the production of containerboard; and mill site integration and civil works.



"We are excited to enter a new market," said Sven Ombudstvedt, CEO of Norske Skog. "This represents a new era for Norske Skog and is a major step to become a leading independent European producer of high-quality, renewable, and environmentally produced containerboard."

Norske Skog Bruck will begin delivering containerboard to customers in the second quarter.

Full production utilization of 95% is expected in the second half of 2025, Norske Skog said.

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EUROPE

Landslide in Halden, Norway, Collapses Section of Norske Skog's Saugbrugs Mill

Norske Skog reported that a section of its Saugbrugs paper mill in Halden, Norway, partially collapsed after rocks from a landslide slid into the building. The company said no one in the mill was injured.

The landslide took place in the early morning hours around 4:30 a.m. on April 27.

The part of the building that was heavily damaged houses paper machine 6.

In a press release, Norske Skog said, "This has had a material impact on building structures, cranes, and other machinery and equipment relating to PM6, which will result in a production stop for a longer period."

Saugbrugs PM6 has the capacity to



produce 260,000 tonnes of SC (supercal-endered) magazine paper.

Sven Ombudstvedt, CEO of Norske Skog, said, "There has been a significant landslide which has caused great damage to

the building structure for PM6 at Saugbrugs. We are working to get a full overview of the situation and risk of further landslides, but at the moment it is considered too dangerous to enter the area. This will result in a production stop on PM6 for a longer period.

"Most importantly, no one were harmed in the landslide, but it has been a traumatic and shocking experience for all involved and the local community," Ombudstvedt added.

Norske Skog noted that the mill's other paper machine, PM4, which is in another building on the site, will continue to operate. PM4 has the capacity to produce 100,000 tonnes per year of SC magazine paper.

INDUSTRY SUPPLIERS

Valmet to Rebuild Board Machine at ITC's Bhadrachalam Mill

Valmet will supply a rebuild for ITC Limited's board machine PM 1A at their Bhadrachalam mill in Telangana, India. The Bhadrachalam Mill is India's largest integrated pulping and paperboard manufacturing unit.

The modernization will include an OptiFlo Fourdrinier headbox, modifications in the forming section, an IQ Dryness Measurement, a press section rebuild, an IQ Steam Profiler, and a coater section rebuild with an OptiDry Coat and an IQ Induction Profiler.

"The goal of the PM 1A rebuild is to produce higher basis weight packaging grade for increasing the production to meet the future market demands," said Vadiraj Kulkarni, Divisional Chief Executive, ITC Limited.

Varun Jain, Director, India Region, Asia



Pacific, Valmet, noted, "The rebuild will improve production capacity and quality of the base board, which will result into excellent coated board quality."

After the rebuild, the PM 1A will be capable of producing high quality solid bleached board (SBS), folding boxboard (FBB), art board grades (ART) and cup

board (CUP) for consumer packages with basis weights from 180 to 420 g/m². The wire width of the machine is 3,760 mm, and the machinery has been designed for a production speed at reel of up to 600 m/min.

Start-up is scheduled for the second quarter 2024.

INDUSTRY SUPPLIERS

Voith Contributes to Successful Start-up of PM 2 at SCA's Obbola Mill

Voith, through its PapermakingAcademy and comprehensive documentation, delivered effective commissioning trainings for the November 2022 start-up of the world's largest kraftliner machine, PM 2, at SCA's Obbola Mill in Sweden.

"A key factor to the successful start-up here in Obbola has been the training given to the employees," says Lisa Lundström Hämälä, Process Engineer at SCA. "Voith prepared extensive training materials, and Voith and SCA together made sure there were several occasions for each training so employees could attend while also running our old, now closed paper machine."

Voith's PapermakingAcademy offers target group-specific training programs and courses

that cover the entire life cycle of a paper machine and the plant's components. It also enables customers to use and operate their paper machines to their optimal capacity.

Stefanie Schmied, Concept Manager Digital Training at Voith Paper, added, "With the PapermakingAcademy, we are expanding the previous training offered by the Voith PaperSchool, which primarily covered service-related topics. Voith Paper now offers a comprehensive course catalog — from basic training units on our new machines and commissioning to in-depth, application-oriented expert training of specific service activities."

Voith's PapermakingAcademy course catalog gives information about all courses, the respective learning objectives and the



recommended target groups. This ensures that participants get the maximum benefit from training in homogeneous learning groups and that customers can make use of a comprehensive and unique training offering to educate their personnel in the best possible way.



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PAPER

■ *Billerud* has appointed **Kevin Kuznicki** as the new President for *Billerud North America*. He succeeds **Robert Kreizenbeck**, who left the company in March. Formerly, Kuznicki served as Deputy President and General Counsel for *Billerud North America*. He has been with *Billerud* since 2021 and is a member of the company's group management team.



Kevin Kuznicki

a Bachelor of Science degree in Operations Management & Supply Chain, Summa Cum Laude, from Southern New Hampshire University.



Steve Murphy

■ *Willamette Falls Paper Company* announced that **David Diekelman** has joined the company as National Sales Director East. He has over 30 years of experience in the paper industry and has held various roles in production, development, marketing, and sales. Diekelman holds a BS in paper engineering from Western Michigan University and an MBA from the University of Wisconsin, Oshkosh. In addition, **Robb Carter** joins *Willamette Falls Paper* as a Sales Director. He has worked at *Elopak*, *LSC Communications*, *Evergreen Packaging*, and *Quad/Graphics*, and has an extensive background in printing and converting sales. Carter is a retired Commander from the United States Navy and holds a degree from the University of Wisconsin-Madison.



David Diekelman

■ *Georgia-Pacific* has appointed **Pat Boushka** as Executive Vice President - Packaging and Cellulose. Previously, Boushka held the role of Executive Vice President - Building Products. He succeeds **Scott Light**, who retired from GP on May 1. Also, **Andy Konieczka** has been appointed as Executive Vice President - Building Products. Konieczka previously held the role of President - Structural Panels.



Pat Boushka

■ *Rayonier Advanced Materials* announced that **Michael Osborne** joined the company on April 10 as Vice President, Manufacturing, replacing **Bill Manzer**, who has announced his plans to retire. Osborne is a thirty-plus-year manufacturing veteran, most recently holding the position of Vice President, Global Manufacturing for *Kraton Pine Chemicals*.



Michael Osborne

■ *Mativ* has named **Greg Weitzel** as Global Chief Financial Officer. Weitzel succeeds **Andrew Wamsler**, who left the company on April 1. Weitzel has served as *Mativ's* Vice President of Financial Planning & Analysis since the creation of the company in July 2022.



Greg Weitzel

■ *Twin Rivers Paper Company* has promoted **Tyler Rajeski** to President and Chief Financial Officer. Rajeski joined *Twin Rivers Paper* in April 2022 as Vice President Finance and was named CFO in August 2022. Previously, Rajeski held associate and senior associate positions with leading private equity firm *Atlas Holdings*. While at *Atlas*, Rajeski worked closely with various companies in the *Atlas* portfolio, including *Twin Rivers Paper* and *Finch Paper*.



Tyler Rajeski

■ *Monadnock Paper Mills* announced that **Steve Murphy** has rejoined the company as Director of Supply Chain and Logistics. Murphy holds

■ *UPM* announced that **Jean-François Royer** and **Darren Barker** have joined *UPM's* Pulp sales team in North America as Sales Directors. Both men have many years of experience in the pulp and paper industry from North American companies.



Jean-Francois Royer

RECOGNITION

■ **Jean-Michel Ribieras**, Chairman and Chief Executive Officer of *Sylvamo*, has been appointed to the U.S.-Brazil CEO Forum by U.S. Secretary of Commerce *Gina Raimondo* for the 2023-2026 term. Ribieras, first appointed to the forum in late 2021, joins U.S. and Brazilian chief executives who develop joint policy recommendations to both governments to increase bilateral trade and commerce.



Jean-Michel Ribieras

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Lend Your Voice to Recycling Policy

By Heidi Brock, President and CEO, American Forest & Paper Association

This year, recycling policy is one of the most important items up for discussion in state legislatures across the United States.

While it is encouraging to see policymakers focus on improving recycling infrastructure to advance a more circular economy, there is a significant risk. We must avoid rushed policy consideration, especially if it produces “one-size-fits-all” legislation impacting the long-term success of paper recycling.

Such proposals often fail to differentiate materials with robust recycling rates and end markets, like paper. This policy approach has consequences for our industry.

And it is why legislators need to hear from you. For decades, our industry has used data-driven producer responsibility, characterized by clear and quantifiable sustainability goals.

The paper industry is one of the first manufacturing sectors to set, and achieve, sustainability goals. Driving many of these efforts today are efficient recycling programs.

Convenient and accessible recycling options form the bedrock of an effective recycling system. Thanks in part to our industry’s efforts, 14 million more Americans have access to paper recycling programs today than almost a decade ago.



Thanks in part to our industry’s efforts, 14 million more Americans have access to paper recycling programs today than almost a decade ago.

In fact, 94% of all Americans can access the paper recycling system through either curbside or drop-off collection programs.

There is a strong link between this access and robust paper recycling outcomes. Every year since 2009, the paper recycling rate has met or exceeded 63%.

However, access is only half of the recycling equation. A circular economy requires healthy end markets to ensure that last night’s pizza box goes on to become a new and sustainable paper-

based product.

Recovered fiber is a critical feedstock for our mills. AF&PA members operate more than 100 materials recovery facilities, and the industry continues to make significant and important investments in recycling. This includes new facilities and markets for increased use of recycled paper fibers.

This vibrant paper recycling ecosystem is a model for legislators seeking to enhance their state’s recycling efforts. Indeed, some have already taken notice.

California is leading the nation with a first-of-its-kind “off ramp” provision for sustainable materials, like paper.

This approach is a prime example of data-driven recycling policy. It’s a policy solution that stands in contrast to “one-size-fits-all” models under consideration in other states.

EPR (Extended Producer Responsibility) policies must differentiate between materials with strong recycling rates and robust end markets from those with lower rates.

Your voice and engagement will be essential this year. Reach out to an elected representative. Host a facility tour for community leaders. Or sign-up for our grassroots alerts on our website

(afandpa.org/get-involved) to join our industry in policy conversations.

As advocates, we can speak with a clear and resounding voice. Policy-makers must understand that paper recycling is accessible, well-supported, and used by millions of Americans every day.

Let’s keep it that way.

About AF&PA

The American Forest & Paper Association serves to advance U.S. paper and wood products manufacturers through fact-based public policy and marketplace advocacy. The forest products industry is circular by nature. AF&PA member companies make

essential products from renewable and recycle resources, generate renewable bioenergy and are committed to continuous improvement through the industry’s sustainability initiative — *Better Practices, Better Planet 2030: Sustainable Products for a Sustainable Future*.

The forest products industry accounts for approximately 5% of the total U.S. manufacturing GDP, manufactures about \$350 billion in products annually and employs about 925,000 people. The industry meets a payroll of about \$65 billion annually and is among the top 10 manufacturing sector employers in 43 states. ■



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How the Team at One Georgia-Pacific Paper Mill Saved Its Future

Project Phoenix – a \$400 million modernization plan ultimately transformed the Brewton mill into one of the most efficient pulp and paper mills in the U.S.

This article was originally published by Koch Industries in September 2022.

When Georgia-Pacific bought the pulp and paper mill in Brewton, Alabama, in 2007, it was struggling to maintain its competitive position. The mill's recovery boilers, crucial to keeping the mill operational, had been in service since 1957 and 1964. Its "newest" equipment was last installed in the '80s. Inefficient, unreliable, subject to frequent unplanned events and outages, the mill was in need of drastic changes to operate successfully in the long-term.

But that's all changed.

Today, the mill is a shining example of how the right leadership — combined with forward-thinking investment and modernization — can transform even the most challenged facility. And the Brewton mill's success making bleached paperboard is also part of the success of GP's Dixie plate business, with strong consumer demand for those products during the past several years.

For several decades until 2007, a succession of owners delayed replacing the outdated and outmoded equipment, judging it far too expensive. Instead, they relied on short-term investments to keep the machines running. By the time GP, a Koch-owned company, took over, the mill was spending considerable time and resources just to maintain its operations.

"Most folks who'd been here a while could see the writing on the wall," says Bob Diercks, who now



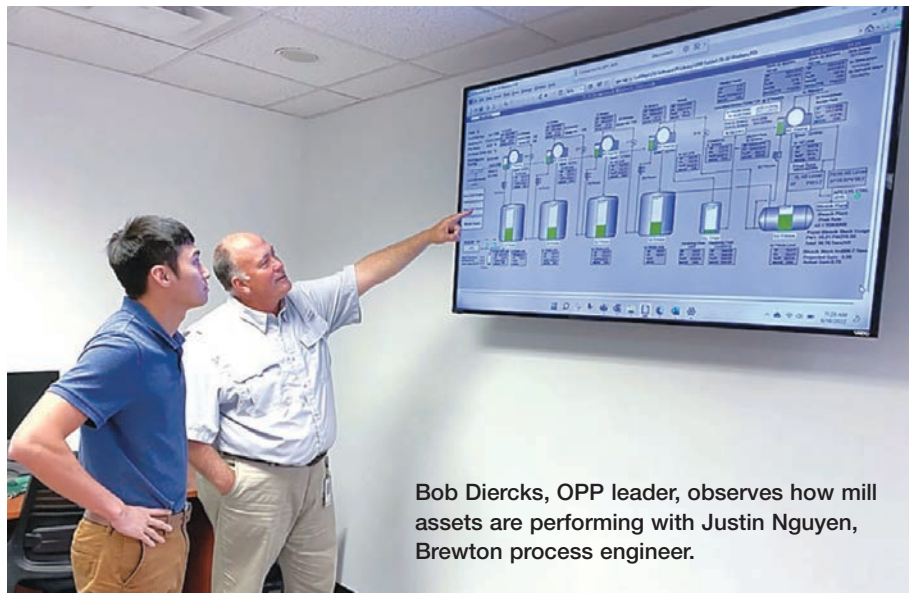
The Brewton mill lowered its energy consumption by 11.2% in just four years, resulting in \$2.6 million in energy savings. The reduction came about primarily through installation of a massive and highly efficient new recovery boiler and evaporator.

works as the optimization for process performance (OPP) leader at Brewton. “I knew the mill was financially struggling and that at some point, it just wouldn’t make business sense to maintain operations anymore.”

Indeed, the economics were stacked heavily against the mill. GP paid \$350 million to acquire it. Bringing it into the 21st century would require at least that much cash — if not more. It seemed impossible. But Bob felt a spurt of hope when he learned GP was a prospective buyer.

“I did enough research to understand how Koch Industries’ investment philosophy is long-term,” he says. “I felt optimistic.”

After the purchase, GP initiated what became known as Project Phoenix — a \$400 million modernization plan that ultimately transformed the Brewton mill into one of the most efficient



Bob Diercks, OPP leader, observes how mill assets are performing with Justin Nguyen, Brewton process engineer.

AT A GLANCE

- ▶ In 2021, Georgia-Pacific’s Brewton Containerboard mill in Brewton, Alabama, became the first U.S. paper mill to earn ENERGY STAR® certification by the United States Environmental Protection Agency (EPA).
- ▶ The mill was also named a 2020 ENERGY STAR Challenge for Industry Achiever by the EPA.
- ▶ Project Phoenix — a \$400 million modernization plan — transformed the Brewton mill into one of the most efficient pulp and paper mills in the U.S.
- ▶ More than 400 people work at the Brewton mill.
- ▶ The mill produces white-top linerboard and solid bleached cartonboard.

pulp and paper mills in the U.S., a feat which not only made it profitable, but also garnered accolades from the U.S. Environmental Protection Agency.

In 2021, Brewton became the first U.S. integrated paper mill to earn ENERGY STAR® certification by the EPA, meaning it operated in the top 25% of paper mills for energy efficiency. Brewton also became one of just four paper mills to achieve the ENERGY STAR Challenge for Industry by the EPA. The achievement recognizes facilities that voluntarily reduce energy use by 10% within five years.

“When EPA released the energy performance benchmarking tool for paper mills, many people said qualifying for ENERGY STAR certification is too difficult. They also said it would be impossible for a paper mill to achieve the ENERGY STAR Challenge for Industry 10% energy intensity reduction goal. The GP Brewton Mill has proved it is possible to achieve both!” said Walt Tunnessen, ENERGY STAR Industrial Sector Manager, US EPA.

“The investments at Brewton have brought the mill’s energy performance to best in class, which will benefit the company, community and our environ-

ment. This is exactly the type of industry leadership that ENERGY STAR seeks to recognize through its benchmarking and recognition programs,” Tunnessen added.

In total, Brewton lowered its energy consumption by 11.2% in just four years, resulting in \$2.6 million in energy savings annually, says Mike Younis, GP’s director of energy & sustainability.

The reduction came about primarily through installation of a massive and highly efficient new recovery boiler and evaporator set in 2016, which burn residual material from the paper-making process to generate steam to power the mill. The project included a 75-megawatt turbine that produces enough electricity to serve 60,000 homes, or the entire city of Auburn, Alabama, about 150 miles northeast of Brewton, Mike says.

The Brewton mill joins seven other Koch company-owned facilities that also have been named ENERGY STAR recipients: Flint Hills Resources’ Pine Bend refinery; Koch Agriculture and Energy’s Beatrice, Nebraska; Enid, Oklahoma; and Fort Dodge, Iowa, fertilizer plants; Georgia-Pacific’s Naheola Mill in Alabama and Leaf



Roberto Flores, senior regional environmental manager, assess water treatment equipment with Brewton lab technician Mechelle Reed Ridgeway.

River Mill in New Augusta, Mississippi; and Guardian Industries' glass plant in Dewitt, Iowa.

While certainly one of the biggest, Project Phoenix is not the only effort focused on optimizing the Brewton mills operations. Roberto Flores, GP Containerboard's senior environmental regional manager, for example, recently started convening regional environmental and process leaders to share best practices and resources among all its plants to ensure each one is able to improve and sustain its environmental performance.

"By regularly sharing environmental efforts amongst all of our containerboard mills, we can leverage new ideas that not only benefit GP, but also the communities where we operate," Roberto says.

From 2009 through 2022, Koch has invested more than \$728 million in capital projects in Brewton. That includes an \$8 million project that proactively looked for and fixed potential

weak spots in Brewton's wastewater treatment system, which processes 30 million gallons of water daily.

"We must demonstrate to our community and our neighbors that we are responsible with the assets we share, like the Conecuh River, and are aware of the opportunities they have given us to work here," Roberto says.

That's a philosophy that resonates

"The EPA recognition demonstrates that we're not just full of rhetoric. We're actually taking steps and being successful in implementing our commitment to environmental stewardship."

— Bob Diercks, Optimization for Process Performance (OPP) Leader at Georgia-Pacific's Brewton Mill.

with Bob, whose three sons — including one who now works with him — have grown up in Brewton.

"I want to make sure this facility is using resources as efficiently as possible and finding ways to reduce environmental emissions for them and for future generations," he says. "The EPA recognition demonstrates that we're not just full of rhetoric. We're actually taking steps and being successful in implementing our commitment to environmental stewardship."

Editor's Note: \$160 Million Modernization Project on Tap for 2023-2024

Towards the end of 2022, Georgia-Pacific announced that the Brewton mill is investing \$160 million to modernize its operations.

The project involves upgrades to the facility's pulp processing systems that will reduce energy and chemicals consumption, other environmental emissions, and allow for more paper production.

"This is a significant investment for Brewton and will build upon the transformative advancements that have been made here in the recent years," said Mark Martin, mill vice president and general manager. "It reinforces GP's long-term operations plan and our commitment to the Brewton community and the region."

"The project also reduces risks for Brewton employees, furthers our competitive position in the industry, and progresses our environmental stewardship efforts with positive impacts to reduce solid waste generation, air emissions, and wastewater," Martin said. "It's not just the right thing to do for our business and employees, but for our community too."

Construction gets underway this year, with an estimated startup of the state-of-the-art technology in spring of 2024. ■



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Lean Six Sigma - Continuous Improvement Yield Results for Domtar

This article was originally published by Domtar.

At Domtar, we have launched a Lean Six Sigma program to apply a continuous improvement mindset to everything we do — and the efforts are paying off.

Through Lean Six Sigma projects and other continuous improvement initiatives, our teams have uncovered millions of dollars in efficiencies and process optimization savings across our manufacturing network.

“Lean Six Sigma is a statistically-driven methodology to help identify issues in processes that cause waste or variability,” says Continuous Improvement Manager Colby Cook. “It’s based on a questioning mindset that helps us optimize processes by ensuring that when we find something



we can improve, we do it in a way that treats the root cause with structured and sustainable solutions.”

To date, 11 Domtar employees are Lean Six Sigma Black Belts. To achieve

this, professionals attend two weeks of classroom training and pass a certification exam. Additionally, Black Belt candidates must complete a process improvement project at their location using the program’s fundamental tools, with oversight from a certified mentor.

One Black Belt project is yielding significant productivity benefits that can be replicated across our manufacturing network.

Lean Six Sigma Black Belt project optimizes wood chip acceptance rate to increase pulp production

Wood chips at many of our mills are cut to specific size parameters to properly feed the pulp digester to produce pulp or paper. Chips that don’t meet those specifications are sent to bark boilers or a chip sizer to be re-cut to

WHAT IS LEAN SIX SIGMA?

Six Sigma focuses on reducing process variation and enhancing process control, whereas lean drives out waste (non-value added processes and procedures) and promotes work standardization and flow. The distinction between Six Sigma and lean has blurred, with the term “lean Six Sigma” being used more and more often because process improvement requires aspects of both approaches to attain positive results.

Lean Six Sigma is a fact-based, data-driven philosophy of improvement that values defect prevention over defect detection. It drives customer satisfaction and bottom-line results by reducing variation, waste, and cycle time, while promoting the use of work standardization and flow, thereby creating a competitive advantage. It applies anywhere variation and waste exist, and every employee should be involved.

Source: ASQ (American Society for Quality)

the correct size. The more chips that enter the machine, the more fluff pulp that can be produced from a single load of wood.

Domtar's Plymouth Mill is located off the Roanoke River and produces softwood fluff pulp. The mill operates one fiber line with the installed capacity to produce 390,000 air dry metric tonnes per year.

Chad Rangnow, Domtar senior reliability manager, focused his Black Belt certification project on optimizing the Plymouth Mill's wood chip acceptance rate. In doing so, he and the Plymouth team improved the facility's chip acceptance rate by more than four percent.

"We worked directly with the mill to analyze every aspect of the chipping process," Rangnow says. "We looked at how the chipper is set up and to what clearances, how often we perform routine knife changes to ensure the chipper produces a consistent size, and how often we take samples to be able to react to chip-size results."

Increasing the chipper's effectiveness



Chad Rangnow, Domtar senior reliability manager, focused his Black Belt certification project on optimizing the Plymouth Mill's wood chip acceptance rate. In doing so, he and the Plymouth team improved the facility's chip acceptance rate by more than four percent.

has resulted in a more efficient cook in the digesters. Even after the project was complete, the woodyard team at the mill continued to improve the chipper equipment's efficiency and has

gained an additional four percent acceptance. These improvements have resulted in significant savings for the mill.

Rangnow's project is now bringing awareness to chipper efficiency across our mill system.

"Chad's project is a perfect example of Lean Six Sigma and continuous improvement in action," says Senior Director of Performance Improvement Kathy Collins. "We're now applying what we learned at Plymouth across our network. We currently have active chip optimization projects at our Rothschild, Marlboro and Windsor mills as a result of his work."

In addition to ongoing Black Belt projects, Domtar has also started a Green Belt certification program to expand expertise at each of our mills.

"Our focus on Lean Six Sigma and continuous improvement is creating a lot of tangible benefits for Domtar," Collins says. "We're excited about applying these principles to processes at each of our facilities." ■



In addition to ongoing Black Belt projects, Domtar has also started a Green Belt certification program to expand expertise at each of the company's mills.

Planning is the Key to Process Safety

The earlier that process safety is incorporated in the process design, the lower the risk of a negative event impacting production.

This article was originally published by UPM.

Process safety can be summarized as designing processes safely, operating them safely and maintaining them safely. The term refers to good design principles, safe operational practices, technical implementations, and the maintenance of systems and processes related to hazardous substances.

In the most serious cases, process safety incidents can impact not only people and the local environment, but also production and business continuity if plants or refineries require extensive repairs. The severe fire at the Lappeenranta biorefinery in Finland in the spring of 2021 is an example of the serious negative impact that process safety incidents can have.

UPM aims to integrate process safety into all safety management as part of its 2030 responsibility targets. With the company's expanding biofuel and biochemicals businesses – including, notably, the Leuna biochemicals refinery currently under construction in Germany – operations throughout these process and chemical industries require significantly more strict process safety management.

“The new UPM-wide standard for process safety defines UPM's internal minimum requirements and targets. Process safety risk assessments were incorporated into the investment process, and the key elements of process safety are also integrated into loss prevention surveys that are conducted in our mills



The key word is systematic, and it is critical that we are rigorous in the application of rules and guidelines from the very earliest stages of every project and throughout every step of the lifecycle of that project.

by external partners,” says Jaakko Hyvönen, UPM's Process Safety Director.

“With traditional occupation safety, we protect the individual workers, but with process safety we can protect the worker, our contractors, our neighbors, our business and the environment around us,” explained Hyvönen. “In process safety, the frequency of incidents is much lower than in traditional occupational safety, but the consequences can be much more severe.”

Biochemicals and Biofuels Pioneers

The biochemical refinery under construction in Leuna shows the way forward for process safety in all production plants. Following the fire at the Lappeenranta biofuels refinery in 2021, UPM undertook an extensive

investigation and applied the learnings from that incident both at Leuna, and elsewhere in UPM. It became clear that UPM needed to apply process safety systematically, and early enough in its investment projects. Additionally, the company needed to also enhance the competence around process safety.

“We are implementing the experience and design lessons we have had from the Lappeenranta biorefinery over the last seven years that we can implement at Leuna. We aim to have a smooth start up, smooth operation without leaks, and without dangerous situations that can harm personnel, our assets or our industry neighbors. That's the target,” notes Robert Sachse, Process Safety Manager, UPM Leuna biochemicals refinery.

Managing Technological Risk at Leuna

“A holistic approach to process safety aims to manage technical risks. It means that when you design your equipment, you always target for a residual risk that you can accept. That is why we introduce mutually reinforcing risk-reducing protection layers. If during your safety studies you discover that a certain failure in operation could lead to a pressure build up that could lead to equipment rupturing, you implement additional safeguards to them. It needs to be implemented already during design.”

“Even if you have several protection layers, there is still the possibility that all these layers may fail. Either elements are in maintenance and not in operation, or elements have not been tested in the right manner, or an operator has had a bad day. Then there can be an escalation of a scenario. Emergency preparedness must also be considered.

“We need to train our emergency response teams so that, for example, if there is a release of a dangerous material, we calculate what is the dispersion, what is the affected area and what we need to do. And for the worst-case scenarios we do emergency response planning, meaning who needs to be informed, what is the equipment fire-fighters, or the emergency response team need to have with them. Can they fight a fire caused by burning fibers or a fire caused by burning hydrogen? These need different firefighting methods,” adds Sachse.

UPM has assessed the severity of all scenarios that could happen, and do not rely on only one protection layer. To that end, there is currently no scenario where the company only has the human barrier to avoid an escalation. If the human barrier fails, there are backup systems, like automated systems that will stop the plant. This is a core principle behind process design.

In addition, at Leuna, a digital twin of the biorefinery is currently being developed. It will utilize dynamic simulation of chemical processes to mimic exactly what will happen in the plant after operator action or malfunctions. So, for process safety and operator training, when the digital twin implements certain actions, process engineers and other specialists can see what these actions may lead to in real-world situations.

“Regarding the biorefinery, these puzzle pieces, they existed before and have been used for other applications, but no-one has ever put them together to create this image. The digital twin is really combining processes to make wood into wood chips, to transform them, to separate the lignin part, and that part that you can transform into sugar, to create the sugar and to get out of the sugar some biomolecules. There are several steps that have never been combined in a way we are doing it now” says Sachse.

Putting People in the Center

UPM has undertaken significant work to enhance safe behaviors. “Training is the key when we need to think how we make decisions and how to design the process so that employees can work safely,” says Hyvönen.

Many of the personnel at Leuna will be coming from the chemical industry. Some will be arriving directly from university or from an academic background and will have been working in laboratories, for example. Consistent practices are a necessity.

“For safety, it is important that we understand things in the same way and speak a common language to understand each other. We also provide advanced training for people who play a role in day-to-day business and process safety, so for operators, maintenance people, for technical inspectors. Then there will be extra training for people who really



With UPM's expanding biofuel and biochemicals businesses – including, notably, the Leuna biochemicals refinery currently under construction in Germany – operations throughout these process and chemical industries require significantly more strict process safety management.

guide the sessions that are performed, like technological risk analysis, for example,” adds Sachse.

“The Leuna biorefinery's process safety induction trainings are ready and people trained and we are at about 75% completed and operational on the process safety side. We are building this system in parallel with the new biorefinery.”

The Road to 2030

The process safety training developed by the company for all UPMers is about to start. The systematic training aims to make safety a natural part of daily management and way of working. The target is that the learning and insights gained from at Leuna will be applied to each business to help deliver the optimal benefits.

“We know that this is not a one-or two-year exercise, but the target is that by 2030 process safety will be properly integrated in our safety management system. This is about introducing new ways of working and a different mindset as well. It's about people's competence, training, best practices in technological solutions and applying a systematic approach in everything we do. We are building the foundation for the new UPM,” Hyvönen concludes. ■

Paperboard's New Secret Ingredient? A Dash of Artificial Intelligence

By Tomi Vähä-Ruohola, Technical Development Manager, Metsä Board



“With AI we can take things one step further as it allows us to optimize based on data gathered from thousands of points in the production process.”
— Tomi Vähä-Ruohola.

Just like in virtually every other industrial segment, artificial intelligence (AI) techniques are helping paperboard producers like Metsä Board to crunch data and identify how to optimize production processes to achieve the best possible result.

Technical Development Manager Tomi Vähä-Ruohola discusses the company's AI journey so far and what it takes to get from idea to production-ready software.

Paperboard Production – A Highly Technical Process

We began our journey back in 2018 when we started to map the areas where we saw the greatest potential for AI to help improve production processes. Paperboard production is already a highly technical process, and our mills have very advanced automation systems. With AI we can take things one step further as it allows us to optimize based on data gathered from thousands of points in the production

process. Further improving the quality of our paperboards means less waste, more efficient raw material use and happy customers.

Speeding up Data Gathering

With sensors gathering data and AI crunching the numbers we can skip the time-consuming and laborious process of taking board samples, analyzing them in the lab and waiting for the results. The virtual sensor we developed in collaboration with the IT partner who was supporting us in this project predicts the quality value based on the lab analysis results we input at the start; the more data it processes the more accurate its predictions become.

Building a Bridge to the Future

As well as developing the AI analytics model itself, we had to work out how to transfer the huge volumes of data out of

the mill environment to our partner. Designing this kind of data architecture was something we had never done before, and we had to ensure that we developed a watertight, secure system. The Metsä Group ICT team were hugely valuable partners in this process. The end result is that we now have a 'data bridge' from our mills that we can use for all kinds of analytical applications in the future.

Plenty of Applications in the Pipeline

One concrete example of a new application idea can be found in the tail threading process, which involves using ropes and other equipment to rethread the sheet when the board machine is started up after a shutdown or following wet-end sheet breaks.

Tail threading ropes suffer wear over time, and they are located in areas that are not accessible while the board machine is running. Staff at our Äänekoski mill proposed a way to use machine vision and AI analytics to monitor the condition of the ropes and predict the optimal time to replace them, avoiding unnecessary shutdowns. This is the way we like to work – we use our internal knowledge of the paperboard production process to identify applications and our data bridge to get the data out from the mills, and then we trust third-party IT experts to build the algorithms for us.

Now that we have the technical infrastructure in-place, we are hard at work developing plenty more new ideas about how we can use AI to further improve the quality and quality consistency of our paperboards for the benefit of our customers. ■



New Two Sides North America Survey Shows Improvement in Consumer Attitudes about Paper Products and the Environment

As U.S. consumers become increasingly aware of the environmental impacts of the products they use every day, there remains a wide gap between perception and reality when it comes to the sustainability of paper products – but the gap has narrowed over the past two years. Overall, 44% of consumers believe paper products are bad for the environment, down from 48% in 2021. This according to a new survey commissioned by Two Sides North America and conducted by global research firm Toluna.

“It’s great to see improvement in consumer attitudes about paper and the environment, but we need to accelerate this trend if paper products are to remain competitive in an ever-changing marketplace,” says Two Sides North America President Kathi Rowzie. “More and more consumers are factoring environmental impacts into their purchasing decisions, but all too often those decisions are based on longstanding myths, pop culture headlines and corporate greenwashing rather than facts.

“Everyone whose livelihood depends on paper has a role in changing this. As the world moves toward a more sustainable, circular economy, the paper and paper-based packaging industry has a great, fact-based environmental story to tell: The life cycle of paper is already circular,” Rowzie explains.

What’s happening to the size of U.S. forest area?

Paper use is often blamed for forest loss, and 55% of those surveyed believe U.S. forests are shrinking, an improvement over 2021, when 60% of consumers said they believe U.S. forest area is decreasing.

The facts: U.S. forest area grew by 18 million acres between 1990 and 2020, according to the U.N. Food and Agriculture Organization’s most recent Global Forest Resources Assessment. Contrary to the popular belief that manufacturing and using paper destroys forests, the demand for sustainably sourced paper and paper-based packaging creates a powerful financial incentive for millions of private landowners not only to manage and harvest their land responsibly, but also to keep it forested rather than converting it to non-forest use or selling it for development, the leading cause of deforestation in the United States according to the U.S. Forest Service.

What percentage of paper is recycled?

Paper recycling in the United States is a hands down environmental success story, but most consumers don’t know it. According to the survey, only 12% of consumers know the U.S. recycling rate exceeds 60%, up from 11% in 2021. Four in 10 consumers believe the paper recycling rate is less than 30%.

The facts: More than two-thirds (68%) of all paper and paper-based packaging in the U.S. is recycled, and more than 91% of corrugated cardboard is recycled according to the American Forest and Paper Association. The U.S. Environmental Protection Agency (EPA) reports that paper is the most recycled material in the country, compared to plastics at 9%, glass at 25% and metals at 34%.

Is electronic communication more environmentally friendly than paper-based communication?

As companies continue to resort to unsubstantiated “go green, go paperless”

marketing claims to help them cut costs, 68% of consumers surveyed believe that electronic communication is more environmentally friendly than print on paper, up from 67% in 2021. Clearly, consumers want to do the right things when it comes to the environment, but are often misled by corporate greenwashing that fails to acknowledge the environmental impacts of digital communication.

The facts: The EPA reports that the pulp and paper industry accounts for only 0.6% of total U.S. greenhouse gas (GHG) emissions – which isn’t surprising since 64% of the energy needs at U.S. pulp and paper mills are met using renewable, carbon neutral biofuels, mostly biomass. In contrast, the rapidly expanding information communication technology (ICT) industry has a growing carbon footprint arising from GHGs released during all stages of the electronics life cycle. A recent meta-analysis (Freitag, Berners-Lee, et al, 2022) estimates the ICT industry is responsible for up to 3.9% of global GHG emissions and that those emissions will continue to increase without both regulatory and industrial intervention. Unlike the recycling success story of paper products, only 15% of the approximately 7 million metric tons of e-waste generated in the United States each year gets recycled, according to the 2020 Global E-waste Monitor. The rest is landfilled, burned or dumped, causing harm to both the environment and human health.

The 2023 Two Sides Trend Tracker Survey queried 1,000 respondents over age 18 across the United States. Learn more by visiting: twosidesna.org. ■

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Georgia-Pacific Contributes \$100,000 for Auburn University to Help Advance Papermaking and Research

Out with the old, in with the new! Georgia-Pacific has contributed \$100,000 to Auburn University to help fund a new state-of-the-art digester which will give engineering students the ability to test and improve a newly patented innovation in papermaking.

The current digester in the Alabama Center for Paper and Bioresource Engineering (AC-PABE) at AU is over 30 years old with many operational issues and no longer meets the needs of teaching and research. That's why the AC-PABE reached out to Georgia-Pacific, a long-time partner of AU and the pulp and paper program.

"We have developed a new additive for the kraft pulping process and have been granted a US patent for this technology," said Dr. Zhihua Jiang, Auburn Pulp and Paper Foundation associate professor and director, AC-PABE. "The new digester will allow us to systematically evaluate the effect of the new additive under various operating conditions and optimize and make the technology ready for a commercial scale trial. It will also be used in our other research projects to further improve the pulping efficiency."

Johnnie Pearson, director of pulp power and recovery center of excellence for Georgia-Pacific, graduated from AU with a bachelor's degree in chemical engineering and knows how important this donation is to the school, students and future generations of Georgia-Pacific.

"I still use all my experiences from



"I still use all my experiences from Auburn every day. It's the fundamental basis of how I came into the industry and evolved."

—Johnnie Pearson, Director of Pulp, Power, Recovery Center of Excellence for Georgia-Pacific.

Auburn every day. It's the fundamental basis of how I came into the industry and evolved," said Pearson. "I worked on the old digester when I was in school, and the new equipment will have a dramatic impact on the students and advance their cooking techniques. To this day, I still go back to my hands-on experiences."

Once the new digester is installed sometime in 2023, students will be able to operate the digester, produce pulp from wood chips and evaluate the effect of reaction conditions on yield and pulp properties. In addition, the digester will allow students, for the first time to effectively study and learn the kinetics of the pulping process by evaluating the changes in liquor compositions.

"Georgia-Pacific values our commitment to our community partners like Auburn University," said Hudson Pope, senior vice president of Georgia-Pacific operations and president of the Auburn Pulp and Paper Foundation. "AU is rooted in

outstanding instruction and meaningful research. The educational experience that donations like this can provide for students is invaluable and critical to their success after graduation, something Georgia-Pacific is proud to be a part of."

While the digester used in the AC-PABE is on a much smaller scale than what's used in a Georgia-Pacific mill, it's an integral part of the hands-on education for students at Auburn.

"I think anybody within this pulp and paper program will benefit," said Bradley Lowery, an AU chemical engineering student. "The new digester will be state of the art. The hands-on learning capability goes much further than what you can get from a textbook."

Bradley graduates in May 2023 and takes his education and experience to Georgia-Pacific's Alabama River Cellulose mill, where he'll be doing mechanical reliability.

"My father has worked for Georgia-Pacific for the last 15 or so years. So, I've learned a lot about how they do business," said Bradley. "Once I came to Auburn, I was fortunate enough to be on the pulp and paper scholarship, which I am very grateful for. Georgia-Pacific has put many meals on my family's table and has really brought things full circle for me. The learning I gained at Auburn and now going to work for Georgia-Pacific after graduation: it's really been such a blessing in my life. I can't thank Georgia-Pacific enough." ■

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