TISSUE WORLD MAGAZINE

The independent news provider for the global tissue business

TURBOCHARGED

MAJOR GEAR CHANGE FOR DECARBONISATION PROJECTS AS ENERGY CRISIS BITES

Plus ...

France: Country Report AfH market leader targets lowest carbon footprine

Marketissues: Future fibre sources – which has lasting potential?

Annual Review Growth Prospects – Pulp Supply - Latin American and Middle East Markets

World News Results – Largest Solar Project – Record Net Sales – Steel Yankee Breakthrough – Hydrogen Fuelled Burners - Investments

Exitlssues

Surge in interest in sustainability impacting global paper packaging markets

YOUR SINGLE SOURCE FOR TISSUE

Bath Tissue | Facial Tissue | Napkins | Kitchen Towel | Industrial Towel | Center Pull Towel | TAD Bath and Towel | NTT Bath and Towel | Carrier and Specialty Tissue | Airlaid | Nonwovens | and more

THE GLOBAL LEADER IN **TISSUE**

The Power of Leadership

Since 1976, Convermat has been the leading global supplier of parent rolls of tissue to more than 80 countries worldwide. Our unparalleled market intel and strong network of strategic alliances, resources, and insider knowledge can further grow and strengthen your business to achieve higher profits.

There When You Need Us

We consistently maintain capacity balance for many of the leading global tissue players. Our extensive network of global suppliers and customers enables us to deliver a continuous flow of tissue at the most competitive prices in any market condition and to any destination with speed, reliability, and integrity.

At Your Service

Our experienced team of seasoned professionals is equipped to handle all of your needs including inland and ocean transportation, import/export protocol, technical specifications, testing lab facilities, proprietary product development, foreign currency management, credit risk, and all relevant sales services.

More Than Tissue

In addition to our complete line of tissue, towel, napkins, and specialty paper we supply a comprehensive line of nonwoven substrates for medical, wipes, automotive, filtration, hygiene applications, and more.



www.convermat.com T: 516.487.7100 F: 516.487.7170



In this issue...

FrontIssues

The gear change driving the global industry's energy source future.

MarketIssues

Which sources of fibre for future tissue production have real lasting potential? Each fibre source brings its unique challenges, and costs are likely to remain volatile. Somnath Ray, Principal, AFRY Management Consulting, examines the major contenders, including wood pulp, bamboo, bagasse, RCP and straw.

News In Brief

A roundup of news from across the global tissue industry. To get the very latest news go to www.tissueworldmagazine.com

Country Report: France

France tissue business update – consequences of 2022 energy disruption: greater reliance on nuclear power means higher risks over electric power costs. In a time of extraordinary price disruption, 26 of France's 56 aging reactors are offline for maintenance and 18 are down with labour strikes. By Fisher International.

Country Report: France

In testing times with value growth subdued, consumer loyalty, essential products and price inflation will keep the category buoyant. Volume declines relatively higher set against increase in population and number of households. By Euromonitor International.

MP hygiène: Operations Report

On track for launch of one of the world's first high speed exclusively electric air system. Already an AfH market leader in the French tissue market, the AHEAD 2.2 tissue machine 2024 start-up will mean its CO2 footprint will be one of the lowest in the world, says President and Chief Executive Marc Miribel.

Environment: Technical Theme

LC Paper: Decarbonising – with an 8,500 panel solar plant, non-fossil methane, a biomass boiler fired on forest soil residues, and sourced carbon reduced pulp. Energy was already 100% renewable, mostly bought from small hydroelectric plants high in the mountains north of Barcelona, Spain. Now, a total net zero life cycle is being brought in-house. General Manager Pau Vila explains the schedule.

Environment: Technical Theme

Kimberly-Clark: the company's first ever green hydrogen scheme is expected to be started-up in the UK in 2025. Oriol Margó, Sustainability Transformation Leader, EMEA, spoke to TWM.

Annual Review: Special Feature

As 2022 draws to a close, TWM asks figures from across tissue's global supply chain for their retrospectives on the year ... and predictions for 2023. Hear from Al Faris Paper Mill's Medhat Saleh, Kemira's Vladimir Grigoriev, Amaco Group's Ali El Abdallah, and IMATMC's Daniele Checcacci.

ExitIssues

Covid-19 restrictions had a profound effect on product packaging, and radical changes in the supply chain are underway. Insight + Action founder Susan Cornish expands on her keynote speech at the TW Bangkok conference earlier this year to reveal the background to a surge in interest in sustainability impacting global paper packaging markets.

Ad Index

Operations Report

MP hygiène: TM investment will double parent reels manufacturing capacity for the AfH leader in the French market, and will mean its CO2 footprint will be one of the lowest in the world. President and Chief Executive Marc Miribel speaks to TWM.

Page 21

3

4

6

13

18

21

26

29

32

35

FI	FrontIssues	3
MI	MarketIssues	4
NB	News in Brief	6
CR	Country Report	13
OR	Operations Report	21
Π	Technical Theme	26
SF	Special Feature	31
El	ExitIssues	35
AI	Advert Index	40

40

Cover: Image representing the accelerating pace of decarbonisation projects in the tissue industry as a result of the 2022 energy crisis. Image by Hazel Gage, hazelsayshello, UK



koerber-tissue.com

Unlocking the full power of tissue

The Körber ecosystem is a revolutionary business model developed jointly with other Körber Business Areas and highly qualified external partners.

We now integrate the technologies making up a tissue production environment into a single and complete solution to enable tissue converters maximize OEE, streamline procurement, and build long-term strategic partnerships.



Shaping your success in tissue



EDITORIAL HEADQUARTERS

240 Blackfriars Road, London, SE1 8BF, UK Tel: +44 (0)20 7017 5000

Group Director Chris Edwards: chris.edwards@informa.com Senior Editor

Helen Morris: helen.morris@informa.com
Event Director & Publisher

Tom Hill: tom.hill@informa.com

Executive Director Chris Kilbee: chris.kilbee@informa.com

CEO Margaret Ma Connolly: margaret.connolly@informa.com

ADVERTISING ENQUIRIES

Europe & North America Silvio Arati T: +39 02 4851 7853 sarati@studioarati.it

South and Central America Selma Ugolini T: +55(11)99904 5350 selma@qova.com.br

China, Hong Kong & Macau Jennie Zhan T: +86 20 86660158 *info-china@informa.com*

TISSUE WORLD MAGAZINE

is published bi-monthly. The subscription price is US\$400 per year for 6 issues. Subscription is free for qualified subscribers in the tissue industry.

Please send address corrections to: Informa Markets – UK 240 Blackfriars Road, London, SE1 8BF, UK Tel: +44 (0)20 7017 5000 info@tissueworld.com

Subscription online at

www.tissueworldmagazine.com



In Tissue World all measures are metric and all dollars (\$) are US dollars, unless otherwise stated. Copyright 2022 by Informa Markets – UK. All rights reserved. All materials printed in Tissue World Magazine is owned by Informa Markets – UK and protected under the copyright act. No material may be reproduced in part or in whole without the prior written consent of Informa Markets – UK.



THE GEAR CHANGE DRIVING THE GLOBAL INDUSTRY'S ENERGY Source Future

Helen Morris Senior Editor, Tissue World Magazine

he International Energy Agency says the energy crisis has "turbocharged" renewable projects around the world, with countries adding as much renewable power in the next five years as they did in the last 20.

That is not news to the tissue industry, and TWM highlights various examples of that turbocharging long planned and delivering results. A recent Tissue World webinar revealed contributors engaged in a major shift towards net zero and often in-house energy targets as core principles. TWM reports on just some of those major initiatives.

By 2025 Kimberly-Clark (K-C) will be operating its world first £40m green hydrogen plant at Barrow-in-Furness in the north west of England. It will be a test-case for the potential roll-out of green hydrogen across more of its global operations. K-C wants to make all production at its UK and Ireland plants 100% renewable energy sourced by 2030.

Oriol Margó, Sustainability Transformation Leader, says primarily wind and solar power will run a 35 megawatt electrolyser which will split water into hydrogen and oxygen, producing 3,400 tonnes of hydrogen every year: "The hydrogen is burned to produce the heat required to dry our tissue products, with steam as the only by-product."

K-C predicts this process will reduce 25,000 tonnes of greenhouse gas emissions annually – equivalent to taking 580 trucks off UK roads every year.

Already scheduled is a 2021 deal to build a wind farm in South Lanarkshire, Scotland. It will be K-C's first such agreement outside of North America, and is expected to cover 80% of total electricity needs for UK facilities in Barrow, Flint in Wales, and Northfleet on the river Thames.

Over in Catalonia, Spain, LC Paper's decarbonisation programme has seen a new 8,500 panel solar plant, partial substitution of fossil-based gas with biogas, a biomass boiler fired on forest soil residues, and sourced carbon reduced pulp. It also includes targeting 100% plastic-free packaging, accreditation of the energy, raw material and water sourcing, excellence in waste processing, plastic elimination, and working towards a total net zero in-house life cycle.

Over the border in Annonay in the Auvergne-Rhône-Alpes region of south eastern France, MP hygiène's mill will be pioneering a high-speed tissue machine with an exclusively electric air system, with President and Chief Executive Marc Miribel saying the project will mean the plant's CO, footprint will be "one of the lowest in the world."

In *Marketissues*, Somnath Ray, Principal, AFRY Management Consulting, examines the major contenders for future fibre sources as producers seek to control squeezed margins and volatile cost fluctuations. Wood pulp accounted for 62% of fibre consumption for tissue paper production globally in 2019/2020. Recovered paper was 33%, non-wood sources 5%.

Operation optimisation and a move to alternative raw materials are two approaches. He assesses fibre sources including wood pulp, bamboo, bagasse, RCP and straw, as "each fibre source brings its unique challenges."

In Annual Review, chemical supplier Kemira's Vladimir Grigoriev, Director, Applications and Marketing, Pulp and Paper, Americas, explains the new direction towards increasing the share of biobased products from 12% to 40% by 2030. A new biosciences partnership is developing polyalphaglucan chemistry derived from glycose. He assesses the likely impact of those changes for Kemira in North and South America, Europe and Asia.

Some good, if rare, news on inflation

We had to go a long way to find any kind of positive reference regarding inflationary trends in these pages. However, we have found one. It comes from Dino Bianco, Chief Executive of Canadian company KP Tissue as he reports "significantly improved profitability" in Q3 (revenue up 9.1% y-o-y), a story in *World News*: "Inflationary upward pressure appears to be easing," he says. Long may it continue, notwithstanding sales volatility from higher prices and consumers trading down. For the most part, though, mills elsewhere are having a hard time of it, with descriptions ranging from "a brutal winter," a "nightmare," policy decisions made in "an inflation tunnel," 2022 energy costs of €2.2m up to €12m next year.

Euromonitor puts median global inflation at 7% to 9.5% this year, projected 5.5% to 8.5% in 2023. That is an easing.

Marketissues WHICH SOURCES OF FIBRE FOR FUTURE TISSUE PRODUCTION HAVE REAL LASTING POTENTIAL?

Each fibre source brings its unique challenges, and costs are likely to remain volatile. Here, Somnath Ray, Principal, AFRY Management Consulting, examines the major contenders, including wood pulp, bamboo, bagasse, RCP and straw.



Somnath Ray Principal, AFRY Management Consulting

he tissue segment is going through the proverbial seesaw of highs between sales and input costs.

While 2020 was characterised by strong global sales (At-Home) combined with low and mostly stable input costs, 2021 was the opposite in the form of declining or modest sales growth combined with soaring input costs.

The soaring input costs of 2021 continue, mostly due to fibre and energy costs, and are leading to a reduction in margins and more challenging times for tissue producers.

This extreme situation of rising commodity and energy costs, which has hardly been observed historically, has had a negative impact for all raw material and energy intense industries, including tissue. It begs us to ask – is there a more sustainable approach towards these input costs? Given that the energy cost situation may remain volatile, are there any other possibilities?

In the wake of squeezed margins, tissue producers are seeing an increasing need to control cost fluctuation, and there are several routes to achieve this, of which operation optimisation and a move to alternative raw materials are two. Alternative raw materials are further elaborated and described below.

Contrary to general opinion, as of 2019/2020, wood pulp accounted for 62% of the fibre consumption for tissue paper production globally. This was dominated by BHKP, followed by BSKP and mechanical pulp.

The majority of the rest, 33%, was from recovered paper, while the last 5% was from non-wood pulp sources. The share of these fibre sources varies from one region to another where fibre availability and consumer requirements are key factors for what the outcome will be. Each fibre source brings its unique challenges. While wood fibre sources are prone to higher prices and shortages due to competing uses, recovered paper collection rate is slowing down globally due to already high collection rates in mature markets.

Non-wood fibre sources in the form of bamboo, bagasse, and straw, offer interesting potential compared to wood fibre and recovered paper. This is in particular due to its increasingly assumed



Fig 1: Fibre consumption by source for Tissue production (Global)

"green appearance", but also as it opens up more options to source fibre and potentially mitigating cost fluctuations observed for the more traditional fibre sources.

However, non-wood pulp does have challenges as well, such as:

- Pollution issues and tightening environmental control;
- High capital requirements of pulp mills;
- Seasonal supply of raw materials connected with logistic and storage problems;
- Quality issues, primarily due to the high silica content;
- Lastly, and perhaps the major limitation factor, its limited supply and competition from other paper segments.

However, considering the evolving consumer requirements of using less wood fibre and also the price volatility for wood and recovered paper fibre, it is becoming increasingly more relevant for tissue producers to use new and additional fibre sources as well. This is not only to respond to consumers, but also to obtain more options and tools to optimise sourcing strategies and to mitigate fibre cost fluctuations.

In most regions, fibre cost of RCP has mostly been less than for virgin fibre. However, the competition from other paper segment and shrinking availability of traditional material (bright and

IT BEGS US TO ASK — IS THERE A MORE SUSTAINABLE APPROACH TOWARDS THESE INPUT COSTS? GIVEN THAT THE ENERGY COST SITUATION MAY REMAIN VOLATILE, ARE THERE ANY OTHER POSSIBILITIES? IN THE WAKE OF SQUEEZED MARGINS, TISSUE PRODUCERS ARE SEEING AN INCREASING NEED TO CONTROL COST FLUCTUATION, AND THERE ARE SEVERAL ROUTES TO ACHIEVE THIS, sorted) limits or complicates significant increase of RCP usage. Also, the consumer requirements in certain parts of the world pose a negative impact for usage of RCP as raw material for tissue paper. These perceptions are generally related to the cleanliness and quality of the fibre, mostly seen in cases in Asia. Alternative non-wood fibres are free from these perceptions and are increasingly looked at as a source for fibre for the production of tissue paper. There are several producers that have made remarkable advances, particularly in China and South East Asia.

Among the non-wood fibre sources, bamboo, and bagasse are the key contenders for tissue paper production. Bamboo has comparable properties to softwood and hardwood fibre - high bulk, tearing strength, comparable fibre length and cellulose content. Additionally, it has a wide raw material source encompassing nearly 1,250 species and almost unrestricted harvesting time given it grows in tropics and sub-tropics. It typically grows as secondary vegetation in the forests, but can also be the dominant. Tissue paper made of bamboo is usually strong, and unbleached bamboo can also be used for tissue paper production. Global capacity is around 2.7m tons and interest from the paper sector, not only tissue, is on the rise.

Given the wood resource constraints in China and India, the abundance of bamboo provides opportunities for local industries. Mobilising more bamboo away from other substitute use and increasing capacity to supply to paper production would be very much needed. Several producers have taken initiatives in utilising this fibre source, with notable advances made in China.

Similarly, bagasse which is a by-product of sugarcane processing, is another fibre source on the rise. It presents several promising properties apart from being easily available in the tropics. Most of it is utilised as an energy source, however, diverting it for paper production offers a price competitive fibre source. The world's largest sugarcane growing regions are Brazil, other parts of South/Central America, India, China, Thailand and South Africa. Several advances have been made by tissue producers in these countries with clear success stories particularly in China and Thailand. With global capacity of 3.6tpy, this can become an increasingly used source for tissue paper production.

For example in China, at present wood pulp accounts for more than 80% of the total tissue furnish mix where supply is primarily fulfilled by imports. The usage of bamboo accounts for 12% followed by bagasse at 2% and straw at 1%. RCP paper holds a minor share at around 2%, not only due to higher demand in packaging



Fig 2: Fibre consumption by source for tissue production (China)

AMONG THE NON-WOOD FIBRE SOURCES, BAMBOO, AND BAGASSE ARE THE KEY CONTENDERS FOR TISSUE PAPER PRODUCTION. BAMBOO HAS COMPARABLE PROPERTIES TO SOFTWOOD AND HARDWOOD FIBRE — HIGH BULK, TEARING STRENGTH, COMPARABLE FIBRE LENGTH AND CELLULOSE CONTENT. ADDITIONALLY, IT HAS A WIDE RAW MATERIAL SOURCE ENCOMPASSING NEARLY 1,250 SPECIES AND ALMOST UNRESTRICTED HARVESTING TIME GIVEN IT GROWS IN TROPICS AND SUB-TROPICS.

grades but also due to bad reputation and restrictions to be utilised for some tissue paper articles. This fibre source break-up is much different from others, helping local producers to a large extend. Some producers are also notably leaders in this initiative with established strong brands already utilising alternative fibre sourcing as part of branding.

As shared earlier, all these fibre sources offer several opportunities for future considerations. Like any other commodity, all the stated fibre sources have several alternative usages, which makes their usage for tissue paper production more complicated. Pollution issues, tightening environmental control, high capital requirements of pulp mills, seasonal supply of raw materials connected with logistic and storage problems and quality issues are the key ones. This carves out more work for the tissue paper producers.

Being a more attractive buyer can be a good approach, whilst as in case of some leading producers, having their own plantation helps to secure fibre supply. The leading brands also have to continue their work towards changing consumer perceptions about certain fibre sources.

There are several opportunities in alternative fibre usage for tissue paper production, and these will gain more traction with further adoption of new technology and changing consumer requirement.

THE USAGE OF BAMBOO ACCOUNTS FOR 12% FOLLOWED BY BAGASSE AT 2% AND STRAW AT 1%. RCP PAPER HOLDS A MINOR SHARE AT AROUND 2%, NOT ONLY DUE TO HIGHER DEMAND IN PACKAGING GRADES BUT ALSO DUE TO BAD REPUTATION AND RESTRICTIONS TO BE UTILISED FOR SOME TISSUE PAPER ARTICLES.

News in Brief

GLOBAL NEWS UPDATE

A roundup of news from across the global tissue industry. To get the very latest news go to www.tissueworldmagazine.com



Above: "We plan to maintain targeted investments in our consumer brands," Dino Bianco, Chief Executive of KP Tissue

NORTH AMERICA

KPLP reports "solid top-line growth" in Q3 results

Canada's Kruger Product (KPLP) has reported "significantly improved profitability" in its Q3 results as the impact of announced price increases across all segments and productivity gains take effect.

Revenue increased 9.1% to \$427.0m in Q3 year-on-year, while adjusted EBITDA was \$30.7m in Q3 2022 compared to \$40.3m in the same time a year earlier, and a decrease of \$9.6m.

Net loss was \$38.8m compared to \$9.3m in Q3 2021, a decrease of \$29.5m.

Dino Bianco, Chief Executive of KP Tissue (KPT), a holding company which currently owns 13.9% of KPLP, said: "We continued to deliver solid top-line growth in the third quarter of 2022 with revenue increasing 9.1% year-over-year, while profitability significantly improved from the previous quarter based on the disciplined execution of a multi-faceted strategy.

"This included price increases across all segments as well as productivity gains, along with prudent cash management through reductions in working capital and discretionary spending."

He added the business had seen a strong performance in its AfH segment, with sales growth of 37.3% year-on-year and Adjusted EBITDA1 of \$5.4m, which he said signalled a market recovery in Canada and the US post-Covid.

For the Consumer segment, revenue growth was 4.1%, as the business is seeing slower consumer purchases as adjustments to higher price points are made.

"We plan to maintain targeted investments in our consumer brands, including recently launched Bonterra, SpongeTowels UltraPRO, UltraLuxe and White Cloud, while watching post-pricing price gaps," he added.

For the quarter, KPT reported a net loss of \$6.3m, including \$5.5m representing KPT's share of KPLP's net loss.

Bianco added: "Although inflationary upward pressure appears to be easing, higher price points for products have created sales volatility with some consumers trading down during these uncertain times.

"The recovery of our Memphis operations is also taking a little longer than anticipated, but we believe this situation will be largely resolved by early 2023.

"Despite the volatile business environment, we are moving in the right direction and fully expect to generate profitable growth in the fourth quarter and beyond."

Clearwater reports "excellent third quarter" as net sales jump 20%

Clearwater Paper Corporation has said its Q3 results "exceeded expectations", with price realisation helping offset inflation.

Net sales increased by 20% to \$539m compared to net sales of \$450m for Q3 2021.

Net income for the Q3 of 2022 was \$21m compared to \$2m y-o-y, while adjusted EBITDA was \$77m compared \$50m in Q3 2021.

Arsen Kitch, President and Chief Executive, said: "We had an excellent third quarter, which exceeded our expectations with strong volumes, pricing and operational performance.

"While paperboard demand and pricing

remained strong, our tissue performance continued to improve with higher pricing helping to offset the impact of inflation."

For the first nine months of 2022, Clearwater Paper reported net sales of \$1.6bn, a 21% increase compared to net sales of \$1.3bn for the first nine months of 2021.

Net income for that period was \$52m compared to a net loss for the first nine months of 2021 of \$38m.

Impacting the first nine months of 2021, Clearwater Paper incurred impairment and other closure costs associated with the closure of the company's Neenah, Wisconsin-based facility of \$47.1m and as well as planned major maintenance at its paperboard facilities.

Net sales in the Pulp and Paperboard Products segment were \$301m for Q3 2022, up 27% compared to Q3 2021 net sales of \$237m.

In the Consumer Products Segment, net sales were \$241m for Q3 2022, up 13% compared to Q3 2021 net sales of \$214m.

Segment operating income for the third quarter of 2022 was \$5m compared to operating income of \$4m in Q3 2021.

Retail tissue volumes sold in the quarter were 76,938 US tons, compared to 76,237 tons in Q3 2021.

Retail tissue volumes sold were 228,968 tons in the first nine months of 2022, an increase of 10% compared to 208,496 tons in the first nine months of 2021.

Retail tissue selling prices increased 13% to \$3,082 per ton in the third quarter of 2022, compared to \$2,732 per ton in the third quarter of 2021.

Retail tissue selling prices increased 8% to 2,980 per ton in the first nine months of 2022, compared to \$2,748 per ton in the first nine months of 2021.

Kitch added: "During previous periods of economic uncertainty demand for our products was relatively resilient.

"In today's economic environment, our continued focus is on operational performance while offsetting the impact of inflation.

"We are continuing to improve our financial flexibility to take advantage of opportunities to create shareholder value."

B

NB



Solar energy: P&G's latest and largest solar project

P&G announces its largest solar energy project

Procter & Gamble (P&G) has said it is working with renewable energy company ENGIE North America on its latest and largest solar energy Power Purchase Agreement.

P&G's said the 200 MW partnership helps progress its aim to achieve net zero greenhouse gas emissions across its operations and supply chain by 2040.

The business added that the new Sun Valley project in Hill County, Texas, is "expected to remove harmful carbon dioxide emissions from the electricity grid each year".

Through the agreement, ENGIE will supply P&G with more than 530,000 MWh of renewable power annually.

Sun Valley project solar panels will power the equivalent to the annual electricity needs of more than 50,000 US homes and will support the local agricultural ecosystem.

P&G said that the 200 MW project is the largest global agreement it has developed with ENGIE.

Clearwater Paper announces revised sustainability goals in 2022 ESG report

Clearwater Paper Corporation has announced plans to achieve a 30% reduction of Scope 1 and 2 greenhouse gas emissions by 2030 from 2020 baseline in its 2022 environmental, social and governance (ESG) report.

Along with a continued commitment to create sustainable paper products,

CLEARWATER PAPER CORPORATION HAS ANNOUNCED PLANS TO ACHIEVE A 30% REDUCTION OF SCOPE 1 AND 2 GREENHOUSE GAS EMISSIONS BY 2030 FROM 2020 BASELINE IN ITS 2022 ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT. ALONG WITH A CONTINUED COMMITMENT TO CREATE SUSTAINABLE PAPER PRODUCTS, THE REPORT ALSO HIGHLIGHTS AIMS TO REDUCE EMISSIONS, INCREASE RESOURCE CONSERVATION, AND ACHIEVE FEMALE REPRESENTATION OF 30% OR GREATER OF THE SALARIED WORKFORCE THROUGH 2030.

the report also highlights aims to reduce emissions, increase resource conservation, and achieve female representation of 30% or greater of the salaried workforce through 2030.

It also highlights the company's commitment to designing and producing circular paper products.

Recent examples have included the launch of ReMagine and NuVo, two paperboard brand products offered with as much as 30% post-consumer recycled material.

Clearwater Paper Chief Executive Arsen S. Kitch said: "These goals are the most ambitious we have committed to as a company and represent our desire to make measurable progress in several areas while continuing to act as responsible citizens and contributors in the communities where we operate.

"This path forward supports our sustainability journey over the next decade." It also aims to record zero serious injuries and fatalities (SIFs) in 2021

Dunn Paper announces closure of Port Huron mill

America's Dunn Paper has said it will cease production at its Port Huron plant amid ongoing cash flow and economic challenges.

The site has been supplying specialty paper to the food and medical industries since 1924.

Wade Kemnitz, President and Chief Executive, Dunn Paper, said: "This difficult decision is the result of ongoing challenges to generate positive cash flow in the face of adverse economic factors."

Dunn Paper will continue to produce Machine Glazed products at its Menominee, Michigan, and Wiggins, Mississippi, sites, including waxed products and its BiOrigin line.



Above: WEPA Group's Martin Krengel announced as keynote speaker at Tissue World Düsseldorf

GERMANY

WEPA Group, Essity and Metsä Tissue to headline Tissue World Düsseldorf conference

Tissue World has announced that WEPA Group's Chief Executive and Chairman Martin Krengel will be the keynote speaker at March's Düsseldorf event.

With a conference theme of The Roadmap, the Riskmap: Plotting a course for tissue in uncertain times, the Tissue World Düsseldorf exhibition and conference will be held for the very first time in the German city between 28 and 30 March.

The conference will discuss key topics including:

- What are the sustainable business drivers for effective strategy and financial stability?
- How can innovation mitigate against risk?
- What are the industry's sustainable options to be prepared for an uncertain future?

Speakers also announced include: Essity's Donato Giorgio, President, Global Supply Chain, Metsä Tissue's Sr. VP Central Europe Tobias Lüning, AFRY Management Consulting's Senior Consultant Bioindustry Hampus Mörner, the UK's Star Tissue Managing Director Khalid Saifullah, Euromonitor International's Consultant – Client & Insight Ana Tique, and Hawkins-Wright's Research Analyst Pierre Bach.

With the current inflation crisis, geopolitical situation, environmental urgencies, supply chain issues and changes in consumer behaviour, how can our industry best steer a course for success?

Tackling all these questions and providing valuable insight will be leading tissue producers, industry experts and business leaders.

This will be followed by carefully curated technical sessions, focusing on fresh innovation from tissue making through converting.

To view the latest conference details, go to here

https://www.tissueworld.com/dusseldorf

GLOBAL

Essity and Reckitt launch co-branded professional hygiene solutions

Essity and Reckitt have launched a range of co-branded disinfection products targeting professional hygiene customers across four European countries.

The products are being launched under Essity's professional hygiene brand Tork, and the Dettol and Sagrotan brands of Reckitt.

Available as of January 2023 across the UK, Ireland, Germany and Austria, the products include antibacterial multipurpose cleaner spray and antimicrobial foam soap and a hand sanitiser gel for use in Tork dispensers.

They added that in the aftermath of Covid-19, hygiene expectations from the public have shifted dramatically, and this collaboration provides customers with an expanded assortment of products that are critical in breaking infection.

The antibacterial multipurpose cleaner spray comes in a fully recyclable* bottle and trigger and is manufactured with zero waste to landfill, and the soap and sanitiser products have recyclable* and collapsible bottles.

* In countries that have recycling schemes for these products.

Essity net sales "reached record levels" in 3022 results; announces further price hikes will occur

Essity has reported a net sales increase up 28.2% y-o-y to SEK112,339m in its third quarter results as it announces it will make further price increases to offset inflation.

Sales growth for the 1 January – 30 September period, including organic sales growth and acquisitions, amounted to 18.4%. EBITA amounted to SEK 7,097m, down from SEK11,047m in the same period a year ago.

Higher costs for raw materials, energy and distribution had a negative impact of 12.5% on the margin.

However, the margin was positively impacted by higher selling prices, higher volumes and a better mix.

Return on capital employed amounted to 7.7% (13.8). Adjusted return on capital employed amounted to 9.2% (13.4).

However, profit for the period was SEK3,818m, down year-on-year from SEK7,592m.

Magnus Groth, Essity President and Chief Executive, said: "Essity's net sales reached new record levels in the third quarter.

"Significant price increases were implemented, and further increases will be carried out.

"We raised prices for our leading hygiene and health solutions by an average of 14.5% compared to the same period a year ago, at the same time as we reported higher volumes in all business areas.

"Our price increases are offsetting the high-cost inflation with a delay of approximately two quarters.

"We are continuing to invest in innovation and expansion of our offerings to promote a higher quality of life for

ESSITY HAS REPORTED A NET SALES INCREASE UP 28.2% Y-O-Y TO SEK112,339M IN ITS THIRD QUARTER RESULTS AS IT ANNOUNCES IT WILL MAKE FURTHER PRICE INCREASES TO OFFSET INFLATION. SALES GROWTH FOR THE 1 JANUARY — 30 SEPTEMBER PERIOD, INCLUDING ORGANIC SALES GROWTH AND ACQUISITIONS, AMOUNTED TO 18.4%.

TISSUE TREB(·R

Tissue • Toweling • Napkins • Wet/Dry Crepe • Wiper Grades

Your most reliable source for parent rolls of tissue since 1972.



NEED TISSUE? Come to the leader.

Trebor Provides:

- The Largest Source of Supply
- Competitive Pricing
- Expert Market Knowledge
- International Expertise
- Responsive Customer Service

When you think tissue... think Trebor.



REBC R

B

customers and consumers with more climate-smart offerings, strong brands and increased e-commerce sales."

He added that cost inflation worsened further in the third quarter, with costs for raw materials, energy and distribution having a negative impact of 12.7% on the adjusted EBITA margin.

"We are addressing this through comprehensive price increases and energy price surcharges that will have an additional effect in the fourth quarter and in 2023. Despite significant price increases, we noted higher volumes in all three business areas. We are continuing to work at a high pace with efficiency improvements, energy saving measures and raw material rationalisations."

K-C reports organic sales growth across all segments in 3Q results

Kimberly-Clark (K-C) has said it continues to target full-year 2022 organic sales growth of 5 – 7%, as its Consumer Tissue business reported sales up 2% to \$1.6bn in its third quarter results.

Net sales for the period increased 1% to \$5.1bn compared to the year-ago period.

Organic sales increased 5% as net selling prices rose 9%, while product mix increased sales 1% while volumes declined 5%.

In North America, organic sales decreased 2% in consumer products and increased 5% in K-C Professional. Outside North America, organic sales rose 11% in both developing and emerging and developed markets. Third quarter operating profit was \$655m in 2022 and \$657m in 2021.

Results were impacted by \$360m of higher input costs, and K-C said that "lower volumes, higher marketing, research and general expense as well as unfavourable foreign currency effects reduced operating profit in the quarter".

Mike Hsu, Chairman and Chief Executive, said: "Our third quarter results reflect strong execution by our teams around the world in the face of a challenging macro environment.

"We delivered organic sales growth across all our segments and continued to provide our consumers with value-inspired innovation. We continue to execute our plan to restore margins over time and are seeing progress with sequential margin improvement this quarter. As we navigate persistent input cost inflation, we're focused on driving our growth strategy, serving consumers, customers and communities while living our purpose of Better Care for a Better World."

Consumer Tissue sales of \$1.6bn increased 2%.

TOSCOTEC HAS RESPONDED TO CUSTOMER DEMAND WITH THE LAUNCH OF ITS PATENTED TT HYDROGEN BURNER, ITS LATEST GENERATION OF 100% HYDROGEN FUELLED BURNERS DESIGNED AND TESTED FOR YANKEE HOODS. THE SUPPLIER SAID IT DEVELOPED THE SYSTEM TO DRIVE THE CONVERSION OF PAPER MANUFACTURING TO CLEAN ENERGY.

Net selling prices for the segment increased sales 9% while volumes declined approximately 3%, while third quarter operating profit of \$218m decreased 2%.

Changes in foreign currency exchange rates reduced sales 4%.

Sales in North America increased 5%, and while net selling prices rose 7%, volumes declined 2%.

Higher net selling prices were achieved across all sub-segments while volume decline was primarily in bathroom tissue.

Toscotec launches "breakthrough" in Steel Yankee Dryer technology

Toscotec has introduced its TT Induction SYD, which it said is a "carbon-reduction breakthrough that redefines Yankee dryer technology."

TT Induction SYD uses electrical induction instead of steam energy to dry the paper web, which the supplier said thereby directly cuts greenhouse gas emissions to zero. Luca Ghelli, Toscotec R&D Director, said: "TT Induction SYD is now set to be the new game changer in tissue for its capability to use clean energy and slash direct carbon emissions associated with the drying process."

He said that the internal steam distribution and steam/condensate removal systems are entirely replaced by an induction system composed of static coils installed inside the shell and electrical controls and instrumentation located outside for easy maintenance and monitoring.

"As a result of precise coil geometry, the induction system delivers a very fast and accurate heating effect exactly on the areas of the shell where it is required, while preventing residual circulating currents in other areas," he added.

TT Induction SYD is suitable for installation on dry crepe as well as TAD tissue lines.

Ghelli said: "Sustainability is the guiding idea of TT Induction SYD's design.

"As a proven industrial technology, an induction system offers multiple advantages when applied to the most energy-intensive section of the tissue machine. The efficiency of this cutting-edge technology will dramatically reduce the carbon footprint of papermaking. Based on our expertise in steam-heated TT SYD and induction systems, we succeeded in developing a more efficient and sustainable Steel Yankee Dryer."

Toscotec introduces 100% hydrogen fuelled burners

Toscotec has responded to customer demand with the launch of its patented TT Hydrogen Burner, its latest generation of 100% hydrogen fuelled burners designed and tested for Yankee hoods.

The supplier said it developed the system to drive the conversion of paper manufacturing to clean energy.

It said: "TT Hydrogen Burner is an in-line burner featuring precisely controlled combustion and two safe operation modes.

"In carbon-free mode it runs on 100% hydrogen; in carbon-reduction mode it is fuelled by a mixture of natural gas and hydrogen, where the percentage of hydrogen is accepted across a wide range."

SAUDI ARABIA

Saudi Paper Group boosts capacity with TM investment

Saudi Paper Group (SPG) has invested in a Toscotec-supplied AHEAD 2.2L machine to be installed at its Dammam facility in Saudi Arabia.

PM5 will be supplied on a full-on turnkey basis, and it follows Toscotec's supply of a complete AHEAD 2.2S line that is currently undergoing erection at the same tissue mill.

The new machine has a sheet trim width of 5.6m, a maximum design speed of 2,200m/min, and an annual production capacity of over 60,000tpy.

Start-up is scheduled for 2024.

The tissue machine is equipped with TT NextPress upgraded design shoe press, a third- generation design TT SYD Steel Yankee Dryer, and high efficiency TT Hood.

The scope of supply also includes two OPTIMA 2600L slitter rewinders devised to preserve bulk and softness while ensuring optimal winding performance.



Above: Metsä Tissue secures modernisation permit for Katrinefors plant; final investment decision expected H1 2023

SWEDEN

Metsä Tissue secures modernisation permit for Katrinefors plant

Metsä Tissue has secured an environmental permit from Sweden's Land and Environment Court to expand and modernise its Katrinefors mill in Mariestad.

It will now analyse the details in preparation of its final investment decision, which it said it estimates it will confirm during the first half of 2023.

The move is part of Metsä Tissue's Future Mill Programme which it said aims to "drive world class environmental performance in tissue production."

The obtained permit would allow for an increased annual production capacity from today's 75,000 tonnes to 145,000 tonnes of fresh fibre-based tissue papers, and provide 50-100 additional jobs to the mill.

Esa Paavolainen, Project Director at Katrinefors mill, said: "We are pleased to have received this positive decision from the Land and Environmental Court.

"With the planned investment, Metsä Tissue would be a forerunning company in investing into the tissue industry in Sweden and Scandinavia, helping to safeguard the security of supply in essential hygiene tissue products.

"Now the next step is to prepare the actual investment decision."

BRAZIL

Suzano purchases K–C's tissue assets in Brazil; K–C confirms continued importance of Brazilian market

Brazilian paper and pulp producer Suzano has announced the \$175m acquisition of Kimberly-Clark's (K-C) tissue business in Brazil, increasing its presence in the county's tissue market from 11% to around 22-25%. Announced on 24 October, the move means that, at the time of writing, Suzano will become the second largest tissue manufacturer in the country.

First place remains with Chileanheadquartered CMPC's Softys Brasil, which officially acquired Brazil's Carta Fabril earlier this year.

Suzano said K-C's tissue business combined with its own consumer goods operations "results in complementarity product categories and geography" for the company's toilet paper, paper towels and napkin markets. The purchase includes K-C's multinational tissue plant located in Mogi das Cruzes, São Paulo state, which has an installed capacity of 130,000tpy and produces the Neve brand.

It also includes the company's product lines in toilet paper, moist and dry wipes, towels, and facial tissue serving consumers At-Home and AfH. Product lines related to baby and childcare, incontinence, and feminine absorbents were not included in the transaction. Luís Bueno, Suzano Executive director of Consumer Goods and Corporate Relations, said: "The operation is aligned with one of Suzano's strategic avenues, which consists of advancing in the links of our chain.

"The complementarity of categories and geography will allow us to further improve the service provided to different customers and offer a more complete portfolio to consumers throughout Brazil."

Suzano has a presence in Brazil's North and Northeast regions, while K-C operates mainly in the Southeast region. Suzano entered the consumer goods market in 2017 when it built two tissue factories, one in the municipality of Mucuri, Bahia state, and Imperatriz, Maranhão state. In the same year it announced the purchase of Facepa, a company that operated units in the municipality of Belém, Pará state, and Maracanaú, Ceará state.

Suzano declined to comment further on any future plans to expand into the tissue and towel sectors. When contacted by TWM about the Suzano acquisition, a K-C spokesman confirmed the transaction includes the Neve brand and other related tissue assets as well as a license to manufacture and market the Kleenex, Scott and WypAll brands in Brazil for a period of time.

He said: "We're proud to have built a strong tissue category in Brazil and Suzano will leverage the full range of its expertise to take these tissue brands to the next level of growth.

"As part of K-C's long-term growth

B

agenda, our Brazil business remains one of the company's key markets, and will focus on accelerating the momentum of our fast-growing personal care brands Huggies, Intimus and Plenitud.

"Brazil continues to be an important market for us, especially considering its demographics, 60 million homes, three million births a year; 55 million women between 12 and 45 years old; and a third of the population over 45 years old.

"In Latin America overall, the company has invested approximately \$300m in stateof-the-art manufacturing technology over the past three years, preparing them for business expansion and growth.

"K-C's Consumer Tissue and Professional businesses continue to play a critical role in the company's global and Latin American portfolio, with brands that are leaders in many of the markets where Kimberly-Clark has operations, and the company will continue to invest in innovation and commercial capabilities to accelerate the growth of these businesses."

The purchase by Suzano of K-C's Brazilian assets is subject to approval by the country's antitrust agency Administrative Council for Economic Defense, CADE.

Suzano reports net revenues up 32% in 3Q results

In October, Suzano also announced its third quarter results, recording a record adjusted EBITDA of R\$8.6bn – driven by higher pulp prices and increasing sales volumes.

Net revenues increased 32% to R\$14.2bn on 3Q21, and a net income of R\$5.4bn compared with a net loss of R\$959m in 3Q21.

Total pulp sales were 2.8 million tonnes, up 5% year-on-year, while paper sales totalled 331,000 tonnes, a 2% decline on 3Q21.

Walter Schalka, Chief Executive of Suzano, said: "I am very grateful to our workforce's efforts which have helped deliver another successful and recordbreaking quarter, supported of course by favourable market conditions.

"The cash generated throughout the period will allow us to continue executing on our ambitious long-term capital allocation strategy."

Bracell SP Celulose increases capacity with TMs investment

Bracell SP Celulose has boosted its high-quality tissue production capacity after investing in four Andritz-supplied PrimeLineTM W 2000 tissue machines to be installed at its mill in Lençóis Paulista, São Paulo.

Start-up is scheduled for 2024 and the lines will produce household paper such as toilet paper, napkins, handkerchiefs, towels and facial tissue. The machines have a design speed of 2,100m/min and a working width of 5.68m.

Andritz's scope of supply includes the stock preparation systems that will process slush pulp from Bracell's own pulp mill, rewinders and roll handling, roll covers, machine clothing, shoe press belts, and additionally more than 100 units of high-efficiency process pumps. All four plants will be equipped with the Metris X integrated distributed control system (DCS), which the supplier said "ensures optimal plant operation".

Andritz added that the machines are equipped with fully cantilevered shoe presses for "easy dewatering and easy maintenance", and 18 ft. Steel Yankees with steam-heated hoods for energy-efficient drying.

MEXICO

Papel San Francisco boosts standard tissue capacity with TM investment

Papel San Francisco has signed for its sixth Valmet-supplied tissue line, an Advantage DCT 100TS TM that will be installed at its Mexicali plant.

Start-up is planned for the first half of 2024 and once up and running will fulfil the company's need for new capacity for standard tissue products. Dario Palma y Meza Espinoza, Operational Director, Papel San Francisco, said: "In today's business environment it is crucial to consistently operate equipment at the maximum productivity and efficiency."

Valmet has previously delivered five tissue machines to the company. Four Advantage DCT machines started up in 2006, 2009, 2018 and 2020. According to the supplier, Papel San Francisco was also the first company to start up an Advantage NTT line in 2013.

CHINA

Hengan Group boosts premium tissue capacity with investment

China's Hengan Group has signed a contract with Baosuo Enterprise for the supply of a Baotuo BC1800 crescent former tissue machine to increase production of premium tissue products.

The machine has a design speed of 1,800m/min, a paper width of 2.8m, and will be installed at the Hengan Group's Shandong Hengan Paper base, located in Weifang, Shandong.

Annual production capacity will reach 30,000tpy. The supplier said it has "the advantages of high production capacity, low energy consumption and stable operation".

Baosuo has also supplied tissue machines for Hengan China Paper (Jinjiang, Fujian) and Hunan Hengan Paper (Changde, Hunan) under Hengan Group.

FRANCE

MP hygiène boosts capacity by 38,000tpy with TM investment

France's MP hygiène has invested in a second Toscotec-supplied AHEAD 2.2 tissue line at its plant in Annonay. Supplied on a turnkey basis, PM2 has a sheet trim width of 2,8m, a design speed of 2,200m/min and a capacity of 38,000tpy. Start-up is scheduled for 2024. The scope of supply includes Toscotec's latest design shoe press TT NextPress and TT SYD Steel Yankee Dryer.

Toscotec's high efficiency TT Hoods are equipped with both natural gas fuelled burners and electric heaters. See this November/December TWM's Operations Report to get the latest on MP hygiene.

CANADA

Cascades to permanently shut down corrugator at Belleville

Cascades has announced the permanent shutdown of the corrugator at its Belleville facility, as the plant realigns its priorities to converting. Effective no later than 2 December, the company said the shutdown will "provide the facility with a more sustainable business model by focusing its operations on converting activities as a high volume, efficient and graphic sheet plant".

Charles Malo, President and Chief Operating Officer of Cascades, said: "With additional capacity generated by the strategic optimisation of our network in Ontario in recent years, we have the ability to redeploy this production to other units in the region. By doing so, we will significantly reduce costs and re-focus Belleville's priorities to converting."

The shutdown will impact 31 of the 106 employees.

Country Report: France

FRANCE TISSUE BUSINESS UPDATE — CONSEQUENCES OF 2022 ENERGY DISRUPTION: GREATER RELIANCE ON NUCLEAR POWER MEANS HIGHER RISKS OVER ELECTRIC POWER COSTS

In a time of extraordinary price disruption, 26 of France's 56 aging reactors are offline for maintenance and 18 are down with labour strikes. The country's previous cost and carbon footprint advantage has been eroded, the resilience of the nuclear grid remains a concern, and tough choices lie ahead.

rance's tissue business was last a subject of this column in 2019. Of our conclusions, we noted a good position for France as a domestic producer in the near term with a small number of net imports to balance exports and excess demand; the carbon emissions from French tissue production were noticeably lower than neighbouring countries due to the high percentage of carbon-free nuclear power-generated electricity; French tissue machines tended to be fast but somewhat older, and labour costs were higher than other western European tissue producers.

However, this report finds a much different economic environment than the previous analysis. Then, Covid-19 hit the global manufacturing economy and the associated supply chain very hard. A recovery was underway in the second half of 2021, only to be dislocated in February 2022 by the land war in Ukraine and the disruption of energy supplies to western Europe. This report will look at the relative resilience of French tissue producers compared to neighbouring countries' tissue industries.

Analysing tissue demand starts with population growth and disposable income. Figure 1 shows the population growth as a line and GDP as adjusted per capita purchasing power to indicate the size and buying power of the domestic market. France's population continues to grow at about 0.32% a year (2022 estimate) after



Figure 1: France's Population and per Capita GDP



Bruce Janda Senior Consultant, Fisher International

a slight inflection in 2015, showing a small growth rate decrease. This is relatively low growth in the world but better growth than some of France's neighbours experiencing shrinking populations. The estimated per capita GDP for 2022 shows a recovery from shrinkage due to the Covid-19 pandemic in 2020 and 2021. Real GDP growth after inflation may end up somewhat lower.

Tissue demand is also related to consumer pressure from unemployment and inflation, shown in Figure 2. Unemployment has continued to improve since our 2019 report. However, France continues to see about 20% youth unemployment. Inflation, shown as the blue line, took a significant jump in 2022, and the data shown may still be revised higher. This is expected to put a strain on tissue consumers and may result in some switching to cheaper brands as the winter energy bills arrive.

France complements its domestic tissue production with a small and steady flow of imports shown in Figure 3. The main tissue suppliers are France's adjacent neighbouring countries, including Italy, Germany, Spain, and Belgium, with tissue imports from Portugal starting in 2018.

France's tissue exports include many





Figure 2: France's Inflation and Unemployment



Figure 4: France's Tissue Exports



Figure 6: France's Tissue Products



Figure 3: France's Tissue Imports



Figure 5: France's Tissue Machine Additions



Figure 7: France's Tissue Fibre Sources



More quality with less energy?

How to produce superior quality while using less energy?

This calls for an ingenious solution. **INGENIA.**

INGENIA makes it possible to produce premium quality structured tissue paper with substantially higher quality than textured tissue and close to Through Air Drying (TAD) produced paper, **but using 35% less energy.**

INGENIA is the answer to your company's needs and the expression of Toscotec's vision that combines superior efficiency with concrete sustainability.



of the same adjacent neighbours with the addition of the United Kingdom. France tends to import about 25% more tissue than it exports. As a net importer of tissue, domestic tissue production was maintained to be less than domestic tissue demand. This stability of import/export levels may be challenged and realigned as the energy and supply chain cost shocks reverberate through the regional tissue supply systems. France's tissue exports trend is shown in Figure 4.

This relatively stable supply has allowed France to maintain a disciplined approach to new machine additions, as shown in Figure 5. The green bars show one to two machine additions spaced out, with the red bars showing tissue machine line deletions. The net result was the net deletion of two machines from 2007 to 2022, with two new machines expected by 2024. Each of the new machines tends to have more capacity, so the total production has increased more than shown in the count change data.

France is a mature tissue market with well-developed consumer and commercial segments and products. The relative proportion of tissue finished products is shown in Figure 6. Consumer bath tissue is the largest segment, but consumer towels are also a welldeveloped category.

France's tissue fibre sources are shown in Figure 7. Its recycled fibre tends to go to the commercial tissue segment and the eucalyptus and other northern hardwoods into consumer bath and facial tissue.

Most French tissue mill sites tend to be based on purchased baled virgin fibre, as seen in Figure 8. This makes France dependent on imported virgin pulp for tissue production and increases the business risk in a high inflation period.

French tissue production includes about 15% advanced tissue production. These tissue machines are TAD and require more natural gas for drying the tissue paper than conventional machines. TAD products do have improved properties and use much less fibre to produce the same tissue product performance. This percentage has been dropping with time as more conventional technology capacity is added. France's advanced technology is focused mostly on consumer towels where the high absorbency provides more value to the consumer.

The average relative quality and capability of French tissue machines is shown in Figure 10. A comparison set of France's closest tissue trading partners was chosen to benchmark capability. Turkey was added as an export-focused comparison with frequent sales to the United Kingdom. The United States is included to provide further energy cost benchmarking in the next section.

The size of the bubble represents the relative total tissue production in each country and the Y-axis is the average machine size or trim width. Wider machines generally make more tissue per labour unit. The alternative measure is by machine speed. In this case, the X-axis shows the average technical age of each country's tissue machine fleet. In many cases, this is also related to machine speed. French tissue machines tend to be older and slower than most of the group, which suggests lower productivity and higher costs.

The machine quality factors discussed so far tend to explain why France's tissue production has higher average cash costs than most of the comparison set. The stacked bar colours show the other major cost categories that also contribute to these differences. French labour costs and the low proportion of recycled fibre compared to Germany or the United States result in relatively higher costs. In our previous 2019 analysis, France enjoyed an energy cost advantage due to its nuclear power system. We will examine this effect further.

The tissue industry average viability analysis is shown in Figure



Figure 8: France Tissue Site Type



Figure 9: France Advanced Tissue Production



Figure 10: France's Trade Group Tissue Machine Quality

12. Italy, France, Belgium, Germany, and the United Kingdom cluster together with higher risk scores, whereas Turkey and Spain are well positioned to weather economic difficulties with their especially low-cost operations.

Figures 13 and 14 take a deeper dive into cost changes due to the energy crisis in Europe. These charts show the relative cost per ton for tissue mill purchased electric power for each country in the comparison set. Figure 13 is for 4Q2021 and Figure 14 2Q2022. This covers the time of the shut-off of Russian energy to western Europe. France's electric power cost moved up in relative position, but this understates the magnitude of the cost impact as the cost scales of these charts are quite different. France, Spain, Italy, and the United Kingdom tissue mills saw purchased electricity prices more than double. Germany's power prices more than tripled, while Belgium and the United States saw very small increases. The United States is relatively insulated from the power cost acceleration and Belgium appears to have an industrial policy to protect manufacturing. France was expected to be relatively insulated from the power costs due to its nuclear power industry. However, The Wall Street Journal reports that up to 26 of France's 56 aging nuclear reactors have been offline due to major maintenance issues required to fix stress-corroded piping. Another 18 reactors are down due to labour strikes. These issues could not have come at a worse time and resulted in the loss of both a cost and carbon footprint advantage for France. These issues will be corrected in 2023, but the resilience of the aging nuclear grid will remain a concern.

The relative carbon footprint of the study group expressed as scope 1 and 2 emissions for fuel used on site and electric power purchases is shown in Figure 15. Here we see that France retains a good position with some nuclear power in service compared to heavy coal consumption in Turkey and Germany.

This analysis looks at a snapshot of France and western European tissue-making based on country averages in an extraordinary time of energy price shocks and supply chain disruption. This crisis will pass eventually, but it is not clear when or how the tissue business will adapt. France's electric power cost and lower carbon footprint advantages seen in 2019 have been significantly offset by maintenance issues in 2022. These will be corrected, but France will have to consider whether it will reinvest in nuclear power to maintain this advantage. Additionally, the country will continue to see higher labour costs as France's middle-aged tissue fleet means that labour will be a larger percentage cost to broader and faster competition. Finally, the consumer disruptions from a brutal winter of inflation will stress French consumers.

Analysis of competitive position requires specifics on tissue producers and individual machines. This article presents a static picture summary of France's tissue industry today. Fibre prices, exchange rates, and environmental regulations will change, providing some participants with advantages and others with new challenges. French tissue mills will continue to change hands and perhaps consolidate; neighbouring countries may invest in tissuemaking capacity, thus affecting France's imports and exports.



USER SELECTED VIABILITY FACTORS BY COUNTRY

Figure 12: France's Trade Group Cash Cost per Tissue Ton by Country



Figure 13: France's Trade Group Cash Cost per Tissue Ton by Country



Figure 14: France's Trade Group Cash Cost per Tissue Ton by Country



Figure 15: France's Trade Group Total Carbon Emission per Ton of Tissue by Country

Country Report: France

Figure 11: France's Trade Group Cash Cost per Tissue Ton by Country

Country Report: France

IN TESTING TIMES WITH VALUE GROWTH SUBDUED, CONSUMER LOYALTY, ESSENTIAL PRODUCTS AND PRICE INFLATION WILL KEEP THE CATEGORY BUOYANT

Volume declines relatively more significant set against increase in population and number of households. Report by Ian Bell, Head of Tissue and Hygiene, Euromonitor International.



lan Bell Head of Tissue and Hygiene, Euromonitor International

rance has a leading and developed retail tissue market measured at per household consumption of 22kg in 2021, which compares favourably with other developed markets such as Germany. This high level of consumption means that there is little room for further organic growth and further household penetration, and the very real threat that the market will in fact recede as the country experiences a host of disruptive forces along with the rest of the region.

Inflation is the lead story

No prizes for guessing that the big story for French tissue industry in 2022 is inflation, notably category-level product price inflation in stores, supply chain inflation and economy-wide inflation which is driving consumers to make very stark choices around daily expenditure. What was once affordable, purchased as a matter of course, almost on "autopilot," now has a wholly new context, a new purchasing landscape where consumers are now considering what is affordable or indeed a necessity in what is a rapidly changing landscape. What is happening in France is broadly indicative of what is happening across the Eurozone but there are factors that mark its direction of travel as specifically French.

Although both population and household numbers continue to increase this has not translated into commensurate volume increases as would be expected under normal circumstances. Indeed, the story for 2022 is one where volumes are expected to decline by at least 1% as households look to economise and cutback on the breadth of products they consume. A very practical example is kitchen towels, with consumers cutting back usage ("kitchen towel diet") or more frequently deploying reusable (washable) cloths or sponges.

Certainly, the transition from pandemic to endemic has not helped retail tissue either as new working practices imbedded and had a relatively less impact on consumption in 2022 as lifestyles "normalised". It is important to keep in mind that volume declines are relatively more significant set against the background of an expanding population as well as number of households, so from per capita and per household perspectives declines are greater.

A question of value

Value considerations are more fragmented, the retail tissue market as a whole saw value sales increase in 2022, largely as the consequence of inflation. This is category wide and comes from soaring input costs such as pulp, energy for converting, fuel for distribution and labour costs. Pulp is by far the largest contributor and is symptomatic of the European pulp supply problems linked to the war in Ukraine which has meant that the resulting sanctions on Russia have not only led to the very well publicised gas and oil price hikes but also those for wood and timber products.

France is therefore at the mercy of Europe-wide pressures, meaning that as supply is being threatened by a combination of high energy and material costs production shutdowns are coming to the tissue sector. A similar situation has been observed in other sectors from metallurgy to fertiliser production but is indicative of pricing being out of kilter with the new economic reality of production.

The big question for the French retail tissue market comes down to where input



Source: Euromonitor International



Source: Euromonitor International



Source: Euromonitor International







Source: Euromonitor International

cost inflation is materialising. Leading brands such as Essity already increased prices in the first half of 2022 and are expected to do so again before the end of 2022. That said, the extent to which inflation is being tracked across retail tissue is expected to be in the region of 5% for 2022, some way behind the huge growth in producer price index for paper and pulp products. Although Essity raised prices by 7-8% in April 2002 there is an indication that retailers are so far resisting putting the full price increase onto products on shelves. To what extent this can be resisted for a second price increase will be interesting to see, but this is indicative of a category that has a history of price promotion and even loss leader status as competitive tools for retailers to compete for shoppers.

Growth decomposition

Forecast value growth predictions for the French market (and for the rest of Europe) are wholly concerned with inflation and product pricing; this is now the "only game in town" in terms of forecasting. True, France will benefit from further household and population growth over the medium term but the broader economic conditions as well as the looming threat to disposable income will mean that tissue will become very much more competitive over the medium term. Please refer to the accompanying inflation drivers in the retail tissue graphic for a broader review of which factors are affecting the retail tissue sector in 2022 and beyond*.

The situation is changing quickly, but what we can deduce from e-commerce audits is that for the year to date like-forlike median pricing for popular branded and private label SKUs is significantly up, in the order of 5-10% for brands and much more significant price increases noted for private label products. While online surveys have their limitations as only accounting for 7% of channel value in 2021, what we can say from this timely (if narrow) survey is that significant levels of price increases are appearing in stores in the second half of 2022 and into 2023. The scale of price increases linked to private label is an interesting proposition; anecdotally there is a suggestion for developed markets such as France where price tiers exist within private label, that PPI inflation has led to the lower-price segments disappearing from shelves. We will know more about this trend and how price inflation is affecting retail prices across the categories when our current round of research concludes in December 2023.







Source: Euromonitor International

Private label

Private label can be considered moderately well developed in the French market but still 15% behind the leading levels of private label reported in the Spanish and German markets. This in one sense suggests there is still room for further development but at the same time masks the lack of discounters in the French market, which have been a driver for private label in other European markets, such is the hold that Carrefour and Auchan have on the French retail market. Discounters only accounted for 12% of tissue value sales in France in 2021 while this figure is closer to 50% in Germany. One could argue that the current situation affecting affordability could prove to be fertile ground for discounters to take a bigger share of the French retail market: if not now then it is difficult to see that discounters will ever get a better chance, given the set of circumstances.

Certainly, we can identify there is further space for private label to develop into when we compare its relative penetration in France with comparable European markets. Compared to Germany and Spain, there is a 15% gap and all the market evidence currently points to a significant expansion of private label in H1 2022 at the expense of leading brands and smaller players.

Medium-term forecast scenarios

As things stood in summer 2022 the medium-term value forecast across retail tissue in France was flat, seemingly uneventful, but this masks a great deal of underlying activity and comes with the very significant caveat that this only considers events for half of the year.

Looking at a more pessimistic scenario, one of global stagflation

Worse-than-expected global negative spill-overs from the war in Ukraine through uncertainty, lack of confidence and supply constraints cause stagnant global economic growth combined with high inflation (stagflation). Global real GDP growth is 0-2% in 2022 and ranges from -0.8% to 1.6% in 2023. Global inflation is 7.0-9.5% in 2022 and 5.5-8.5% in 2023. More abrupt and stronger cuts of Russian energy exports to advanced economies and more difficult than expected energy decoupling from Russia worsen supply constraints and lead to higher energy price increases.

An intensification of the war in Ukraine and a worsening Russian economy led to stronger Russian threats to escalate the conflict. Higher risks of an escalating conflict cause global private sector confidence to decline significantly relative to the baseline forecast and financial risk premia increase substantially relative to the baseline. Private sector confidence declines by 15-35% and financial risk by another 1-3% relative to the baseline forecast. Estimated probability (circa August 2022): 22-32% over a one-year horizon.

Global stagflation will result in value achievement being a little more subdued, but the combination of products being consumer essentials and price inflation will keep the category value buoyant even in the most testing of circumstances; whether anyone is making any money in these circumstances is a much more significant question.

Note: *Additional material



Source: Euromonitor International

MP HYGIÈNE ON TRACK FOR LAUNCH OF NOE OF The World's First high speed tissue machine With exclusively electric air system

Already an AfH market leader in the French tissue market, the AHEAD 2.2 tissue machine 2024 start-up will mean its CO2 footprint will be one of the lowest in the world, says President and Chief Executive Marc Miribel. Report by TWM Senior Editor Helen Morris.



Family history: MP hygiène was taken over by founder Louis-Alexis Miribel's great grandson Marc Miribel in 1992, and his daughter Laure and son Pierre are now also involved in the business

P hygiène's Annonay tissue plant is situated in one of the most scenic regions in the country, in the Ardèche department in the Auvergne-Rhône-Alpes region of southeastern France. The area is known for its forests and trails, with natural limestone arch Pont d'Arc leading to the rapids of the Ardèche Gorges, the Chauvet-Pont-d'Arc Cave which holds some of the best-preserved figurative cave paintings in the world (as well as other evidence of Upper Paleolithic life), and wildlife park Safari de Peaugres which is home to animals from across four continents.

The department will also soon house a pioneering high-speed tissue machine. In the first quarter of 2024, an AHEAD 2.2 tissue machine is due to be started up.... according to MP hygiène and supplier Toscotec it will be one of the first high speed machine in the industry to feature an entirely electrical air system with three stages of heat recovery.

"This is very important for us, and the tissue industry as a whole," MP hygiène President and Chief Executive Marc Miribel explains over a Teams call from the company's facility. "Not only will this investment double our parent reels manufacturing capacity, but its start-up also means that the Annonay tissue mill will be one of the first in the world to have electric hoods for its production. This means our CO2 footprint will be one of the lowest in the world."

The milestone of a second tissue

machine and the environmental initiative behind its investment is reflective of the company's longevity, as well as its tenacity during the current turbulent climate.

TWM first met Miribel at the Annonay plant in 2015, and then as now his enthusiasm and determination for his business to thrive is evident, as is the humour he has kept despite all the challenging market conditions currently facing the European tissue market. More of which later.

Established by Louis-Alexis Miribel in 1865 as a textile wastepaper recovery site, MP hygiène was then taken over by great grandson Miribel in 1992, and his daughter Laure and son Pierre are now also involved in the family business. During



MP hygiène's Annonay tissue plant: an AHEAD 2.2 TM is due to be started up in the first quarter of 2024

our 2015 interview there was much talk of the "dream" of a second tissue machine and of the potential for further growth in the hygiene sector. Despite the recession at the time, the French AfH market was growing 2-3% per year. "The hygiene sector has a lot of potential," Miribel said then. "The air dryer is simply not as good as tissue, tissue is more hygienic. Hand hygiene is our speciality."

Now in 2022, his comments are more relevant than even he could have predicted.

The new machine will give the company opportunity to manufacture paper from recycled paper, which is a significant change in its product strategy. "Given the increased demand of the market for more circular and sustainable solutions, it was an obvious decision for us to invest in paper recycling with the new paper mill," he says.

The start-up of the "low-carbon

designed" PM2 means that in full electrical configuration, the company will eliminate the direct carbon emissions linked to the hood drying process, Miribel says. It is equipped with the supplier's latest design shoe press TT NextPress and TT SYD Steel Yankee Dryer, with the TT Hoods equipped with natural gas fuelled burners and electric heaters.

Its start-up will also boost the company's tissue production capacity by 38,000tpy. "Our first mill – PM1 - has a capacity of 30,000tpy of parent reels, and we convert around 45,000tpy of finished products. This means that we actually buy around 15,000tpy of parent reels essentially from Spain or Italy. This second mill investment will allow us to reduce the risks associated with buying parent reels from other countries as well as decrease our carbon footprint associated with transport."

Wastepaper stock prep will start in the last guarter of 2023 as the wastepaper will be able to work on the two machines in the future. "PM2 will be one of the most modern wastepaper stock preps in the world as it's the first one to be startedup," he adds. "We will be able to treat 30,000tpy of wastepaper per year, and the installation will basically be able to use any type of wastepaper, even carton board. Instead of having a double press as we do on PM1, we will now have a shoe press, giving us the possibility of making softer paper. So PM2 is a vital addition for us, and this also means that eventually we could diversify further and go into the consumer market."

The strategy is to achieve 65,000tpy of paper produced by 2025, 30,000tpy from the first machine and 35,000tpy from the second, with a mix of 50% recycled products. "There's a big trend both generally but also in the tissue market for more effort to be made in terms of environment, ecology, sustainability ... We will never be able to replace 100% of the products currently in pure pulp but there is an opportunity to switch some to recycled products, especially in the Afh sector since they don't usually require bright white products."

The Annonay plant has also invested in a new scanner for PM1, and a new pulper. The company has converted

THE ANNONAY PLANT HAS ALSO INVESTED IN A NEW SCANNER FOR PM1. AND A NEW PULPER. THE COMPANY HAS CONVERTED 43.000 TONNES THIS YEAR AND HAS TWO GAMBINI-SUPPLIED LINES PRODUCING 12,000 TONNES EACH. A NEW UNITED CONVERTED MACHINE 10.000 TONNES. TWO OTHER UNITED CONVERTING LINES PRODUCING 10.000 TONNES EACH. A NEW Z FOLD FOLDED PAPER LINE THAT WILL BE INSTALLED IN 2023 AND PRODUCE 3.000 TONNES. AUTOMATIC TRANSFER ARMS. CORELESS SYSTEMS. AND NEW EMBOSSERS.



THE WORLD'S LARGEST DEDICATED TISSUE INDUSTRY TRADE SHOW

The European edition of Tissue World is the only dedicated event for tissue manufacturers and suppliers in central Europe.

In 2023, the flagship show will make its stop in **Düsseldorf** for the very first time! A mature tissue market with high private label shares, Germany is home to some of the sector's largest private label manufacturers.

Tissue World is setting up there, ready to welcome back thousands of industry professionals for three days of trading, learning, and networking.

Don't miss your chance to unite with the global tissue industry at our inaugural event in Düsseldorf from 28-30 March 2023!

www.tissueworld.com/dusseldorf tissueworlddusseldorf@informa.com

G

Portfolio



Organised By

 \mathbf{h}



Official Magazine

IOCATION



43,000 tonnes this year and has two Gambini-supplied lines producing 12,000 tonnes each, a new United Converted machine 10,000 tonnes, two other United Converting lines producing 10,000 tonnes each, a new Z fold folded paper line that will be installed in 2023 and produce 3,000 tonnes, automatic transfer arms, coreless systems, and new embossers. In packaging, it has invested in recycled plastics, and product launches include long autonomy rolls and coreless systems. By the end of 2023, the company's converting capacity will exceed 75,000 tonnes.

Locality is also key. MP hygiène is close to the Italian and Spanish borders and has always faced competition from Spanish and Italian companies, small local converters in Italy, and the larger international tissue companies that dominate much of the French and neighbouring markets. However, here is where the impact of the outbreak of Covid-19 has had somewhat of a two-fold positive effect on the business.

"We clearly see two positive and noticeable trends following the outbreak of Covid," he says. "The first is that there is still a huge volume of general toilet tissue that is needed. People were at home during the outbreak, but we didn't lose that much volume in the AfH hand towels market or in the rolls and folder. This is because some people that were still out and about working washed their hands more. If we compare our figures LOCALITY IS ALSO KEY. MP HYGIÈNE IS CLOSE TO THE ITALIAN AND SPANISH BORDERS AND HAS ALWAYS FACED COMPETITION FROM SPANISH AND ITALIAN COMPANIES, SMALL LOCAL CONVERTERS IN ITALY, AND THE LARGER INTERNATIONAL TISSUE COMPANIES THAT DOMINATE MUCH OF THE FRENCH AND NEIGHBOURING MARKETS. HOWEVER, HERE IS WHERE THE IMPACT OF THE OUTBREAK OF COVID-19 HAS HAD SOMEWHAT OF A TWO-FOLD POSITIVE EFFECT ON THE BUSINESS.

today versus 2019, we have a doubledigit growth in volume. And in sales, it's even more, because of the average price per kilo."

He says that the big change from the pandemic has been that people care more about their hands and hygiene. "Even today - although it may sometimes look like many people have already forgotten! - we see more hygiene awareness, and I think it's a trend that will easily carry on for the next decade and more," he adds.

The second, is locality. "The pandemic has really realigned people's focus to local business. It's emphasised locality, and the positive sustainability effects that come from buying local. This trend is everywhere in France, and this wasn't as much the case before Covid, when we faced a lot of competition from Spain and Italy. But now, people care more about sustainability, and this includes recycled products and also working with local actors, so in our case the French businesses. Clearly this has had a very good effect for us as people choose us instead of the big players."

He says that while the business hasn't yet seen this impact much on numbers, what it is seeing is that the customers here are saying: "Well, we need to give some mind and spirit to what we do. Before no one cared, it was just price, price, price. Now it is more about the water, about transport and energy costs and CO2 emissions."

As for market sectors, due to the working from home system demand for hygienic paper has slightly decreased he says, but there has been a sharpened demand for hand towel rolls and folded hand towels due to the Covid-19 as well as the centrefeed rolls. "Hand hygiene habits have been strengthened with Covid," he adds.

And for Private Label products? "We mostly produce private label products for



Production boost: two Gambini-supplied lines, a new United Converted machine, three Nexus rewinders, and a new Z fold folded paper line have recently joined PM1 at the site



The company's first machine PM1: since start-up, the business has had growth of between 1,000-2,000 tonnes per year

the AfH markets, but we tend to develop more and more our own brands. The company developed itself by helping clients to develop their own professional tissue paper brand and marketing strategy so private label manufacturing remains part of our DNA."

Across the market, there is still a "natural growth". "If you take us since we started PM1, we have always had growth of between 1,000-2,000 tonnes per year. It's difficult to say whether this is due to the organisation or due to growth. I'd say 50/50. Now we are 45,000 tonnes and there's around 1,000 tonnes of natural growth. Today the fact of bringing parent rolls from Spain, Italy ... it costs money, and it isn't the most sustainable option. It's also not easy to find transport and customers also expect us to reduce our CO2 impact due to transportation. We intend to have growth of 2,000 tonnes per year over the next five years, which will be covered by the new PM2."

While the business is focused on AfH products, Miribel says it is seeing an annual growth for AfH tissue products of nearly +2% per year. There has also been a sharpened demand on hand towel rolls and folded hand towels due to Covid-19, and the same for the French market in terms of private label consumption.

As for inflation ... how is the business coping? "It's a nightmare," he says. "The root of it is that it's not easy to make a policy because we have been in this inflation tunnel for nearly a year now. It's above stress levels now. We faced €2.2m in energy costs in 2021 and next year we will be around €12m. It might be more. And if you add that to the price of the pulp ..."

The business has had to increase its prices many times over the last 12 months, a result of the energy price hikes and rising pulp prices. "Nevertheless, these rises have severely impacted our profitability with an important shrinkage of the margin. Our strategy is to mitigate as much as we can the risk by producing locally and focusing on long autonomy products to reduce the impact of transport costs."

The AfH distributors have mostly accepted the price increases. "There is still a lot of uncertainty in regards to the stability of the prices. We have to be cautious because winter is coming and we don't know how it will go in terms of energy prices which impact paper manufacturers a lot."

He concludes that if the French government doesn't subsidise and help enough companies in comparison to Spain, for example, if the business has machines that continue to run in the current situation, there could be temporary side effects and loose of competitiveness. "Simply, toilet paper has to be produced locally, just in terms of energy. We all hope this story of war stops, and we can continue to have natural growth in tissue, I'm expecting around 1 or 2% in Europe. But there will be quantities missing sooner or later here and I don't think it's good to buy from countries far away in terms of transport, with the CO2 emissions. That's also why we made the PM2 investment. We will be the first mill to have an electric hood and this is very important for us."

He adds that while the company's profitability has "clearly been impacted" this year, it remains in double digits of EBITDA, previously at around 20% and now more at 10% EBITDA. "That is still OK, especially in the current market conditions. Sustainability, local production and products ... this has to be key. The strategy for us as an industry has to be local, and sustainable."

WHILE THE BUSINESS IS FOCUSED ON AFH PRODUCTS, MIRIBEL SAYS IT IS SEEING AN ANNUAL GROWTH FOR AFH TISSUE PRODUCTS OF NEARLY +2% PER YEAR. THERE HAS ALSO BEEN A SHARPENED DEMAND ON HAND TOWEL ROLLS AND FOLDED HAND TOWELS DUE TO COVID-19, AND THE SAME FOR THE FRENCH MARKET IN TERMS OF PRIVATE LABEL CONSUMPTION.

DECARBONISING — WITH AN 8,500 PANEL SOLAR PLANT, NON-FOSSIL METHANE, A BIOMASS BOILER FIRED ON FOREST SOIL RESIDUES, AND SOURCED CARBON REDUCED PULP

LC Paper's energy was already 100% renewable, mostly bought from small hydroelectric plants high in the mountains north of Barcelona, Spain. Now, a total net zero life cycle is being brought in-house. General Manager Pau Vila explains the schedule.



LC Paper's Besalú, Catalonia-based mill: adjacent is an in-house solar plant with around 8,500 solar panels



Pau Vila General Manager, LC Pap<u>er</u>_____

The energy crisis has been a severe issue for the European industry during the past few months. Tissue production is a very energy intensive operation, both in terms of electricity (the price of which is heavily linked to the gas price, due to the high exposure of the European energy mix to gas-based electricity generation technologies) as well as in terms of industrial heat, for which gas is the main source. The cost increases have been in some cases five-fold or six-fold compared to previous years, an unbearable pressure for tissue mills. During certain periods of the past summer, our average monthly energy bill went from the usual $\leq 350,000 - \leq 400,000$ to touching the $\leq 2,000,000$ figure.

Figuring out ways to replace gas with other technologies requires technical creativity, but can also be an opportunity to pave the way to mid- and long-term decarbonisation needs. That is precisely the case of LC Paper. Being a smaller tissue mill makes our company particularly exposed to cost fluctuations due to the decreased negotiating power with utilities suppliers. Despite this challenge, we have been able to overcome the energy crisis through energy innovation projects that started before the energy crisis, originally not approached as cost-cutting initiatives.

The first of those projects is an in-

house solar plant with around 8,500 solar panels over a terrain of 20ha, adjacent to our Besalú mill. This installation was commissioned under a PPA schema, in which a third party develops the initial investment while an agreement is made to sell all the produced electricity to the mill based on a fixed cost which is now significantly lower than the average electricity price of the Iberian mix. LC Paper already used 100% renewable energy for the past years, but most of that came from grid purchasing with certified renewable origin: the mill is surrounded by mountains where small hydroelectric plants have traditionally been installed. The main goal of the on-site solar plant was to have a higher commitment to renewable energy through our own generation rather than a purchase-only strategy, but again, the current context has made this project financially competitive. The on-site solar plant currently covers around 13% of the company's electricity needs, while a Phase II is already projected with the aim to scale



Long-term vision: a partnership with Spanish pulp producer Ence is helping to reduce the company's carbon footprint

the in-house photovoltaic production to 13 MWp. The main challenge of the on-site electricity generation is the low maturity level of electricity storage at that scale, since it is unusual to find batteries that allow for the storage of such figures.

The second project is the partial substitution of fossil-based gas with biogas, specifically biomethane. Biomethane is originated in nearby farms: the residues from animals are a source of energy through fermentation, which creates a non-fossil type of methane which can be used as a substitutive for regular methane. The cost of biomethane was usually much higher than that of the of fossil gas, between two and three times; however, LC Paper still chose to initiate this project as a decarbonisation initiative. Due to the current context of the gas market, it is now a significantly more cost-effective alternative: around half the price of fossil gas. This type of bio-based combustible is delivered to our mill in liquefied form inside tanks and is injected into the existing gas pipes. The main limitation is a logistic one: how many liquefied trucks can be delivered in a day – however, biomethane is capable of being mixed with fossil gas in environments where the consumption exceeds the delivery capacity.

The third energy project is a high-capacity biomass boiler. Our mill is surrounded by forests in a Mediterranean climate, which is prone to suffer wildfires during the summer season. To prevent wildfires, residues in the soil of the forest need to be collected. Those residues are too poor to turn into wood, but are very combustible, so they are an interesting alternative to burning fossil fuels. During the lifespan of the trees and other vegetation in the forest, the items that are later collected from the soil absorb carbon emissions – in fact, they absorb more emissions than those created during the combustion process, so their footprint is carbon positive. Biomass also used to be a more expensive alternative than fossil gas, but the latest events have turned this situation upside down. The main challenge with biomass is that tissue production requires steam at very high temperatures, while many biomass solutions cannot produce heat at the required high temperatures - for that reason, we mostly orient the biomass project to produce kraft paper where the temperature requirements for the hood are lower.

Our long-term vision of a net zero life cycle for tissue projects required committing to higher costs than traditional energy sources. In the middle of executing those investments, the situation changed in a way that this is now also the most costeffective energy layout.

Through substituting all the energy sources (both electricity and heat) for renewable sources, we solve most of the Scope 1 and Scope 2 emission challenges. Scopes 1 and 2 refer to the direct emissions of our industrial activity and the energy sourcing. However, to reach the net zero life cycle goal, we still need to solve the Scope 3, which is related to the suppliers of the raw material used as the input of our activity as well as the transportation of the finished goods to the final customers. For that matter, we have partnered with the Spanish pulp producer Ence with the product Naturcell Zero: an unbleached pulp in which the supplier reduces the carbon footprint and offsets the remaining figure. More of those partnerships will be needed also with chemical products' suppliers and logistics partners before reaching a full net zero

tissue life cycle, which we see closer than ever. In the areas where we are unable to cooperate with the supplier to design a net zero fulfilment alternative, we plan to offset the emissions ourselves – that includes chemical products and other minor inflows to our production processes.

Our advances in the decarbonisation of tissue production and other circularity innovations, including the commitment to 100% plastic-free packaging, have allowed us to be the worlds' first tissue mill globally with the B Corp certification. B Corp is a global certification that defines the social, environmental, and governance best practices for businesses – in other words, the CSR gold standard through which corporations from multiple geographies and sectors authenticate their sustainability efforts, including companies like Danone, Alpro, Patagonia, Ben & Jerry's or The Body Shop.

The investments and innovations previously described need to be clearly differentiated from greenwashing claims, and we see certification programmes as the key for building trust in sustainability.

Our company was already certified in more specific industrial programmes, such as the ISO 14.001 for environment, the ISO 14.067 for carbon emissions, the ISO 50.001 for energy savings and badges such as the Ecolabel or FSC. Unlike all those programmes, B Corp's approach is more holistic. It involves strict environmental requirements such as accreditation of the energy, raw material and water sourcing, excellence in waste processing, circularity initiatives and plastic elimination, amongst others. It complements those requisites with social qualifications including the ratio between the lowest and highest salary, inclusion projects for minorities,



Decarbonisation advances: circularity innovations have enabled the company to be the worlds' first tissue mill globally certified with B Corp

satisfaction ratios amongst the employees and ethical policies and controls. After completing the assessment with a sufficient qualification as to be certified B Corp, it is compulsory to change the incorporation documents of the company to add to the company's mission the orientation towards generating positive impact, both socially and environmentally. It is also needed to incorporate the impact monitoring into the functions of the Board, on the same level as it needs to look after creating financial value for the shareholders.

Through the more horizontal nature of the B Corp programme, customers clearly identify the certified companies as positive corporations in all the fronts – not only in a certain area such as in the case of the ISO programmes. It is a more recognisable badge too, which has already resulted in better visibility for our sustainability efforts and increased projection into the niche channel of eco-friendly tissue, where our company is clearly oriented.

We continue to see strong potential in combining the increasingly demanding environmental requirements with initiatives that lower the financial exposure amid the current energy crisis. Being resilient through a solid sustainability strategy will shape the future winners in the tissue industry. Instead of taking an opportunistic approach where the lowest cost energy sources are selected at each point of our history, we strive to define a longterm strategy where the energy layout is coherent over time.



Eco-friendly tissue: the B Corp programme has resulted in increased projection into niche channels



The LC Paper team: a solid sustainability strategy continues to shape the company's future

Environmental: Technical Theme **KIMBERLY-CLARK'S WORLD FIRST GREEN HYDROGEN PROJECT WILL BE TEST-CASE FOR WIDER ROLL-OUT**

2025 start-up will reduce reliance on natural gas across UK manufacturing by up to 30%. Oriol Margó, Sustainability Transformation Leader, Kimberly-Clark EMEA, said K-C is targeting 100% renewable energy across the UK and Ireland by 2030. Report by Senior Editor Helen Morris.



A company first: expected to be running in 2025, K-C's £40m green hydrogen project will be located at its Barrow-in-Furness plant in Cumbria, UK



Oriol Margó Sustainability Transformation Leader, Kimberly-Clark EMEA

IT WILL INITIALLY FEATURE A 35 MEGAWATT (MW) ELECTROLYSER WHICH IS EXPECTED TO PRODUCE AROUND 3,500 TONNES OF HYDROGEN EVERY YEAR, AND K-C HAS SAID THE PROJECT WILL REDUCE 25,000 TONNES OF GREENHOUSE GAS EMISSIONS ANNUALLY – EQUIVALENT TO TAKING 580 TRUCKS OFF UK ROADS EVERY YEAR.

n September, tissue giant Kimberly-Clark (K-C) announced it was launching a breakthrough £40m green hydrogen project at its Barrow-in-Furness plant in Cumbria, UK. The company has signed an agreement with Carlton Power, an independent energy development company based in Stokesley, North Yorkshire, to supply hydrogen to the site in a bid to reduce its reliance on natural gas as part of its global decarbonisation strategy. Expected to be up and running in 2025, the Barrow Green Hydrogen scheme is the first green hydrogen scheme worldwide for the business. It will initially feature a 35 megawatt (MW) electrolyser which is expected to produce around 3,500 tonnes of hydrogen every year, and K-C has said the project will reduce 25,000 tonnes of greenhouse gas emissions annually – equivalent to taking 580 trucks off UK roads every year.

Oriol Margó, Sustainability Transformation Leader, K-C EMEA, says the plant is "a vital" initiative for K-C as a business: "We are making progress on our ambition to use 100% renewable energy in our UK and Ireland sites by 2030," he says. "Our partnership with Carlton Power E



Decarbonisation goal: K-C is aiming to halve its scope 1 and 2 emissions by 2030, and in the UK is aiming to be using only renewable energy at its sites by the same date

has the potential to reduce our reliance on natural gas by up to 30% across our UK manufacturing facilities.We understand that our scale and the power of our brands can help influence change if we can lead the way on decarbonisation projects. The nature of our industry is quite energyintensive, and we want to help our peers."

He adds that K-C has worked closely with the hydrogen industry to understand the roadblocks to commercialisation. "We are an energy intensive industry and can provide volume security if this helps to get projects off the ground."

According to Margó, the projects completed or under construction are expected to deliver a 76% reduction of K-C's scope 1 and 2 emissions in the UK by 2023, versus a baseline of 2015. "We need to deliver gas decarbonisation to achieve 100% decarbonisation, and hydrogen forms an important part of our strategy to achieve that," he says. "We understand the importance for us to lead in the development and deployment of effective decarbonisation strategies because as an industry we consume a lot of energy. This project is an exciting opportunity and demonstrates how cooperation among a wide set of stakeholders from business and government is critical to making green hydrogen commercially viable."

He says that as this is the first green hydrogen scheme worldwide for K-C, it will also be a tool for the business to see how the project works in Barrow first, but adds that "there's definitely potential for it to be used elsewhere if the market and regulation allow it. Our site in Barrow is a good test-case to see how feasible it would be to roll out across our other locations."

The hydrogen that this scheme will use will be locally produced by an electrolyser powered by renewable sources – primarily wind and solar power, which then splits water into hydrogen and oxygen. "The hydrogen is burned to produce the heat required to dry our tissue products, with steam as the only by-product. By 2030, we want to be using 100% renewable energy across the UK and Ireland."

K-C's global decarbonisation goal is to halve its scope 1 and 2 emissions by 2030, and in the UK it wants to be using only renewable energy at its sites by the same date. "We're making some great progress. In 2021 we signed a Power Purchase Agreement (PPA) with Octopus Energy here in the UK, which will lead to the construction of a new wind farm in South Lanarkshire. It was the first such agreement that we'd made outside of North America and will cover around 80% of our electricity needs for our facilities in Barrow, Flint and Northfleet. We are currently also working on additional exciting large-scale projects - so watch this space!"

Is this the future for the production of tissue paper? "All companies are different – some consume more electricity, while others consume more gas," he says. "Regardless, costs are going up for all businesses and introducing renewable onsite sources – connected through private wire or private piping like hydrogen and onsite solar – is not only a great contributor to our decarbonisation strategy, but also a good way of building resilience in terms of security of supply.

"Ultimately, companies should focus on energy efficiency and reducing their energy footprint as much as possible in order to maintain and improve performance, as well as affordability. Using less energy will mean that a company's energy transition will require a lower investment cost, and facilitate decarbonisation goals. However, the investment in decarbonising gas and electricity is intensive, so partnerships are essential."

The wind farm that is being built by Octopus Energy is due to be completed imminently, and he adds that the business will be making further announcements on that. "Combined with the green hydrogen scheme, we've got two substantial initiatives underway that we want to focus on.

"We're always on the lookout for initiatives that can support our aims of delivering 100% renewable energy in our internal operations in the UK by 2030. Being collaborative is crucial to this – cooperation between a wide set of stakeholders from business and government is the only way that these projects will be viable." AR

ANNUAL REVIEW 2022

As 2022 draws to a close, TWM asks figures from across tissue's global supply chain for their retrospectives on the year ... and predictions for 2023.



"Prices have also been increased to a level never seen during the last couple of decades."

Medhat Saleh, General Manager of tissue manufacturer Al Faris Paper Mill, Kingdom of Saudi Arabia (KSA)

From a prospective of tissue paper mill manufacturing in the Gulf Cooperation Council (GCC), looking back to the fourth quarter of 2021, everyone in our part of the world (MENA and the Far East) was surprised by the supply chain dilemma where most of the raw material supply has been much tougher than any time previously.

This has caused a severe negative impact from the supply-demand prospective, where demand has significantly increased as result of the lack of supply.

However, that was a negative aspect that was the catalyst for another implication. Prices have also been increased to a level never seen during the last couple of decades. A price war between paper suppliers hasn't previously existed, and I could claim that despite the less sold quantities, the profit margin has been amazingly satisfying.

It's very easy to confirm that claim – just look at the announced results of some of the initial public offering (IPO) companies in the GCC and we can understand how good it was compared to the similar period a year ago.

As usual, the main challenges for 2023 and onwards come with additional new capacities, and with a couple of new upcoming tissue paper manufactures in the GCC region and specifically in KSA, where there will be always a need for a strategical planning to keep not only the current positioning but also to make sure that your growth plan will not deviate.

Today, KSA has a new potential on all aspects, and the country is considered as one of the most important growing economies globally. You can easily notice massive changes which bring new economic leverage and generate a lot of opportunities.

Investors won't miss that opportunity. In terms of sustainability and environmental changes we've seen in the past year, the responsibilities are now much higher for the forest industry than paper mills, as many of the the severe environmental impacts in the paper industry comes from there. However, we as user of pulp share those responsibilities as well. Due to the regulations being released by the government, there are now legal obligations for the industrial sector, and this is resulting in the improvement of the general conditions related to environment.

AS USUAL, THE MAIN CHALLENGES FOR 2023 AND ONWARDS COME WITH ADDITIONAL NEW CAPACITIES, AND WITH A COUPLE OF NEW UPCOMING TISSUE PAPER MANUFACTURES IN THE GCC REGION AND SPECIFICALLY IN KSA, WHERE THERE WILL BE ALWAYS A NEED FOR A STRATEGICAL PLANNING TO KEEP NOT ONLY THE CURRENT POSITIONING BUT ALSO TO MAKE SURE THAT YOUR GROWTH PLAN WILL NOT DEVIATE.



In 2022, our key focus has been on mitigating the challenges related to supply chain logistics and ensuring that we can provide our customers the level of service, uninterrupted chemical supply, and product quality they expect. We successfully managed to avoid any force majeure situations that would have created disruptions for our customers by increasing our inventory of key feedstocks and finished goods. We were also able to close gaps in product shortage in the market for many customers by mobilising our resources to offer similar products or offering alternatives, e.g., GPAM products to replace PAE wet strength resins or synthetic dry strength resins for starch replacement.

Furthermore, the price of key feedstocks and increased logistics costs challenged us all in 2022. Our tissue customers recognise the impact of the global challenges and clearly see strategic relationships with suppliers who have well-equipped supply chain processes as a key component for their long-term success.

2023 will be another challenging year for the tissue market due to global inflation. Consumers' frustration with high prices for every day necessities will drive retailers to pressure their suppliers to keep prices down. As tissue and towel products are essential items for consumers, producers in the consumer tissue segment will also be under significant pressure to reduce costs. Tissue producers need to make sure that their suppliers bring a cost-effective benefit to their process. We see these challenges as opportunities for providing chemical products and services that help tissue producers improve their operational efficiency through savings in fibre, energy, or chemicals.

In terms of environment, every major

"European tissue demand and production are still expected to grow in the following years in both consumer and the AfH sectors. This will encourage tissue producers to investigate and invest in energy saving solutions."

Vladimir Grigoriev, Director, Applications and Marketing, Pulp and Paper, at chemical supplier Kemira

corporation including those in the tissue industry have a sustainability strategy driven by environmental concerns from consumers, and government regulations. In all regions, we see a continuing trend of increased use of recycled fibres and a new trend of using alternative fibres such as bamboo, bagasse, or straw.

Many corporations have an ambitious target of reducing or even eliminating fossil-based raw materials. To support this, Kemira has committed to develop and expand our biobased portfolio and to increase the share of biobased products from the current 12% to 40% by 2030. A year ago, we established a partnership with IFF (formerly DuPont Nutrition and Biosciences) to develop and commercialise unique biobased products using the polyalphaglucan chemistry derived from glycose. This development is long-term and the new products are expected in a few years. But already today, we can support our customers' sustainability goals with existing innovative technologies and help them maximise the use of recycled fibres, reduce energy consumption, and minimize water usage.

In 2023, our customers in the tissue industry will be further challenged to improve their process and raw material efficiency, and the ability to be proactive with these improvements will provide most value. The key to capturing this value in the papermaking process is taking full advantage of data with new digital technologies. Kemira has developed unique, real-time monitoring and control capabilities for chemical applications, which enable us to optimize and continuously improve our customers' processes. Digital solutions are also part of our sustainability strategy and we are actively working on automation and digitalisation of our internal manufacturing processes to improve efficiency and quality control.

In terms of global tissue growth, there are differences between the global regions, but we expect tissue to grow in most markets faster than GDP due to the increased focus on hygiene in the post-pandemic world. In North America, consumers have demanding end-use preferences regarding tissue quality such as softness, strength, and absorbency, which will drive the growth specifically in specialty chemicals serving the consumer tissue market. In South America, the tissue market is consolidating as the pulp producers enter the market, which creates opportunities for more cost-effective tissue products. Europe is under tremendous stress from the energy crisis which is heavily impacting the energy-intensive tissue sector, and has caused production curtailment.

Europe is under tremendous stress from the energy crisis which is heavily impacting the energy-intensive tissue sector and have caused production curtailing. However, European tissue demand and production are still expected to grow in the following years in both consumer and the AfH sectors. This will encourage tissue producers to investigate and invest in energy saving solutions such as digital technologies and online monitoring tools for tighter process control.

Asia will continue to see the greatest growth in tissue volumes. Overall, global inflation and economic slowdown will further move consumers to private labels and value brands, and this will put greater cost pressure on tissue producers and tissue chemical suppliers.

2023 WILL BE ANOTHER CHALLENGING YEAR FOR THE TISSUE MARKET DUE TO GLOBAL INFLATION. CONSUMER'S FRUSTRATION WITH HIGH PRICES FOR EVERY DAY NECESSITIES WILL DRIVE RETAILERS TO PRESSURE THEIR SUPPLIERS TO KEEP PRICES DOWN. AS TISSUE AND TOWEL PRODUCTS ARE ESSENTIAL ITEMS FOR CONSUMERS, PRODUCERS IN THE CONSUMER TISSUE SEGMENT WILL ALSO BE UNDER SIGNIFICANT PRESSURE TO REDUCE COSTS.



During 2021 and 2022, tissue paper converters have seen a very different environment from previous years, and there are several reasons for this. One of the most significant reasons is that there was a shortage of pulp and tissue paper jumbo rolls, which is reminiscent of the same case in 1994 and 1995 when the price of a ton of pulp exceeded \$1,000 and a ton of jumbo rolls reached \$2,200, and then after a few years things returned to normal. This is currently negatively affected the growth of the tissue paper converting factories, limiting their development and growth. In particular, some factories could not operate their machines at their full capacity due to the lack of tissue paper jumbo rolls.

As a result, the percentage of profit for tissue paper converters during these years has been lower than in previous years to keep their market share. However, I believe that in 2023 the situation of tissue paper converter will change and will be for their benefit. They will achieve growth and profit due to the abundance of pulp and tissue paper jumbo rolls.

As for the opportunities and challenges for the year 2023, there will be growth for tissue paper mills and as soon as there is enough pulp supply, this will also reflect positively on tissue paper mills and their profit rate.

Tissue paper converter will then have many choices from several sources with better terms and better prices, which will be reflected in their profit margin.

All the tissue paper converters that have a strong vision and business development mind set are working to develop themselves for the coming year so that they are ready for the abundant time of tissue paper jumbo rolls that will arrive soon. Note that the decline in the prices of raw materials does not reflect the price of the final product, and this opens horizons and opportunities for new projects, even for old factories, to be able to develop themselves and their machinery, equipment and increase production capacity.

"We believe that it will be the year of tissue growth and prosperity, especially in the Middle East."

Ali El Abdallah, Chief Executive of tissue converting machinery and tissue paper machinery supplier Amaco Group, Lebanon.

As for the world's paper consumption and the trends we are seeing across markets, there is still a lot of variety from one country to another. In Europe for example, the rolling system is the leader, but in the Middle East regions, they follow the V interfolding system more, noting that in recent years the rolling system has witnessed significant growth in terms of maxi roll, centre pull, kitchen towel, industrial and household, and it has grown significantly more than previous years, especially since the folding system is more for facial use. And we see facial tissue in the soft pack more than the carton duplex, which has been noticeably declining in recent years.

Therefore, most of the tissue converters in the Middle East and the Gulf are producing facial tissue in soft packs. This increase in soft pack facial tissue production affects negatively on the production on carton duplex facial tissue production. Additionally, the interfold hand towel market is witnessing significant growth in the region and its consumption is increasing in institutions. However, a few tissue converters in the Middle East and North Africa produce towels with double embossing unit and lamination and that consumption will increase in the coming years, while the manufacture of hand towel with single embossing and without lamination is more popular recently. This is due to the fact that it is the first towel product in the market and due to the price and cost factor.

For Egypt, for example, in the past few years the main consumption was pocket tissue, and with the development in the growth rate of tissue paper consumption and the increased number of factories and machines in the country that have interfolded machines, this reflected the increase in the consumption of interfolded tissue and reduced the consumption of pocket tissue.

Note that in general the consumption of tissue paper increased with Covid-19 and the situation of tissue converters and tissue mills was excellent in 2020. In terms of environmental initiatives, we at Amaco have founded an association concerned with these matters for more than 15 years, called the Development For People And Nature Association (DPNA) and where I am a permanent board member. This association's role is to develop environmental ideas for all people, especially in our small country and the region. It is also conducting courses for company owners and working on environmental awareness, especially on the waste that comes from paper mills and how it can be used in a correct and beneficial way that is of benefit for the sustainability of the environment in the future.

Regarding developments in digital technology and e-commerce, the Corona pandemic helped Amaco and gave us a big push forward in this matter. It also gave us an idea of how to help our customers install and operate their machines online, when previously we used to go to the customer's country to do this.

Due to the Corona pandemic, we became obligated to keep pace with digital technology, and we developed our team on this basis to be efficient in carrying out the task successfully. We have been able to install several machines in one day in different countries and this has helped us a lot and saved us time to increase our business. Note that with the decrease in the percentage of Corona, Amaco technicians have returned to visit our customers, but the follow-up is still advanced now that it can also be carried out online.

In terms of expectations for the year 2023 and 2024, we believe that it will be the year of tissue growth and prosperity, especially in the Middle East. Up until the end of 2023 there will be an increase in production in the Gulf countries, with around 550 tons per day from the start-up of three new projects. There are also serious ideas that can turn into a reality for projects in the Arab countries and the region, and all this leads to an abundance of tissue paper jumbo roll.

Note that there are many tissue paper mills exporting to many countries of the world due to the decrease in the cost of production, and this has given an opportunity to create many new projects and factories in any region.

ALL THE TISSUE PAPER CONVERTERS THAT HAVE A STRONG VISION AND BUSINESS DEVELOPMENT MIND SET ARE WORKING TO DEVELOP THEMSELVES FOR THE COMING YEAR SO THAT THEY ARE READY FOR THE ABUNDANT TIME OF TISSUE PAPER JUMBO ROLLS THAT WILL ARRIVE SOON.



"There will be growth in all countries that have not been impacted by the geopolitical situation ... especially in Latin American and Middle East markets."

Daniele Checcacci, Sales and Marketing Director at packaging machinery supplier IMA TMC, Italy

The events of 2022 created an economic alert that slowed investment globally. The crisis that has been going on since 2021 on electronic components has impacted the deliveries of micro-components, which in turn have had an impact on the business plans of our customers.

Europe has been mostly affected not only by the economic situation, but also by the geopolitical one. The increase in raw material prices and energy costs has had a significant impact on investments in the paper industry. We expect this situation – although already improving – to persist until the second quarter of 2023.

The expectations for 2023 are to return to the regimes of the second half of 2021, which was an important year of post-Covid recovery for our company and customers, and full of opportunities. For the upcoming year we foresee important investments for the promotion of our complete lines of primary and secondary packaging up to palletisation, as well as growth in the personal care sector where we are present with our solutions for the sanitary absorbency market. Last but not least, we will continue our commitment to sustainability, developing new and reliable solutions for recyclable packaging.

In recent years, companies' commitment to sustainability has intensified, but in the tissue market IMA TMC was the first company to invest in sustainability projects, introducing the first line of sustainable primary packaging in 2018. Since then, continuous investments have been made in research and development as part of the IMA ZERO project: the sustainability programme of the IMA group, declined in the IMA NoP project, which is expressly dedicated to plastic-free packaging. The new materials for sustainable packaging are tested in IMA's OpenLab: a network of laboratories which have tested over 3,800 new generation films since 2017.

The digital transition has also undoubtedly impacted our business in a positive way. With the introduction of digital services (such as production monitoring platforms, digital training on the machines and the possibility of remotely performing FAT and assistance on the machine) we have improved the relationship with our customers, providing them with advanced technological solutions and easier production management, increasing the quality of the finished product and improving manufacturing results.

Our projections for 2023/2024 are that there will be growth in all countries that have not been impacted by the geopolitical situation. We expect growth especially in the Latin American and the Middle East markets.

THE EXPECTATIONS FOR 2023 ARE TO RETURN TO THE REGIMES OF THE SECOND HALF OF 2021, WHICH WAS AN IMPORTANT YEAR OF POST-COVID RECOVERY FOR OUR COMPANY AND CUSTOMERS, AND FULL OF OPPORTUNITIES. FOR THE UPCOMING YEAR WE FORESEE IMPORTANT INVESTMENTS FOR THE PROMOTION OF OUR COMPLETE LINES OF PRIMARY AND SECONDARY PACKAGING UP TO PALLETISATION, AS WELL AS GROWTH IN THE PERSONAL CARE SECTOR WHERE WE ARE PRESENT WITH OUR SOLUTIONS FOR THE SANITARY ABSORBENCY MARKET.

COVID-19 RESTRICTIONS HAD A PROFOUND EFFECT ON PRODUCT PACKAGING, AND RADICAL CHANGES IN THE SUPPLY CHAIN ARE UNDERWAY

Insight + Action founder Susan Cornish expands on her keynote speech at the TW Bangkok conference earlier this year to reveal the background to a surge in interest in sustainability impacting global paper packaging markets.



Surge in interest: the industry is seeing more and more brand owners committing to sustainability



Susan Cornish Insight + Action founder

Paper Packaging: Design for sustainability

In 2022, the key trends affecting

packaging can be summarised as follows:

- Impacts of the pandemic and the rapid growth of e-commerce
- Changing brand owner attitudes toward sustainability in packaging
- Changing consumer attitudes toward sustainability.

Pandemic impacts on packaging

Changes up and down the supply chain have included:

- Consumers avoided stores and shopped online. In a 2020 survey, two thirds agreed they "try to spend as little time in-store as possible".
- Importance of the hygienic aspect of packaging increased.
- 'Connected packaging' emerged, where consumers learn about the product through digital sources, so there is no need to touch the product even if they go into a store to buy it.
- Labour shortages and social distancing

led to more automation in plants and warehousing.

- In the USA: 'curbside pick-up' exploded and retailers added 'ship to store' delivery, which led to demand for smaller shipping boxes, and smaller packaging equipment to fit in store back rooms.
- With more boxes to ship, e-commerce retailers focused on reducing empty space in the box and improving efficiency.
- Supply chain problems grew exponentially, and are still with us.

Brand owners are committing to sustainable packaging

The industry is seeing more and more brand owners committing to sustainability. All of the 25 largest Consumer Packaged Goods (CPG) companies have goals to increase recycled content, minimise packaging, and develop reusable packaging. A full 80% are working toward fully recyclable packaging for all products by 2030. **—**

Ξ

Among the top five CPG companies*: Nestlé has targeted using 100% recyclable or reusable packaging and reducing its use of virgin plastics by 33% by 2025. Procter & Gamble aims to use 100% recyclable or reusable packaging and reduce virgin plastic in packaging by 50% by 2030. PepsiCo, Inc. says it will use 100% recyclable, compostable or biodegradable packaging and reduce use of virgin plastic for beverages by 35% by 2025. Unilever has said 100% of plastic packaging will be fully reusable, recyclable or compostable and the company will also increase its recycled content in plastic to 25% by 2025. Anheuser-Busch, InBev indicates that by 2025, 100% of products will be in packaging that is returnable or made from majority recycled content.

*Source: Consumer Brands Association, 2022.

Consumer views on packaging and sustainability

In a 2022 survey done by Insight + Action, consumers' level of agreement with 11 sustainability attributes increased significantly (by 10-20%). Three of the top four attributes are things consumers

AMONG THE TOP FIVE CPG COMPANIES: NESTLÉ HAS TARGETED USING 100% RECYCLABLE OR REUSABLE PACKAGING AND REDUCING ITS USE OF VIRGIN PLASTICS BY 33% BY 2025. PROCTER & GAMBLE AIMS TO USE 100% RECYCLABLE OR REUSABLE PACKAGING AND REDUCE VIRGIN PLASTIC IN PACKAGING BY 50% BY 2030. PEPSICO, INC. SAYS IT WILL USE 100% RECYCLABLE, COMPOSTABLE OR BIODEGRADABLE PACKAGING AND REDUCE USE OF VIRGIN PLASTIC FOR BEVERAGES BY 35% BY 2025.

expect 'companies' to be doing. The three attributes with the lowest agreement levels reflect consumers' low level of knowledge about recycling and the environment.

In Asia, consumers are even more concerned that packaging should be sustainable, and, crucially, they are willing to pay for sustainable packaging. There is also general agreement across countries on what is not sustainable, i.e. packaging that combines materials and aluminium foil wraps. Paper, glass, and plastic film made from renewable, compostable materials are considered the most sustainable types of packaging by most countries.

Consumer attitudes vs. behaviour: Does sustainability drive purchasing behaviour?

A 2022 survey by the International Food Information Council found that price is a more significant driver of food and beverage purchasing decisions than sustainability. For 68% global consumers, price is a key driver while for 39% sustainability is important.

Choosing between three products, from the most expensive to the most eco-friendly, 15% said they would purchase the most sustainable option; 46% would pick the midpriced, somewhat eco-friendly option; 39% would select the lowest-priced, not very sustainable product. While consumers may 'talk the talk' when asked about attitudes toward sustainability, price, value, and product benefits such as taste (for food and beverage) still drive purchases.

With growing inflation, a key issue here is whether the market will see a slowdown or decline in the recent growth of interest in purchasing sustainable products and packaging.

Industry implications of more paper packaging

Fisher International expects that virgin and recycled paperboard demand will increase significantly over the next five years as paper replaces plastic for foodgrade packaging. Their estimate is that if 10% of plastic beverage cups were replaced with paper cups globally, this would require 588,000 tons (all tons here are US short tons) of cup stock, a 20% increase over the 2021 global capacity of 2.9m tons.

If 5% of plastic packaging was replaced with paper, this would consume 1.5m tons of paper. Paperboard capacity increases of 12m tons are expected globally over the next four years, but most of this (10 million tons) is outside of North America and Europe.

Key questions regarding a shift from plastic to paper packaging include:

Consumer Views on Packaging & Sustainability

- Overall, huge increase in agreement with all issues (10-20%)
- Three of the top 4 are things 'companies' should be doing; The 3 lowest reflect consumers' low knowledge levels





IS MAKING ADJUSTMENTS TO YOUR YANKEE COATING WORTH THE RISK?

In many mills, the Yankee coating is a legacy application that hasn't been significantly changed in years. It's viewed as too risky to mess with–particularly with market demand and internal pressures pushing you to make more tons more efficiently. As such, mills often eschew upgrading the Yankee coating in favor of wet end or converting changes. Even with these approaches adding value, by avoiding a potential short-term disruption of a Yankee coating trial, you may have locked in sub-optimal Yankee coating conditions for the long term.

What if you could understand how different chemical packages will perform within your unique process?

With Buckman's proprietary lab testing approach, you'll see how we stratify chemical products and predict performance based on key properties, such as wet tack, set speed, nip robustness, hardness, and softness at certain temperatures. Using our database of tissue machine run parameters correlated to key Yankee coating properties, you can identify the best-possible process conditions for your choice of Yankee coating package.

Make data-based decisions with confidence

With this scientific data laid out in clear, easy-to-read charts, you can visualize the link between your process conditions and our adhesive properties. As a result, you can make data-based decisions with confidence that your coating solution will deliver concrete, measurable improvement.

> To learn more, contact your Buckman representative today. Or scan the QR code to visit buckman.com.





CARLSBERG IS TESTING A FIBRE BOTTLE FOR BEER ACROSS EIGHT COUNTRIES IN EUROPE. THE PACKAGING CONSISTS OF A WOOD FIBRE OUTER SHELL AND A PLANT-BASED, RECYCLABLE PEF (POLYETHYLENE FURANOATE), POLYMER LINER. PEF HAS SUPERIOR BARRIER PROPERTIES HIGHER MECHANICAL STRENGTH THAN CONVENTIONAL PLASTICS.

- How quickly will consumers shift to demand renewable packaging materials?
- Is there sufficient fibre from sustainably-managed forests to support growth in pulp and paperboard?
- Will alternative fibres like bamboo, bagasse, wheat straw contribute significantly to fibre supply?
- If pulp demand increases, would pulp pricing increase so much that plastic replacement with fibre becomes cost-prohibitive?

Replacing plastic with paper: Product examples

Carlsberg is testing a fibre bottle for beer across eight countries in Europe. The packaging consists of a wood fibre outer shell and a plant-based, recyclable PEF (polyethylene furanoate), polymer liner. PEF has superior barrier properties and higher mechanical strength than conventional plastics.

A tequila produced in Mexico and being launched in Sweden, Buen Vato, has a container is 94% recycled paperboard and is lined with a metalised PET pouch. The label is printed on the paperboard so no additional labels needed. The primary motivation for the new bottle is to reduce weight and the carbon footprint of shipping across the Atlantic, and distributing across Europe. In May 2022, Kraft Heinz announced the company is partnering to develop a paper-based, renewable, and recyclable bottle for its ketchup. While some paper bottle technologies use a plastic liner for barrierbottle is sprayed on the inside with a proprietary food-grade coating, customized to handle either oil- or aqueous-based products. The bottle is expected to be curbside-recyclable.

Conagra introduced several new brands of frozen dinners in 2020 that use plantbased fibre instead of plastic for the bowls. Its carbon footprint from manufacture of the bowls is reduced by 50% to 70% across select product lines and the expansion will help to decrease Conagra's carbon footprint by 34,117 metric tons.

In 2022, Bumblebee launched new recyclable paperboard packaging for its multipack tuna cans to replace shrink wrap. The paperboard is made of 100% recycled material with at least 35% post-consumer content and is FSC-certified.

Molson Coors will invest \$85m to eliminate plastic rings from Coors Light, switching to cardboard-wrap carriers instead. The switch will be extended to its entire North American portfolio by the end of 2025 and is expected to save 1.7m pounds of plastic waste annually.

In January 2021, Nestlé announced that its Smarties chocolate candy is moving to recyclable paper packaging, worldwide.



For the package in Canada, a 'tough' paper grade is used, then overlaquered on the outside and with a water-based dispersion coating. Considerable testing was required in real world conditions, during transportation, on pallets in distribution centres, and on store shelves with consumers, to ensure the packaging would perform.

In Hong Kong, Nestlé is moving Kit Kat stick ice cream packaging from plastic to paper that will be 100% pure pulp, FSC-certified. This will reduce plastic consumption and boost recyclability and supports Nestlé's goal to achieve 100% recyclable or reusable product packaging by 2025 and reducing the use of virgin plastic by one-third.

Four of Procter & Gamble's (P&G) shampoo brands will offer shampoo and conditioner bars in a size equivalent to 500ml liquid bottles. This will contribute to P&G's goal of reducing virgin plastic use, and will remove the equivalent of 300 million plastic bottles on an annual basis. Ariel laundry detergent, a European Procter & Gamble brand, will offer its All-in-1 Pods in a recyclable cardboard-based box. If all Ariel users in Europe switched to the new box, up to 6,500 tons of plastic would be saved per year.

In 2018 Proctor & Gamble developed the Tide Eco-Box to replace the large plastic bottle which frequently was damaged in e-commerce transit. It contains 60% less plastic than the traditional rigid container. It has a plastic liner like a wine box, but is lighter and smaller, saving space in delivery trucks, lowering shipping costs, and improving sustainability.

US E-Commerce vs. Total Retail Sales Growth

In the US, e-commerce grew by 31.8% in 2020. A Google survey showed that in 2021, over 40m new internet users in South East Asia.

How does e-commerce affect packaging used in shipping? In the early days of e-commerce, brands would send products to the online retailer's warehouse in the same primary packaging the consumer would find at the store.

Packaging that was designed to catch the shopper's eye in-store would often not survive the warehouse and/or shipping. Traditional retail has five-six touchpoints between manufacturer and consumer, while e-commerce has 20-30 touchpoints which greatly increases the number of times the product will be dropped or crushed against other packages.

ixitlssues

Consumers frequently 'bracket', which means they order five-six items knowing that one will be right and they can return the rest. 20-30% return rates are typical for e-commerce in comparison to 8-9% for in-store 'bricks and mortar' purchases

Shipping damage is a major issue and 20% percent of e-commerce product returns are due to shipping damage. A damaged product can result in loss of a customer and is why shippers 'over-box' on secondary packaging, to ensure the product is not damaged en route.

Strategies shippers use to optimise secondary packaging include:

- Lightweighting Focus on using lighter, thinner, stronger versions of all types of packaging for the product, primary, and secondary packaging.
- Rightsizing Of shipping box relative to the product, to reduce wasted space and dunnage.
- Fit-to-Product Technology Produces secondary packaging customized to exact size of product.
- SIOC (ship-in-own-container) Brands redesign product packaging so it can survive shipping without secondary packaging. Used first for large products.

For example, in North America and Europe, Amazon reduced outbound shipments in corrugated boxes from 73% to 36% of all items shipped from 2016 to 2022 (half year). Between 2016 and 2019 Amazon used 1.4 million fewer boxes, reduced packaging waste by 27%, and increased use of mailers from 27% to 47% of items shipped.

More paper, less plastic: is the paper packaging recyclable?

Old corrugated containers (OCC) is the most important feedstock for US recycle mills, followed by Coated and Uncoated Recycled Board. Recovered paper grades procured vary with the output product of the mill. Tissue mills buy a wider of high grade paper and use more different types of paper packaging. Mills see very little molded fibre or aseptic and refrigerated food and beverage gabletop cartons.

The desirability of each type of paper packaging is up for debate. From the mill's perspective, the least desirable packages are cartons, anything with food residue, and paper ice cream tubs. Most mills can handle frozen food boxes and cups to some degree, provided the volume is not too large. Consumer research conducted by Insight + Action in in 2020 and 2022 assessed the importance of sustainable product attributes in the bath tissue category. The study determined that:

- Overall, sustainable product attributes are not very important in the bath tissue category.
- Only a small segment of consumers indicate that attributes such as "made from unbleached fibre", "made from sustainably managed forests", "made from recycled fibre", "packaged in paper not plastic", and "no core/tube is used" are important to them when they purchase bath tissue.
- Good value, soft, and strong are still the product attributes that drive the category.
- However, trial of recycled brands increased from 2020 to 2022 as did the percentage of consumers who are willing to try tissue made from alternative fibres such as bamboo, wheat straw, eucalyptus, or bagasse.
- Based on the significant increase in bath tissue buyers' agreement with broader sustainability attitudes from 2020 to 2022, we expect the 'green' segment in this category to continue to grow.

US MILLS ARE SPLIT ON THEIR APPROACH TO CHANGE AND INCREASE TOLERANCE OF PACKAGE TYPES. SOME SAY OUTRIGHT NO, NOTHING REALLY WILL CHANGE THEIR PERCEPTIONS. OTHERS POINT OUT THAT WHILE PACKAGING WITH COATINGS, WET STRENGTH, ETC. CAN BE HANDLED TO A DEGREE, DOING SO INCREASES COST, SLOWS PRODUCTION.

A recent paperboard packaging council study found that 70% of frozen food cartons in North America are recyclable grades of uncoated board without coatings, wet strength, and other additives. Molded fibre protective/dunnage is acceptable to most mills.

US mills are split on their approach to change and increase tolerance of package types. Some say outright no, nothing really will change their perceptions. Others point out that while packaging with coatings, wet strength, etc. can be handled to a degree, doing so increases cost, slows production. Some mills/mill companies are more open to new package types. For some, new pulpers, and upgraded cleaning and screening systems are on the way and will help handle an increase in 'strong fibre' consumption, packaging that takes more time to break down.

A strategy to make Mixed Paper more palatable is to load it in with OCC (called a 'hard pack' mix) which makes new package types such as foodservice material easier to blend in.

Technological change at US recycle mills is more incremental than breakthrough. Many old stock preparation systems in Asia and North America could be upgraded. Europe has more continuously improved mill equipment, while the US has many batch pulpers with old style detrashing that could be upgraded to continuous systems.

There is increasing ability to process Mixed Paper, with better stock preparation systems in the US. There are many recent mill retrofits in the US, and most new mill projects will have stock prep systems that can handle Mixed Paper, with capability of handling a wider range of fibrebased packaging

There are still many opportunities for yield improvement and energy savings. More sophisticated quality measurement systems for recovered paper such as those being developed in Europe would be beneficial.

What brand owners should do: How to make paper packaging more recyclable

Based on recent survey research with mills:

- Do not combine fibre-based packaging with other materials such as poly-coated, metals, and plastics of any types.
- Avoid films, shrink wraps, coating, embossing, and wax.
- Use a single layer, not multi-layer. Use paper labels on paper packaging.

ADVERTISER'S INDEX

IBC 37 IFC



Baosuo	www.baosuo.com
Buckman	www.buckman.com
Convermat	www.convermat.com
Körber Tissue	www.koerber-tissue.com

Tissue World Dusseldorf	www.tissueworld.com	23
Tissue World Magazine	www.tissueworldmagazine.com	OBC
Toscotec	www.toscotec.com	15
Trebor	www.trebor.com	9

SUBSCRIPTION

Tissue World Magazine is free to qualified members of the tissue industry. Please visit the following link to subscribe: https://www.tissueworldmagazine.com/print-subscription/





YD-PL450C Non-Stop Toilet Roll/Kitchen Towel Rewinder Line

Four Side Position Embossing、 4D Embossing

1

BaoSuo Enterprise Provide You The Turnkey Solution For Tissue Production





Converting Machine

A. A.



Packing Machine



Baosuo Paper Machinery Manufacture Co., Ltd. Tel+83=757=86777529 E=mailimaster@baosuo.com Hittps://www.baosuo.com

TISSUE WORLD

THE INDEPENDENT NEWS PROVIDER FOR THE GLOBAL TISSUE BUSINESS

ITALY: THE 2022 BOUNCE

Tissue World Magazine is the leading, independent publication and online resource for the global tissue industry. We're dedicated to publishing essential information, analysis, and opinion on breaking trends in business, technology, regional developments and sustainability, to keep tissue professionals up to date.

Connect with your community, differentiate your brand and grow your business globally with the leading publication for your industry!

From print through digital, with webinars, whitepapers and more, download the media pack here:



Get in touch today to discuss the opportunities and solutions: info@tissueworld.com



j informamarkets

Join the conversation: f in 🕑 🕩