May/June 2024 | Issue #3

Tissue World

Magazine

The independent news provider for the global tissue business

CHINA

Overcapacity: Call for company collaboration and supply chain partnerships

Plus

AFRICA: REGIONAL REPORT
Leading nations finding value growth

TISSUE WORLD ISTANBUL
The global premier event returns

TECHNICAL THEME
Stickies – four key solutions
Transformative TAD

BAROMETER REPORT: SPECIAL FEATURE
Converting progress, HoReCa recovery, advances in net zero production target

EXITISSUES
Will Covid panic-buying damage tissue's reputation for quality?

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.

convermat CORPORATION

www.convermat.com
T: 516.487.7100
F: 516.487.7170

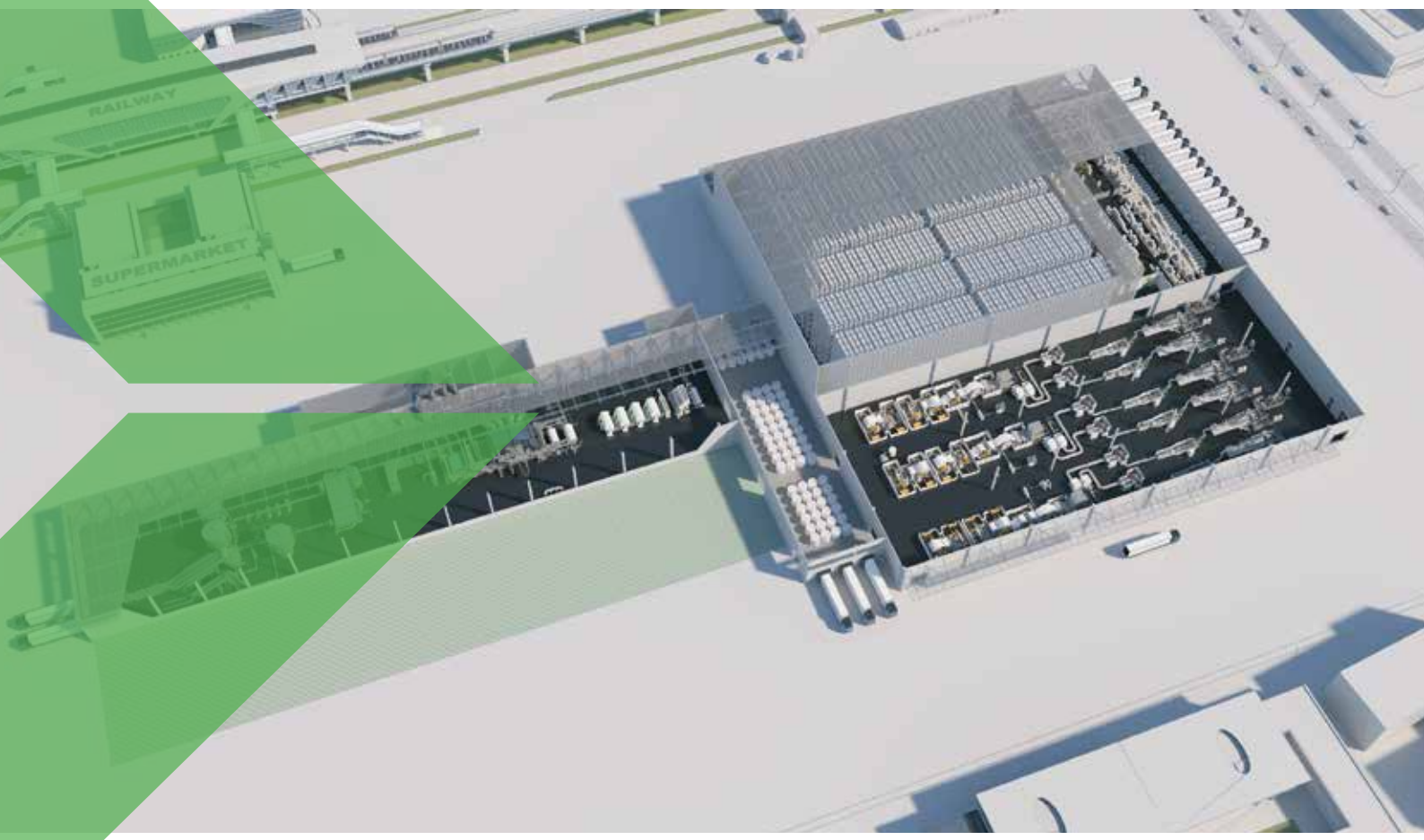
FSC
www.fsc.org
FSC C113240
The mark of responsible forestry

IN THIS ISSUE...

Cover: Image showing overcapacity in the Chinese tissue market, which has resulted in the country's tissue association CNHPIA calling for rational competition and capacity collaboration.

Image by Stefano Vuga, Founder, PurplePrint Creative, Spain/ Italy, www.purpleprint.eu

Driving tissue innovation forward



Valmet offers the most complete and integrated portfolio of process technologies, services and automation systems for the entire tissue value chain.

With a holistic approach and extensive know-how, covering stock-preparation, tissue machines, rewinders, converting and packaging, we provide solutions for optimizing the complete tissue making process.

Explore our comprehensive tissue making and converting solutions at **www.valmet.com/tissue**

Valmet FORWARD

Call for rational competition and capacity collaboration ... from China's own tissue industry association

Helen Morris, Senior Editor, Tissue World Magazine

It has been described as the hottest dispute in global trade – overcapacity.

US and Chinese trade talks earlier this year focussed on excess capacity under the broad category of green industries … electric vehicles, solar panels, and batteries. They could well have included tissue.

The core criticism from the West is that state-led support for manufacturers, coupled with depressed domestic demand, is pushing excessive Chinese supply onto global markets. The nature of 'support' is itself disputed. China denies subsidies, stating its industries are simply more competitive, driven by innovation and complete supply chain systems. The West points to associated support including cheap loans, huge infrastructure investment and fully-integrated supply chains. Either way, the effect on prices is sharp.

TWM's *MarketIssues* carries the CNHPIA's latest annual assessment of tissue's performance. As expected, the 2023 figures are uniquely Chinese. After necessarily taking the foot off the pedal during Covid, manufacturers essentially pushed it back down again with renewed vigour – 35 companies bringing 68 machines online across 15 Chinese provinces.

The result? 2023 total capacity is expected to exceed 21m tpy. Publicly revealed projects for 2024 have already exceeded 12m tpy. Price competition has intensified, while profitability decreased. Export figures dramatically increased – volume up 42.47% to 804,200tpy, value up 26.80% at $1.762bn.

The report carries its own warning on excess-production, while managing to describe the phenomenon as both "temporary" and "persistent." "Consolidation and collective growth" could be achieved "through capacity collaboration and supply chain partnerships among companies. The industry enterprises should adhere to rational competition and jointly promote sustainable development of the industry." It makes for a fascinating read.

AFRICA: A HUGE POTENTIAL STILL OUT OF REACH, BUT WITH LEADING NATIONS FINDING VALUE GROWTH

The take-up of tissue products across Africa – less than 1kg annually – has not grown as expected. Where it occurred, value growth came at the expense of volume growth. That is the continental average. But as TWM's *Regional Report* makes clear the range of market performance differs considerably.

Economic diversity is wider in Africa than in any other continent, not least because it has more distinct nations ... 54 in total. The nine best performers are those whose well placed consumers can draw on an average per capita GDP of more than $15,000 and are therefore the nations likely to see the buying of tissue products featuring more prominently on shopping lists.

Yet even the top economies are beset with deep and various problems, so better news on income is to some degree off-set, and demand growth slows. Within this broad picture, TWM's reports examine every level of prospects and performance, and finds nothing but energy, enterprise, and optimism, mostly where urbanisation is increasing, at companies dealing with the day-to-day running of the mills.

EDITORIAL HEADQUARTERS

Informa Connect
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
Gerry Dunphy: gerry.dunphy@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@gova.com.br

China, Hong Kong & Macau
Pinky Zhang
T: +86 020 3895 1630
Pinky.Zhang@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 Connect
240 Blackfriars Road, London, SE1 8BF, UK
Tel: +44 (0)20 7017 5000
info@tissueworld.com

Subscription online at
www.tissueworldmagazine.com

China: Tissue paper industry 2023

HOW POST-COVID CHINA GEARED UP AGAIN – WITH 68 NEW MACHINES PUT INTO OPERATION AT 35 COMPANIES IN 15 PROVINCES

In 2023, China's tissue paper industry resumed normal operations and development after the Covid-19 pandemic. However, whilst the new capacity is less than that of 2022, the issue of temporary overcapacity in the industry persisted, leading to intense market competition. Wood pulp prices experienced significant fluctuations, putting cost pressures on tissue paper manufacturers. Faced with challenges and difficulties, industry players actively sought breakthroughs through by introducing advanced technologies and equipment, product development, and marketing innovations.

Persistent problems of excessive production capacity resulted in intensified price competition, decreased profitability and dramatically increased export figures showing volume year-on-year up 42.47% to 804,200tpy, and value at $1.762bn, a 26.80% growth. Here, the China National Household Paper Industry Association (CNHPIA) discusses how the market reacted – and what the future could hold.

PART 1: PROJECT OPERATIONS

In 2023, the total new capacity was more than 1.7m tpy. This new capacity is less than that of 2022. A total of 35 companies in 15 provinces launched new capacity and a total of 68 tissue machines were put into operation. Domestic tissue machines dominated the new capacity, with 54 domestically produced machines mainly concentrated in large and medium-sized enterprises and 14 imported machines.

In 2023, among the 12 major companies in the tissue paper industry – including Hengan, Vinda, C&S and others – there were significant additions to the production capacity through newly launched projects. Hengan, for example, introduced 160,000tpy of new capacity into the market, Taison Group 200,000tpy, Lee & Man 255,000tpy, Asia Symbol 225,000tpy, Vinda 35,000tpy.

Additionally, in 2023 several industry-leading companies including Hengan, Gold Hongye, C&S and Libang announced new projects. This new capacity was about 3m tpy in total.

PART 2: REVENUES OF INDUSTRY ENTERPRISES

In 2023, the revenue of companies in the tissue paper industry showed some recovery, but the gross profit margins declined.

From the operating data in quarterly performance reports released by Hengan, Vinda, and C&S, all three companies experienced varying degrees of increase in sales revenue during the reporting period. However, their profit margins declined to different extents.

For Hengan, in the first half of 2023, sales revenue from the group's tissue paper (including wet wipes) business surged by approximately 22.7% to approximately RMB7,170m, accounting for approximately 58.7% of the group's overall revenue. Gross profit margin fell to approximately 17.7%. For Vinda, in the first three quarters of 2023 total revenue increased by 5.4% (10.6% on a constant currency translation) to HK$14,810m, of which HK$12,276m came from tissue paper (including wet wipes) business. Overall gross profit margin fell to approximately 25.8%. For C&S Paper, in the first three quarters of 2023 operating revenue (mainly tissue paper) was 6.823bn yuan, up 11.60% year-on-year. Net profit attributable to shareholders of listed companies was RMB 165m, down 39.74% year-on-year.

Additionally, during 2023 CNHPIA also conducted research on the operational situation of some small and medium-sized enterprises. It was found that after the Covid-19 pandemic, these companies were able to resume normal production and operations.

Furthermore, due to a general decrease in pulp prices in the first half of the year, these enterprises in the industry experienced some relief in raw material costs, leading to an improvement in their capacity utilisation compared to 2022. Taking the Baoding region as an example reveals that the overall start-up rate of paper enterprises in the region has been relatively high since 2023.

PART 3: RAW MATERIAL AND PRODUCT PRICES

According to our research data, the spot prices of wood pulp in the domestic market showed an overall downward trend in 2023 compared to 2022. Prices reached their lowest point in May 2023, and gradually increased afterward. However, the average pulp price for the entire year was lower than that of 2022. It provided some relief and helped reduce cost pressures for tissue paper companies to some extent.

Prices of bamboo pulp and bagasse pulp in the domestic market tend to follow the fluctuations of wood pulp spot prices. Since 2023, the prices of domestically produced non-wood pulps have shown an overall downward trend. The price of bamboo pulp reached its lowest point at 4,900 yuan/ton in April and May, while the price of bagasse pulp hit its annual low of 3,850 yuan/ton in August. Since then, there was a slight rebound in prices.

In 2023, raw paper prices followed the fluctuations of pulp prices. For example, the average price of bleached wood pulp parent tissue rolls in Hebei province reached its annual low of 6,650 yuan/ton in May and June, 2023, and then began to rise.

PART 4: INDUSTRY PRODUCT UPGRADES AND INNOVATION

These mainly focused on two aspects: applying new technologies and equipment to develop differentiated products and enhancing the performance of these products.

For instance, leading companies introduced improved products with better bulk and softness.

For example, Hengan's Mind Act Upon Mind, Gold Hongye's Breeze, Yusen's Rain Forest, and Vanov's BABO. These new products provide a softer, more comfortable touch and enhanced water absorption and wiping performance. The second aspect focused on innovative packaging formats to enhance convenience and promote environmental sustainability.

Portable packaging includes multi-functional wall-hanging tissues, with brands such as Mind Act Upon Mind, Breeze, Libang, Rain Forest, Botare.

Another aspect of innovative packaging formats is the creation of environmentally-friendly products. For example, the CNPPRI developed alternative paper-based packaging materials to replace plastic packaging for individually wrapped sanitary napkins

The Clouds Soft range: packaging was enhanced for convenience

and soft-pack facial tissues, which have been applied. Breeze pioneered the Chinese tissue industry's first "Zero Plastic" tissue, which replaces plastic with paper in its product packaging.

PART 5: NEW TECHNOLOGY AND NEW EQUIPMENT IN THE INDUSTRY

First, in the field of tissue machines, the updates of new technologies mainly focus on two aspects. Domestic companies introduced the latest TAD and TAD-like tissue machines, bringing new changes to the domestic market. This included:

- Hengan introduced two Toscotec-supplied TAD tissue machines, becoming the first domestic tissue paper company to import TAD machines. The first machine went into production in 2023, and the second machine is planned to start production in 2024. Hengan also introduced two Valmet-supplied Advantage QRT (TAD-like) tissue machines, both of which started operations in 2023 and mainly produce high-quality facial tissues and kitchen towels.
- Vinda successfully put into operation four Valmet hybrid (TAD-like) tissue machines in 2021, followed by a fourth in 2023.
- In 2023, Guangxi Lopie Paper put into operation a Baotuo-supplied TAD tissue machine.

Secondly, low-carbon technology for equipment continues to develop. Andritz introduced the PrimeDry Hood E electric heating hood for tissue machines. Additionally, new technologies in processing equipment are constantly being introduced, including:

- Baosuo launched the fully automatic facial tissue production line.
- Zhidesheng provides diversified embossing solutions through various embossing groups.

- One Paper introduced a fully automatic facial tissue folding machine.

During the 13th Five-Year Plan period, the domestic production and technological level of key core equipment in the tissue paper industry has significantly improved. The China Technical Association of the Paper Industry (CTAPI) organised expert evaluations and identified five innovative technological achievements in the field of tissue paper, including:

- BC1800 Crescent high-speed tissue machine, supplied by Baotuo Paper Machinery;
- Steel Yankee dryer, manufactured by Liyang Jiangnan Dryer Manufacturing;
- Dryer coating technology, manufactured by Dongguan Shedian Nano Spraying Technology;
- Large-scale high-speed glue-less point-to-point double-sided embosser developed, supplied by Guangdong Zhidesheng Technology;
- Full-width folding machine produced, supplied by Chanli Machinery.

PART 6: IMPORTS AND EXPORTS OF THE INDUSTRY

Regarding the import and export data of the tissue paper industry from China's customs records;

In the first three quarters of 2023, the export volume and export value of tissue paper significantly increased year-on-year, and the situation was favourable, both showing double digit growth. The total export volume reached approximately 804,200 tons, showing a substantial increase of 42.47% year-on-year. The total export value amounted to $1.762bn, representing a growth of 26.80% year-on-year. The import volume of tissue paper was about 24,300 tons, which remained relatively stable compared to the same period last year. Imported tissue paper mainly consists of parent tissue rolls.

PART 7: PUBLICATION AND IMPLEMENTATION OF RELEVANT STANDARDS

1. The newly revised national standard for 2023 is "kitchen towel", which is a revision of GB/T 26174-2010, issued on 6 August 2023 and implemented on 1 September 2024.
2. In 2023, the National Development and Reform Commission and other departments issued a notification regarding "Industrial Key Energy Efficiency Benchmarks and Baselines". This notification includes parent tissue roll for toilet tissue and tissues in the scope of energy-saving and carbon reduction upgrades in industrial key sectors, imposing higher requirements on industry production.
3. The "Products with Craftsmanship — Tissue Paper", drafted by the China National Pulp and Paper Research Institute (CNPPRI), was selected as one of the 100 demonstration projects for the application of group standards by the Ministry of Industry and Information Technology in 2023. Furthermore, in 2023, Tmall adopted the specifications and dimensions requirements for draw-out facial tissue from the group standard as reference size standards for facial tissue products entering the platform.

On 27 October 2023, the China Technical Association of Paper Industry (CTAPI) released a draft of the "Carbon Footprint Accounting Method and Reporting Guidelines for Pulp, Paper, Paperboard, and Paper Products" standard for public consultation. The standard relates to tissue paper.

PART 8: THE BELT AND ROAD INITIATIVE PROMOTES INDUSTRY DEVELOPMENT

The year 2023 marks the tenth anniversary of the Belt and Road Initiative (BRI). Over the past decade, the tissue paper industry has benefited greatly from the opportunities presented by the BRI. There are some notable examples:

Companies such as Hengan, Vinda, Xiamen Yanjan, Sunda, and Haoyue in the tissue paper and hygiene product industry invested in building factories in countries along the BRI routes, achieving significant development. Elsewhere, APP China collaborated with numerous Indonesian enterprises in various projects under the BRI.

Renowned domestic paper machine manufacturers such as Baotuo, Xinhe, Hicredit, Qingliang, Hualin, Goldsun, Bingzhi, Dazheng, Fangyuan Zhonghe, Weituo, Changda, and others exported a total of 41 Crescent and Vacuum cylinder tissue machines with a combined production capacity of approximately 682,500tpy to Asia, Africa, and Europe, with most being to countries along the BRI.

On 10 August 2023, the first pulp sea-rail intermodal freight train departed from Qingdao to Qinhuangdao and Baoding. China Bank (Brazil) successfully processed a RMB letter of credit discount business for a Brazilian pulp company (Eldorado) at the end of September 2023.

PART 9: INDUSTRY ENTERPRISES ACTIVELY ENGAGED IN BRAND ENHANCEMENT AND CHANNEL INNOVATION

CNPPRI actively built the brand cultivation service platform for the tissue paper and hygiene products industry and carried out relevant work to evaluate "Products with Craftsmanship" in the industry. In 2023, 21 brand products including the tissue paper brands like Mind Act Upon Mind, Virjoy, Libang, Botare, Rain Forest, KIMBOS, and SIJN were made into the Products with Craftsmanship list. This compared to 17 brands in 2022. Enterprises continue to explore new marketing methods;

- The Gold Hongye Paper Group partnered with JD and Tmall to hold a strategic cooperation conference.
- Mind Act Upon Mind designated May 20th as its brand day and used TV commercials as the main medium to communicate with consumers from the perspective of their brand spokesperson, Xiao Zhan, putting forward the expression that love is close to life.
- Vinda partnered with JD Super Brand Day to promote their new product and launched a TV commercial featuring their newest brand ambassador, Zhao Liying.
- Rain Forest participated in JD's "Spring Dawn Plan".
- Libang cooperated with Dongfang Selection.
- Jinboshi, Libang, and Rain Forest attended the Consumer Goods Industry "Increase Variety, Improve Quality and Innovate Brand" Strategy Promotion Conference, showcasing their products.

PART 10: THE 30TH ANNIVERSARY OF CNHPIA

In 2023, the CNHPIA celebrated its 30th anniversary. Over the past three decades, the committee has played a crucial role as a bridge and link between the government and the industry. It has gained wide recognition and appreciation within the industry.

PART 11: CHALLENGES AND RECOMMENDATIONS FACING THE INDUSTRY

Ongoing industry-phased overcapacity issues and increased price competition reduced industry profitability levels. The industry is facing a persistent problem of excessive production capacity at its current stage, leading to intensified price competition and a decrease in profitability. In recent years, China's tissue paper industry has witnessed continuous growth in production capacity, resulting in a prominent issue of temporary overcapacity and intense competition among homogeneous products. By 2023, the total industry capacity is expected to exceed 21m tpy, while the combined capacity from projects publicly announced for 2024 and beyond has already surpassed 12m tpy. The market experiences fierce price competition, with some product prices failing to accurately reflect fluctuations in raw material costs. As a result, it becomes challenging to improve overall profitability levels within the industry.

Furthermore, the concentration of equipment in the industry is expected to increase. As a result of continuous improvements in individual production and processing capacities of equipment in the industry, combined with the impact of temporary overcapacity, orders for tissue machines and processing equipment manufacturers decreased in 2023. Additionally, factors such as reduced demand from overseas markets led to a decline in export orders for equipment. This intensifies competition among equipment companies. Consequently, the concentration within the industry is expected to further increase.

Industry enterprises should actively transform towards green development by innovating and developing differentiated products, especially environmentally friendly and low-carbon products, to avoid homogeneous competition. They should also introduce more energy-efficient, carbon-reducing, and intelligent equipment. Furthermore, they can achieve industry consolidation and collective growth through capacity collaboration and supply chain partnerships among companies. The industry enterprises should adhere to rational competition and jointly promote sustainable development of the industry.

Updated designs: companies applied new technologies and equipment to develop differentiated products

Istanbul's historic 34-floor Hilton Istanbul Bomonti Hotel: the hotel will host Tissue World Istanbul between 20-21 November 2024.

GLOBAL INDUSTRY'S PREMIER EVENT RETURNS WITH TISSUE WORLD ISTANBUL

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

TÜRKİYE

Tissue World has confirmed that its conference and tradeshow in Istanbul – at the heart of the dynamic Türkiye, Middle East, Eastern Europe, North African and globally expanding tissue market – is set for November this year. Tissue World Istanbul is proud to showcase market-leading industry talent at the opulent Hilton Istanbul Bomonti Hotel & Conference Center between 20-21 November 2024.

The setting could hardly be more spectacular, or better placed to reflect all the magical sights and experiences that the legendary city – the gateway from East to West – has to offer. Tailored exclusively to the region's tissue market, Tissue World Istanbul will offer a warm welcome to delegates from across Türkiye, the Middle East, Eastern Europe, and North Africa. The historic 34-floor Hilton Istanbul Bomonti will host the premier two-day event, allowing attendees exclusive access to over 25 talks from industry-leading speakers and over 30 sessions of content.

Offering sea views, a three-floor spa, indoor and outdoor pools, rooftop dining, and – at 2,072m2 – Türkiye's largest ballroom, the Hilton Istanbul Bomonti is also located across from Bomontiada, a hub of music, food, and art, the famous Nişantaşı shopping district, Taksim Square, and Dolmabahçe Palace. The great sights of this magical city – the Grand Bazaar, the Blue Mosque and the Topkapi Palace – are also all within easy reach. As the region's leading exhibition for the tissue industry, the Tissue World Istanbul platform offers a unique in-person experience for attendees.

Why Istanbul?

Istanbul's strategic significance as a global hub makes it the ideal location for the latest addition to the Tissue World series. Türkiye has emerged as a key player in European paper production, particularly in the tissue paper segment, boasting a remarkable 70% increase in production volume and a 40% expansion in capacity over the past decade. Fuelled by both local and foreign investments, this growth trajectory underscores Türkiye's commitment to sustainability and innovation in tissue manufacturing, leveraging advanced technologies to minimise environmental impact while delivering top-quality products.

With its strategic location bridging Europe and Asia, the country efficiently exports tissue products to neighbouring countries, EU states, the Middle East, and Northern and Central Asia, including key markets such as Iraq, the UK, Israel, Iran, Greece, Egypt, Georgia, Bulgaria, Azerbaijan, and various North African nations

The Hilton Istanbul Bomonti Hotel offers ample space for the focused trade show and an adjacent conference area which will cater for 200 delegates.

Exhibitors and visitors will have a superior quality destination to conduct business discussions, socialise and network – before, during and after the show.

Uniting the global tissue industry

Tissue World is a global portfolio of events designed for the international tissue manufacturing industry, bringing together manufacturers, distributors, and buyers to explore technological advances, discuss business strategies, and make valuable connections. Gerry Dunphy, Tissue World Event Director, said: "For three decades, Tissue World has stood as the world's largest international trade show for paper tissue production. Now, with our return to Istanbul for the first time since 2018, our aim is to bring together stakeholders from across the globe to Istanbul, providing a platform for collaboration and growth."

Informa PLC, the world's largest exhibition organiser and organiser of Tissue World's trade shows, promises the event to be a pivotal trade show for tissue makers, converters, suppliers, and sector professionals from the dynamic Türkiye and surrounding regions. Join us at Tissue World Istanbul 2024 on 20-21 November 2024 to connect with industry leaders, explore new business opportunities, and stay ahead of the curve in the dynamic tissue sector. Türkiye Special Report – Tissue World Magazine: In the run up to Tissue World Istanbul, the September/October print and digital TWM will include a special report on Türkiye's tissue market.

Prospective exhibitors are encouraged to enquire about a booth here: **https://show.tissueworld.com**

For more information about Tissue World Istanbul, visit: **https://www.tissueworld.com/istanbul**

Istanbul's strategic significance as a global hub makes it the ideal location for the latest addition to the Tissue World series.

Lila Kağıt's groundbreaking ceremony in Erzurum, Türkiye: the TL3bn tissue facility will be the first tissue paper facility in the Eastern Anatolia and Eastern Black Sea region, with 100,000m2 of construction being carried out on 160,000m2 of land

LILA KAĞIT HOLDS GROUND-BREAKING CEREMONY FOR TL3BN TISSUE FACILITY

Lila Kağıt has held a ground-breaking ceremony to celebrate the start of construction on its TL3bn tissue facility in Erzurum. According to the company, the site will be the first tissue paper facility in the Eastern Anatolia and Eastern Black Sea region, with 100,000m2 of construction being carried out on 160,000m2 of land.

The converting section of the facility will be operational in 2025 and the jumbo roll paper production line is aimed to be operational in 2027.

Once up and running the plant will produce toilet paper, paper towel, napkins, and handkerchiefs, manufacturing Lila Kağıt's Sofia, Maylo, UltraBerrak, Nua brands as well as private label products.

It will have an annual capacity of 35,000 tons, boosting Lila Kağıt's total production capacity to 306,000 tons. Solar energy panels will be installed on the roof of the facility and some of the production will be provided from renewable energy sources.

The ground-breaking ceremony was held at the plant on 17 May and was attended by the Deputy Minister of Interior of the Republic of Turkey Bülent Turan, the Governor of Erzurum Mustafa Çiftçi, the Deputy of Erzurum Selami Altınok, the Mayor of Erzurum Metropolitan Municipality Mehmet Sekmen, as well as Lila Kağıt's regional customers, board of directors and many guests.

Orhan Öğücü, Chairman of the Board, Lila Kağıt, said: said: "We are happy to quickly implement our new investments, which are our commitment to our investors. We wish that our new facility, the foundation of which we have laid, will be beneficial to our whole country and Erzurum."

RUSSIA

METSÄ GROUP COMPLETES SALE OF RUSSIAN SUBSIDIARIES TO VLP GROUP

Metsä Group has completed the sale of its Russian subsidiaries Metsä Svir, Metsä Forest St. Petersburg, Metsä Forest Podporozhye and Metsä Board Rus to VLP Group.

In 2022, Metsä Group stopped its business operations in Russia, including the operations of the Svir sawmill, wood procurement and paperboard sales.

As result of the completed transaction Metsä Group no longer holds any assets in Russia.

VLP Group operates in forestry and forest industry mainly in Vologda region, Russia.

Metsä Group held a minority ownership in VLP Group during 2003–2017.

The parties have agreed not to disclose the purchase price of the transaction.

GLOBAL

HUGUES SIMON TO SUCCEED MARIO PLOURDE AS CASCADES PRESIDENT AND CEO

Cascades has appointed Resolute Forest Products' Hugues Simon as its President and Chief Executive, succeeding Mario Plourde who is taking planned retirement.

Simon is currently the President of the Wood Products business at Resolute Forest Products and will assume the new role at Cascades no later than 1 July 2024.

Previously, Simon was President of BarretteWood, where he worked from 2012 to 2020.

Plourde is taking planned retirement after being at the helm of the company for over 11 years.

ANDRITZ COMPLETES ACQUISITION OF NAF BUSINESS

Andritz has strengthened its process control and automation systems offering for pulp and paper mills after completing the acquisition of NAF business.

The company said it has equipped its production plant and equipment deliveries with NAF control valves for many years, and following the acquisition, the valves will now be part of the Andritz's Intelligent Instruments portfolio, Smart Series.

It said the NAF valves will be integrated into the Andritz Metris Asset Management suite, which provides automated monitoring of control valves to maximise plant uptime and operational stability.

ITALY

CARTIERA DEL VIGNALETTO INVESTS IN COGENERATION UPGRADE

Cartiera del Vignaletto has invested in a Toscotec-supplied cogeneration upgrade at its plant in Zevio, Northern Italy.

The project includes the complete upgrade of the cogeneration plant and air systems of the mill's PM4 and PM5.

With this investment, Cartiera del Vignaletto said it aims to "substantially increase the energy efficiency of its operations by installing cutting edge energy generation equipment designed for energy saving."

BRAZIL

CMPC STARTS PROCESS FOR 2.5M TPY PULP MILL

Chile's Empresas CMPC has announced plans for a pulp mill project that will involve a $4bn industrial unit, $420m road infrastructure work, and $150m for the development of a port terminal in Rio Grande.

The company agreed a protocol for infrastructure works with the State of Rio Grande do Sul to build the site.

It would have an annual production capacity of bleached short fibre kraft pulp (BHKP) of up to 2.5 million tons.

FRANCE

ESSITY INVESTS IN TISSUE R&D CENTRE

Essity is investing in a global tissue centre for research and development in Alsace, that it said will "re-shape" the paper-making process.

Dedicated to tissue hygiene products, the company said the state-of-the-art facility will focus on tissue to meet the evolving demands of branded tissue in both Consumer and Professional Hygiene markets.

The company's current R&D centre in Kunheim, France, has filed 25 patents in recent years for innovations such as the flushable toilet roll core Lotus Aqua Tube, coreless toilet paper Lotus and Okay Sans Tube, Tork SmartOne which dispenses one sheet at a time, and paper hygiene products based on alternative fibres.

Magnus Groth, President and Chief Executive of Essity, said: "Essity's research and development is re-shaping paper making to contribute to a more sustainable and circular society, while improving people's hygiene and health."

Essity's new global R&D centre in Alsace will "re-shape" production of tissue products aimed at Consumer and Professional hygiene branded markets.

SPAIN

KARTOGROUP BOOSTS CAPACITY WITH YANKEE HOOD REBUILD

Kartogroup has started up its Andritz-supplied PrimeDry Hood HT and air system, supplied for the rebuild of a tissue machine at its España's mill in Burriana.

The equipment installed on the PM4 tissue machine features an optimised impingement distribution of the hood nozzle boxes, a heat recovery system, a state-of-the-art burner management system and Yankee head insulation.

Supplier Andritz said the technology "maximises the hood drying performance while reducing the specific energy consumption."

It added it also results in increased safety and a significant reduction of CO2 emissions.

AFRICA: CONTINENT-WIDE ECONOMIC DEVELOPMENT HAS STALLED … BUT GREATER TISSUE CONSUMPTION WITHIN LEADING NATIONS SEEMS WITHIN REACH

Per capita GDP in several countries is higher than $15,000. Yet even there the various issues holding back development – unemployment, climate, inflation, conflict – show little signs of being resolved. By Bruce Janda, Senior Consultant, Fisher International.

Africa is a vast, diverse, underdeveloped consumer market of about 54 countries and over 1.4bn people. Economic development has stalled in many countries due to political instability, which makes financing new projects like tissue machines and converting lines difficult. Many African countries are still overly focused on exporting primary commodities instead of value-added manufacturing, which has limited employment and personal income gains. This has been exacerbated by closed economies, relatively high military expenditures, poor health and education, and land-locked tropical regions.

African tissue consumption rates per person have not grown as expected. Figure 1 shows the apparent average tissue consumption development per person since 2007. Africans still use less than 1kg of tissue per person annually. This is far from the consumption rates in Latin America and Asia. Developing an African consumer economy and tissue consumption habits, as seen in many Asian countries, would result in ten times the current tissue consumption. This would provide significant opportunities for domestic producer expansion and growth for external tissue exporters. Unfortunately, this seems to be something we won't see for decades. Therefore, this slow rate of development will make it challenging to expand African domestic tissue production rapidly, and influential established tissue producers with inexpensive fibre sources will provide strong external competition.

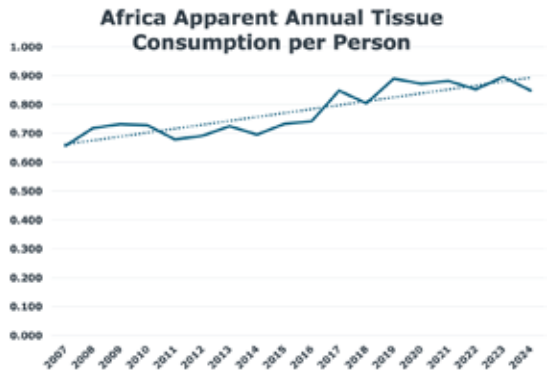


Figure 1: Africa's Average Annual Tissue Consumption per Capita

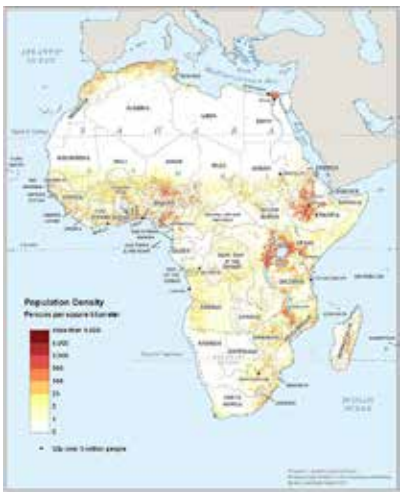


Figure 2: Africa Population Density

Africa	GDP PPP/Capita USD $	GDP 5 yr. CAGR	Population Millions	Population 5 yr. CAGR	Inflation	Unemployment %
Algeria	15,718	3.40%	46.0	1.15%	9.32	12.49
Angola	7,014	0.44%	36.8	2.60%	13.64	14.48
Benin	4,315	5.62%	13.7	2.26%	2.80	1.48
Botswana	19,260	4.14%	2.7	1.36%	5.14	23.62
Burkina Faso	2,647	3.87%	23.4	2.24%	0.94	5.07
Burundi	883	2.47%	13.0	2.39%	26.96	0.91
Cabo Verde	9,721	2.85%	0.6	0.96%	3.15	8.50
Cameroon	4,647	3.60%	28.6	2.03%	7.19	3.78
Central African Republic	1,105	2.37%	5.1	1.53%	3.17	6.34
Chad	2,557	1.78%	17.9	2.36%	2.68	1.1
Comoros	3,456	2.21%	1.0	2.54%	8.48	5.75
Congo, Democratic Republic of the	1,495	5.18%	99.9	2.60%	19.89	4.69
Congo, Republic of the	4,556	1.36%	6.1	1.96%	4.50	20.48
Cote d'Ivoire (Ivory Coast)	6,469	5.14%	31.1	2.28%	4.39	2.49
Djibouti	7,157	5.52%	1.0	1.12%	1.80	26.67
Egypt	17,038	5.25%	105.7	1.50%	24.39	6.40
Equatorial Guinea	18,395	-0.94%	1.5	2.57%	2.50	8.58
Eritrea (source World Factbook)	1,600	5.00%	6.3	1.12%	9.00	5.97
Ethiopia	3,754	6.88%	105.7	1.61%	30.22	3.42
Gabon	18,862	3.05%	2.2	1.21%	3.63	20.61
Gambia	2,834	4.13%	2.6	2.39%	16.97	4.27
Ghana	6,972	3.71%	32.9	1.75%	37.53	3.52
Guinea	3,237	5.29%	15.0	1.99%	7.80	5.53
Guinea-Bissau	3,076	4.80%	1.9	1.75%	7.16	3.24
Kenya	6,603	5.20%	51.5	1.60%	7.68	5.64
Lesotho	3,115	2.34%	2.1	0.86%	6.34	16.75
Liberia	1,787	3.60%	5.4	1.93%	10.09	3.03
Libya	24,196	0.67%	6.8	0.80%	3.43	19.3
Madagascar	1,901	2.12%	29.8	2.33%	9.86	1.9
Malawi	1,665	2.55%	22.7	2.30%	30.30	5.11
Mali Republic	2,630	2.65%	23.3	2.57%	2.05	3.14
Mauritania	7,297	3.79%	4.4	1.77%	4.95	6.32
Mauritius	29,882	3.94%	1.3	-0.06%	7.05	3.79
Morocco	10,460	3.40%	37.0	0.79%	6.14	9.99
Mozambique	1,577	3.28%	33.9	2.28%	6.14	13.00
Namibia	11,627	2.34%	2.6	1.45%	5.88	19.99
Niger	1,536	3.82%	27.1	3.03%	3.70	0.57
Nigeria	6,140	2.83%	222.2	2.03%	24.66	3.83
Rwanda	3,156	5.96%	13.5	1.76%	14.03	15.08
Sao Tome and Principe	4,109	2.40%	0.2	1.72%	21.18	14.35
Senegal	4,320	4.28%	18.2	2.19%	5.95	3.01
Seychelles Republic	41,180	3.74%	0.1	0.82%	-1.04	3.00
Sierra Leone	2,097	3.41%	8.5	1.65%	47.72	3.27
Somalia	1,996	2.22%	16.1	2.23%	6.10	19.29
South Africa	16,140	2.54%	61.5	0.92%	5.90	32.80
South Sudan	433	-0.45%	15.0	2.33%	40.20	12.44
Sudan	3,601	-3.93%	47.9	2.07%	171.47	45.96
Swaziland or Eswatini	12,027	5.33%	1.2	0.85%	4.95	22.64
Tanzania	3,570	4.72%	63.3	2.38%	4.04	2.6
Togo	2,764	5.19%	9.1	1.93%	5.06	3.85
Tunisia	13,186	2.21%	12.2	0.76%	9.32	16.40
Uganda	3,185	3.63%	45.5	2.69%	5.35	2.94
Zambia	4,179	3.56%	20.6	2.28%	10.95	4.37
Zimbabwe	2,870	3.98%	16.2	1.64%	667.36	9.26

Table 1: Africa Economic Statistics Estimated 2023 Values

Africa's population distribution is greatly affected by geography and climate, as shown in Figure 2. The population is centred in several large clusters and associated cities.

South Africa has the most mills and includes interior and coastal locations. Some 23 companies operate tissue machines in the whole of Africa, but only two are public corporations: Kimberly-Clark and SAPPI.

Other mills are distributed in 13 northern or western coastal countries, except for some inland mills in Ethiopia, Kenya, Uganda, Zambia, and Zimbabwe.

Africa's population has doubled since 2007 to over 1.4bn, as shown in Figure 4. Over the same time, the average GDP per capita (adjusted for purchasing power parity) rose from $5,350 to $7,400, representing a 38% gain, as shown by the blue line. This population and personal income increase should have resulted in greater tissue demand.

Figure 5 provides a counterpoint to support increased tissue demand. Africa's average unemployment was 21% at the beginning of the chart in 2007 and has been growing since, resulting in an over 26% unemployment rate in 2023. Region-average inflation is even more worrying, at about 16.5% in 2023. Both statistics indicate significant headwinds for developing increased domestic tissue demand.

The data shown in Figures 1-5 are averages of African data taken as a region. This is useful but does not show the diversity of economic outcomes by country and their impact on tissue demand. Global economic statistics depend on each country's willingness to report economic and trade data to be compiled by the UN and published. Data is inconsistent, as definitions of unemployment and trade data are not universal.

Economic data for each of the 54 African countries included in this report is shown in Table 1. This data was

The average African tissue machine – indicating what generation technology is available for product development or cost reduction – is about 20 years old.

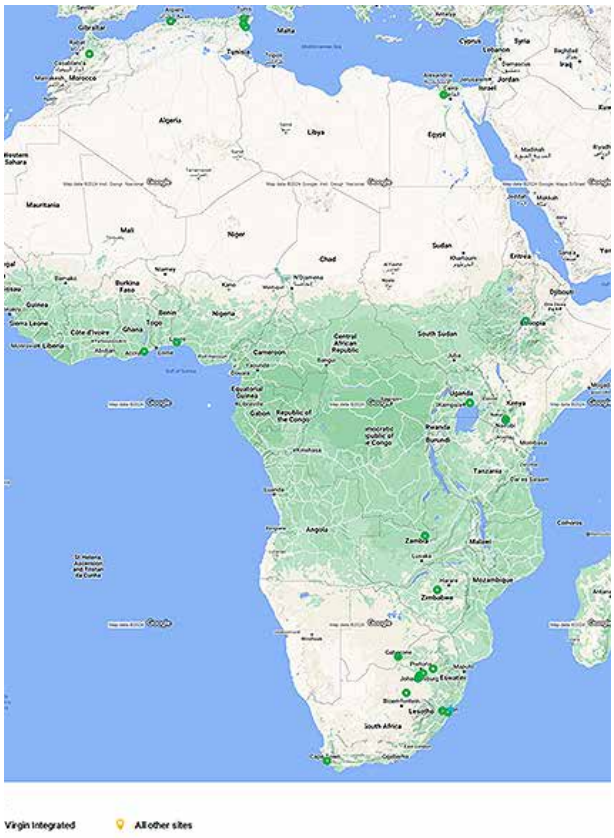


Figure 3: Africa Tissue Mill Locations

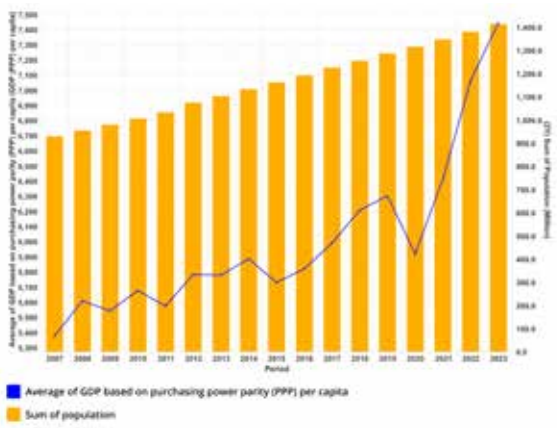


Figure 4: Africa Population and GDP/Capita (PPP)

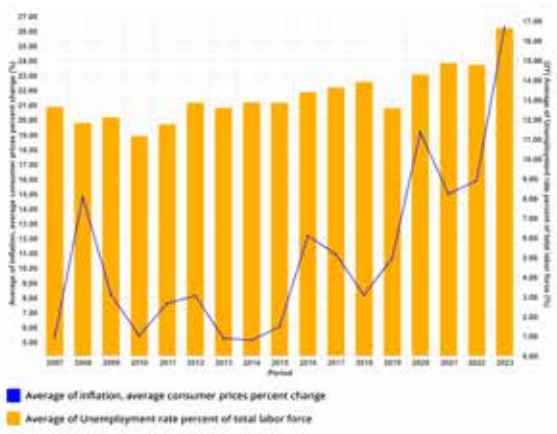


Figure 5: Africa Inflation and Unemployment

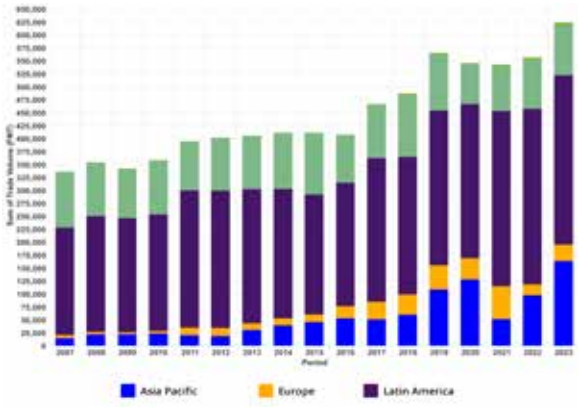


Figure 6: Africa Tissue Imports

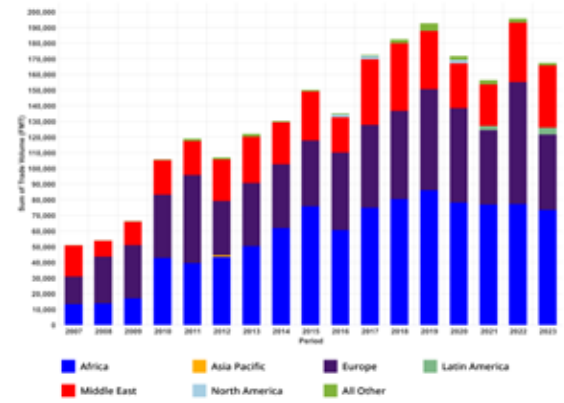


Figure 7: Africa Tissue Exports

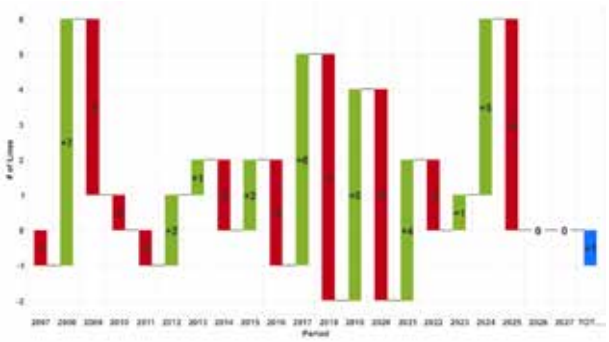


Figure 8: Africa Tissue Machine Count Changes

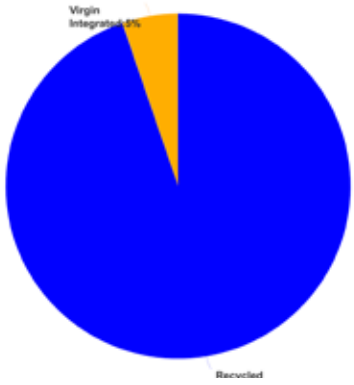


Figure 9: Africa Tissue Mill Integration

taken from FisherSolve's Markets and Capacity Trends module and the World Factbook (cia.gov). Recent data for Algeria, Eritrea, Nigeria, and Sao Tome and Principe was unavailable in FisherSolve and was taken from the World Factbook. Data from several countries became sparse during and after the pandemic.

The countries of Algeria, Botswana, Egypt, Equatorial Guinea, Gabon, Libya, Mauritius, Seychelles Republic, and South Africa all have GDP per capita (adjusted for purchasing power parity) greater than $15,000 (USD) and probably support greater personal tissue consumption. Unfortunately, Egypt reports high inflation at 24.4%, while Botswana, Gabon, and South Africa report unemployment rates from 20% to 33%. Despite the higher income levels, this would slow tissue demand growth in these locations. Another group of countries ranks at the bottom of personal income with a GDP/capita of $2,000 or less. This group includes Burundi, the Central African Republic, the Democratic Republic of Congo, Eritrea, Gambia, Liberia, Madagascar, Malawi, Mozambique, Niger, Sierra Leone, and South Sudan. These locations are unlikely to participate in tissue demand growth until their economies grow.

African tissue imports from other regions are shown in Figure 6. This chart shows slow demand growth with increasing tissue imports from the Asia-Pacific region.

The continent's tissue exports trend is shown in Figure 7. Note that the Y-axis, for imports, is three times the size of the exports chart for scale comparison. In this case, the regional export data also includes African intraregional trade as the blue bar segments. This shows increased tissue supply from African domestic producers to other African countries. Tissue exports to Europe and the Middle East are relatively small.

Africa's tissue machine fleet count has been relatively stable, with new machines replacing shutdown, old machines throughout this trend, resulting in a net increase of one additional machine, as shown in Figure 8. The compound annual growth rate for African-based tissue production over the same period is 4.38%. This includes not just new machines but also capacity improvement projects.

Almost all African tissue mill sites are partially integrated with paper fibre recycling plants, as shown in Figure 9. The lone exception is a partially virgin fibre integrated site operated by SAPPI in KwaZulu-Natal, South Africa.

Figure 10 shows the tissue products produced in Africa organised by the finished product and the furnish description. As expected, consumer bath represents 75% of total production, typical in an underdeveloped tissue market. There is less opportunity for conveniences like facial tissue, napkins, or paper towels. The largest furnish sources are recycled paper (unbleached, not-deinked, unbleached and deinked, bleached and deinked). Not every site is fibre self-sufficient, so significant market pulp is imported. Eucalyptus is the most common pulp import, followed by Northern Harwood, Southern Softwood, and Northern Softwood.

Figure 11 uses a bubble chart to examine African tissue machine quality. The size of each bubble corresponds to the relative tissue production for each producing country. South Africa, Tunisia, Egypt, and Nigeria have the largest tissue businesses by volume.

The Y-axis shows the average machine speed in metres per minute. Most world-class machines today run well over 2,000 meters per minute, so these averages are quite low.

The X-axis shows the average tissue machine technical age for each country. This indicates what generation technology is available for product development or cost reduction. The average African tissue machine is about 20 years old. This makes the relatively new Uganda machine stick out. However, the machine speed is so slow that it suggests that the technology employed is not world-class.

Figure 12 shows the same chart, but three potential tissue export nations are included to provide a more global competitiveness assessment: Türkiye, Indonesia, and Brazil. Here, we see the tremendous volume of tissue produced in each country, which tends to outweigh all of Africa several times over. These tissue machines are, on average, relatively newer and run faster than most African machines. Indonesia and Brazil are also huge wood pulp producers and are moving toward integrating their tissue machines with pulp production. Türkiye has focused on developing a tissue export business based on pulp imported into the market.

The same countries are included with Africa in Figure 13 to compare the average cash cost of producing a ton of tissue. The height of each country's bar represents the cash cost of production, and the width of each bar is the relative tissue capacity. The coloured bands for each

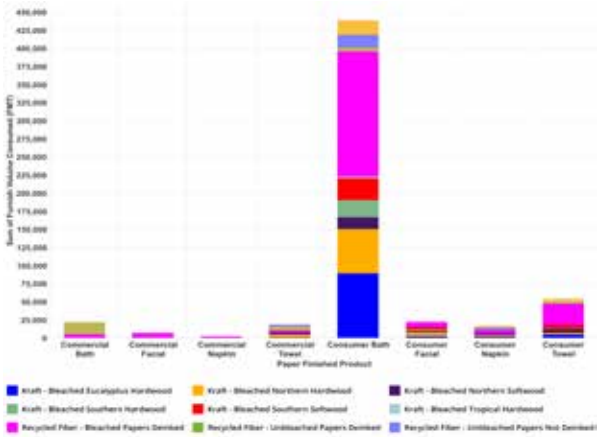


Figure 10: Africa Tissue Production – Finished Products and Fibre Description

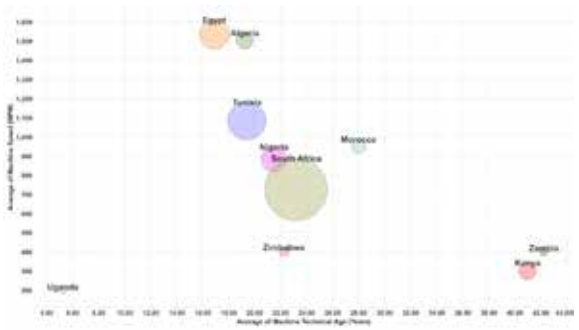


Figure 11: Africa Tissue Machine Quality

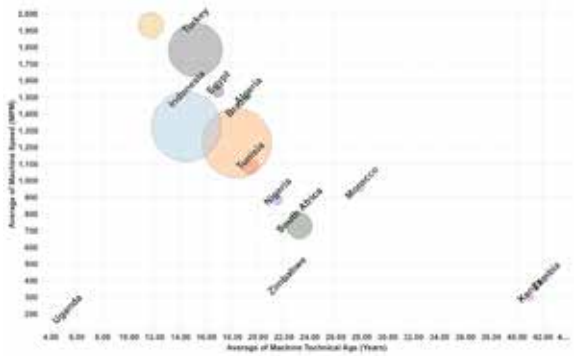


Figure 12: Africa Tissue Machine Quality vs. Potential Import Sources

Indonesia and Brazil are huge wood pulp producers and are moving toward integrating their tissue machines with pulp production.

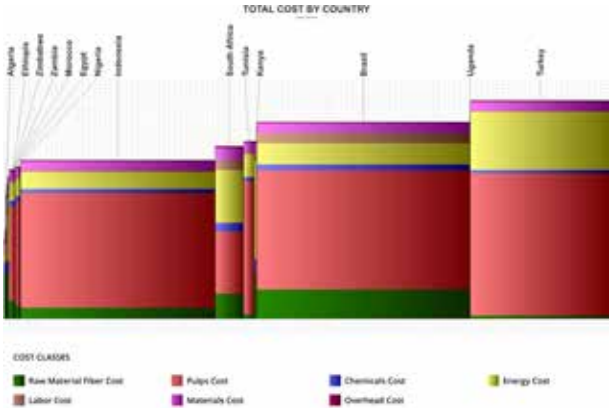


Figure 13: Africa Tissue Production Cash Cost Comparison

TISSUE

TREBOR

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

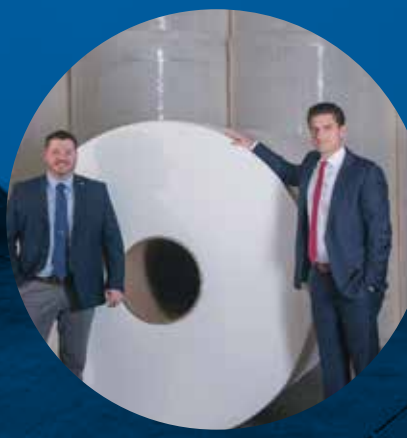
Your most reliable source for parent rolls of tissue since 1972.

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.



TREBOR USA • Telephone: 732.335.4255 • Fax: 732.335.4244 • www.trebor.com

bar represent the costs of raw fibre material, market pulp, chemicals, energy, labour, materials, overhead, and credits.

The massive volume of tissue produced in Indonesia, Brazil, and Türkiye is shown in the bars' width, representing the average production cost in each country. Türkiye suffers from inflation and high costs from using market pulp, but they would probably argue that their products are worth higher margins. Energy costs in South Africa and Türkiye stand out as a competitive disadvantage. Both countries have used coal power for electricity and mill boilers.

A snapshot of the average tissue machine and mill viability is shown in Figure 14. In this case, the cost of the bar height is detailed by viability factors, where cost is only one of the factors. The legend shows these factors as capital required, cost, grade risk, internal company risk, competitiveness, size, technical age, and tons per unit trim. Most countries do well in this comparison, positioned at the lower end of this set, led by Türkiye, Indonesia, Tunisia, and Brazil. At the right-hand end of the chart, Uganda, Morocco, Zimbabwe, Zambia, and Kenya show significantly higher risk scores.

Figure 15 displays carbon emissions per finished metric ton, explicitly focusing on emissions from tissue machines on-site and excluding pulp production at integrated sites. Scope 1 and 2 emissions were chosen as they are most likely to be included in a carbon analysis by potential consumers. The colours stacked in each bar represent the source of each emission. The two key areas are fossil fuel consumption on-site for power and heat during tissue drying and the fossil fuel content of electricity grid production.

In several African countries, tissue production is relatively low in carbon. Uganda and Ethiopia have slightly lower carbon intensity than Brazil. However, Brazil is one of the best tissue industries for low-carbon intensity. Morocco, Zimbabwe, and South Africa have the highest carbon intensity in the continent.

Africa remains an underdeveloped region in the global tissue business. Consumer tissue demand is developing slower than expected. Political and economic insecurity appears to have been increasing in the past 25 years, putting more and more people at risk for basic survival in famine and war. The result is much slower development of consumer demand for products that make life better, like tissue.

Africa's diverse peoples, languages, and cultures complement the region's diverse climates and geography. Not every country is in the same situation. We should expect the demand for tissue products to grow at different rates. The countries with better economic environments will accelerate and leave the others behind. Africa is not developing as a region, and general tissue demand may spread more slowly than we see in Asia.

Analysis of competitive position requires specifics on tissue producers and individual machines. This

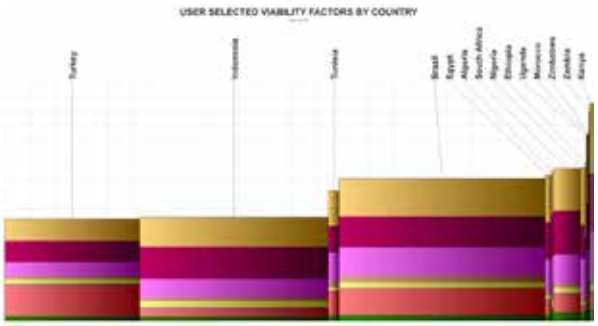


Figure 14: Africa Tissue Machine Viability

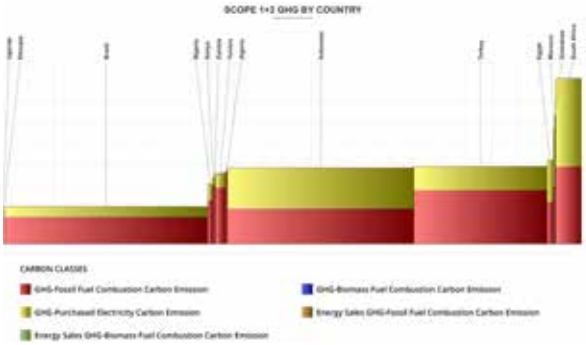


Figure 15: Africa Tissue Scope 1 and 2 Carbon Emissions

article presents a static summary of Africa's tissue industry today. Fibre prices, exchange rates, and environmental regulations will change, providing some participants advantages and new challenges. In addition, Africa's tissue mills will continue to change hands and consolidate, and neighbouring countries may invest in tissue-making capacity, affecting Africa's imports and exports.

In several African countries, tissue production is relatively low in carbon. Uganda and Ethiopia have slightly lower carbon intensity than Brazil.

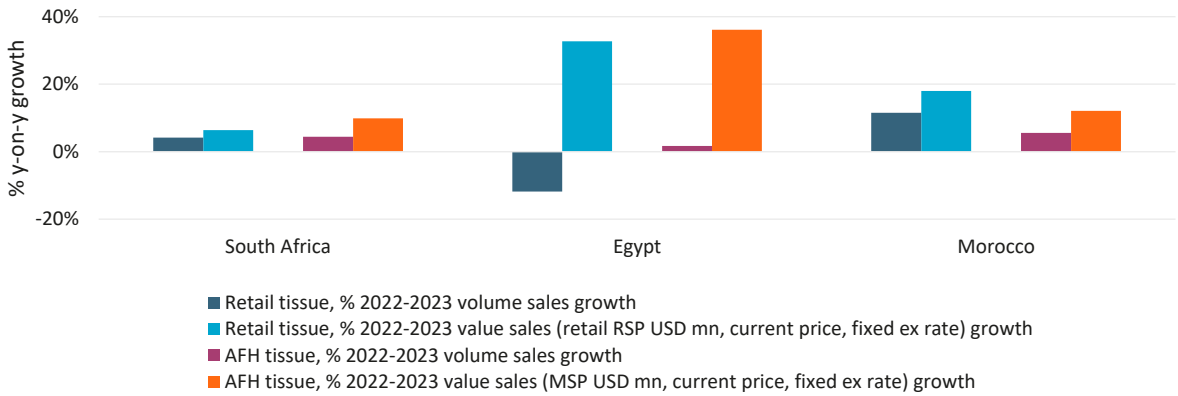
BALANCING AFFORDABILITY AGAINST A VAST TISSUE POTENTIAL STILL OUT OF REACH

With a central market dynamic of value gains set against volume decline, manufacturers look to population trends and changes in hygiene routines for expected growth. Euromonitor International's Liying Qian, Industry Manager for Tissue & Hygiene, looks at Africa's top performing tissue markets.

The African continent is faced with a consumer reality where the focus is firmly on affordability and value, driven by its complex socio-economic reality combining a large and expanding population and yet an average household disposable income significantly lower than the global average. Such diverging complexity reveals the region's key tissue market characteristics characterised by under-penetration and price sensitivity, which has squeezed brand loyalty and created fierce competition from local players.

Let's start with the numbers. In 2023, most African tissue markets saw elevated or even accelerated nominal value sales growth (in USD million, including

Retail and AFH tissue's value and volume sales year-on-year % growth, key African markets, 2023



Source: Euromonitor International Tissue and Hygiene annual research, published February 2024

inflation effect) led by inflation and at the expense of volume growth. Such widening gaps between value and volume sales growth is especially notable in Egypt's and Nigeria's retail tissue, where volume sales plunged into a further decline in 2023 compared to 2022, while retail value sales growth significantly accelerated.

At the opposite side is South African, which boasts the highest per capita tissue volume consumption and disposable incomes in the region despite massive income inequality, and which proved quite resilient. Volume growth in retail and AfH tissue consumption in 2023 marginally improved from a year ago, while nominal value growth slightly softened albeit staying elevated.

As affordability remains top of mind, purchase rationalisation, sharpened focus on value for money, and a shift towards bulk purchases continues to shape tissue production priorities such as localisation, SKU rationalisation, efficiency-led new product launches and promotion strategies.

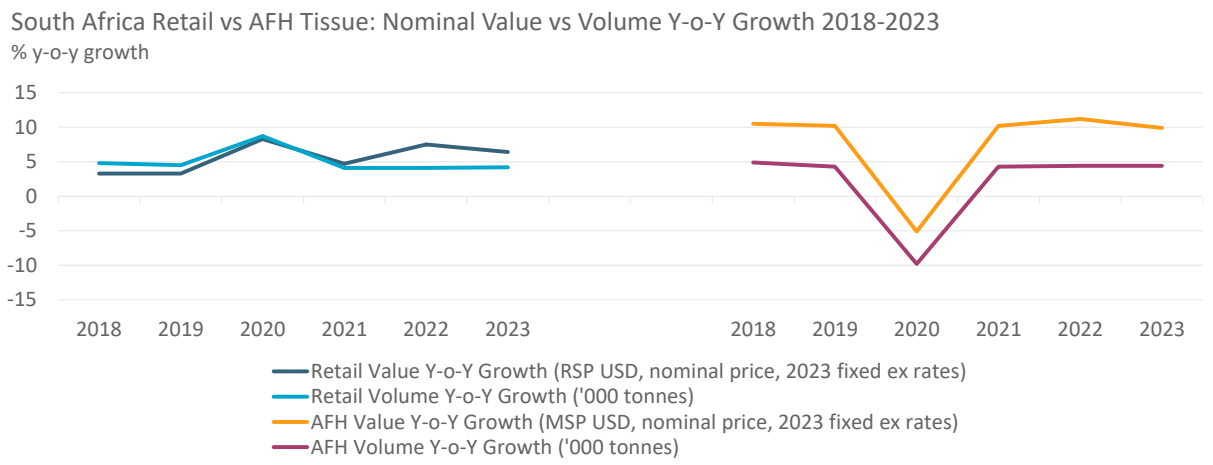
To illustrate industry dynamics, from consumption growth patterns to innovation trends and competitive dynamics, this article will focus on the top African tissue markets: South Africa, Egypt, and Morocco.

have turned a keen eye towards value for money in terms of size and absorbency, increasingly echoed in manufacturers' product developments.

For instance, Dinu, a leading paper towel brand in South Africa produced by Universal Paper & Plastics, traditionally offered paper towel with 50 sheets sold in packs of two under Everyday Collection, and has now started to offer four rolls of paper towels in one pack and include 100 sheets in Mega Roll to allow for bulkier economical buys.

In addition to larger size offering, virgin pulp formulation, which aligns with consumer demand for high absorption and durability, is likely to gain popularity due to higher quality. In fact, virgin pulp offerings are increasingly explored by leading brands such as Dinu, as well as manufacturer Twinsaver.

While name brands continued to compete through value creation among higher-income consumers, private label maintains its pricing advantage most notably in napkins. Promotional strategies such as rewards programmes offered by key retailers like Dis-Chem Pharmacy also help stimulate private label's attraction, as mirrored in the growing market share of two largest retail tissue channels – grocery retailers (mainly supermarkets) and health and beauty specialists (including pharmacies).



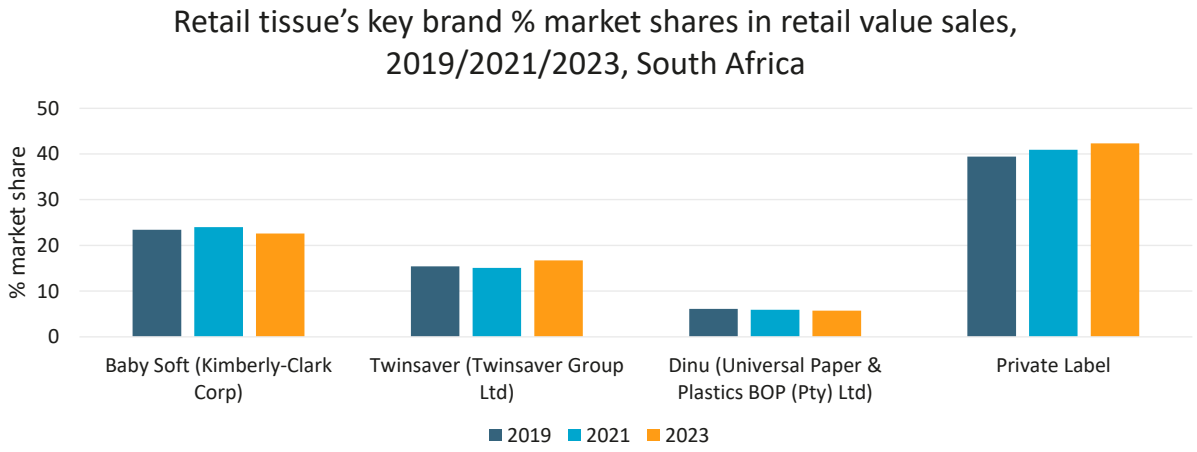
SOUTH AFRICA

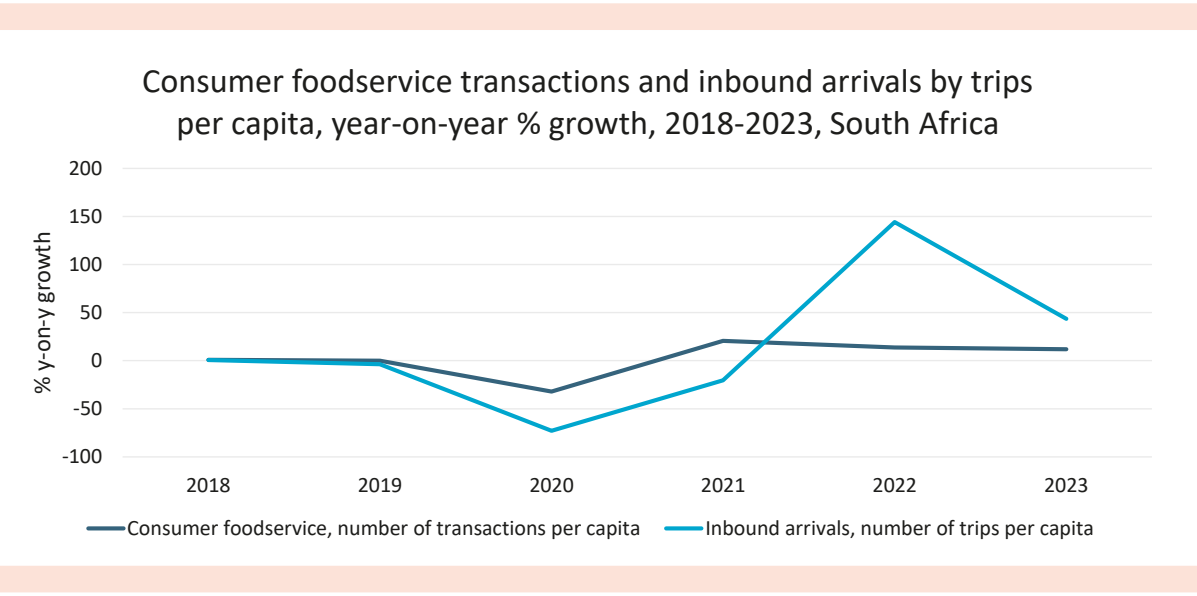
Inflation pressure and shrinkage of recycled paper (a key source of retail tissue product in South Africa) have boosted unit price and reinforced consumer rationalisation. Nonetheless, volume consumption in retail and AfH experienced steady growth.

As such, tissue manufacturers focused more production resources on most in-demand tissue types – toilet paper and paper towels, with the former driving the vast majority of increment volume sales increase in retail and AfH tissue 2022-2023. While consumers continued to acknowledge the versatile cleaning essentiality of paper towels at home, they

Collectively, private label owned 42% of South Africa's retail tissue value sales in 2023, up from 39% in 2019.

AfH tissue in South Africa also saw growth. In 2023, AfH tissue's volume sales for the first time since 2020 surpassed the 2019 level. Despite inflation's grip on macroeconomic and disposable income growth, positive tourism prospects and reinforcement of traditional office working hours are predicted to support further demand for AfH tissue forecast growth. According to Euromonitor's research, per capita consumer expenditure on hotels and catering (USD, current prices, fixed 2023





ex rates) in South Africa in 2023 grew 17%, finally surpassing the 2019 level.

In AfH, as in retail tissue, toilet paper is the main driver of incremental volume growth 2022-2023. Lower-priced tissue options will likely see more gains in AfH over forecast period than other products. As such, manufacturers are diverting budgets towards less expensive product lines and cutting reliance on imports, as evidenced by Kimberly-Clark's expansion of production capacity and asset upgrades.

However, this move also brings additional taxation costs as well as increased input costs due to higher fuel and electricity tariffs in South Africa, as observed at the end of the review period, making supply localisation an ongoing target.

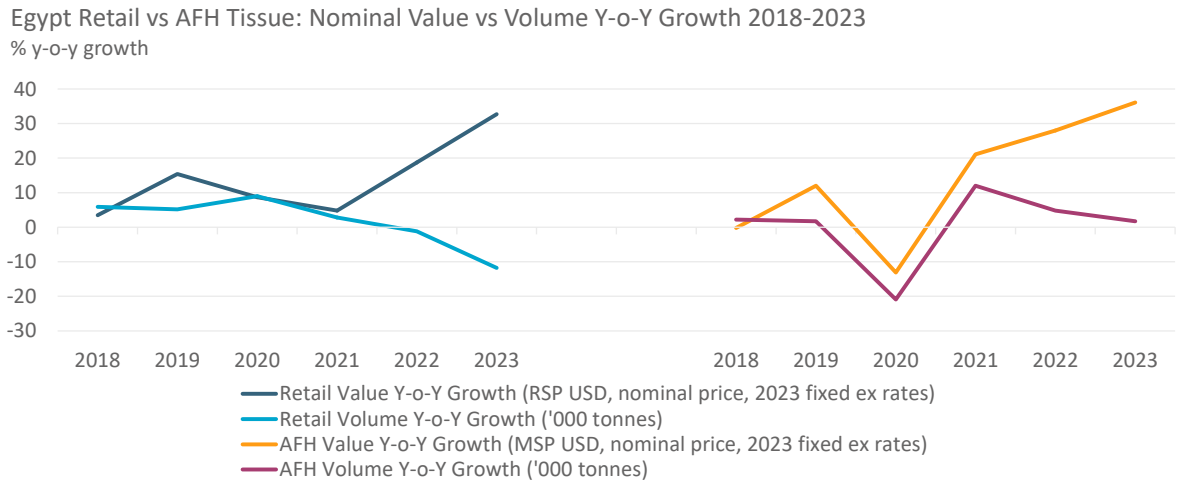
EGYPT

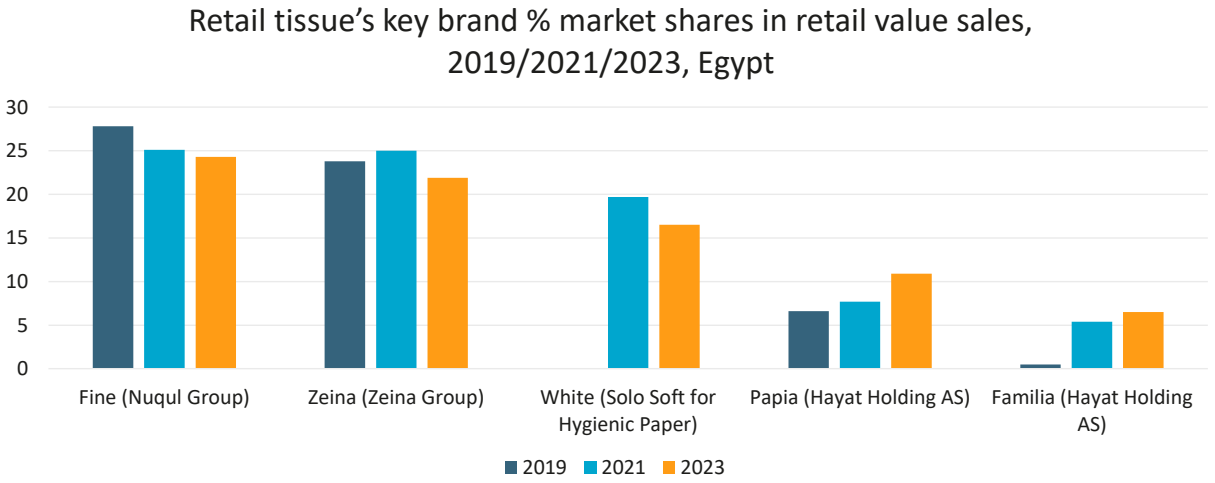
Among key African continent tissue markets, Egypt saw the largest declines in tissue volume sales in 2023. Retail tissue volume consumption decline exacerbated further to drop below 2019 level.

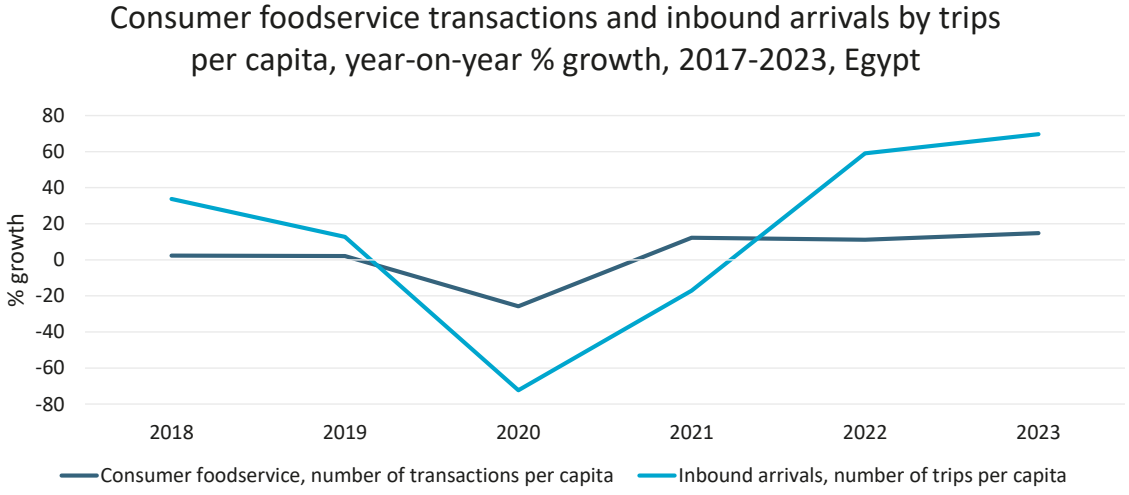
AfH tissue volume sales in 2023, despite moderate growth, has slowed in growth from 2022's 5% to just under 2%, below 2019's level.

Of all retail tissue products, facial tissues - the largest product segment - drove almost the entirety of topline incremental volume decline 2022-2023. Boxed facial tissues particularly saw an increase in sales volume, accompanied by a double-digit rise in sales value due to a substantial increase in average unit price. Despite price sensitivity, many consumers perceive facial tissues as substitutes for general-purpose wipes and pocket tissues.

Paper towels is the only retail tissue segment seeing volume growth despite price challenges. Although many consumers attempted to cut cost by using reusable alternatives, increased home cooking occasions due to cutback on outdoor spending and increased demand for convenience have supported paper towels usage.


Egypt Retail vs AFH Tissue: Nominal Value vs Volume Y-o-Y Growth 2018-2023
% y-o-y growth
40
30
20
10
0
-10
-20
-30
2018
2019
2020
2021
2022
2023
Retail Value Y-o-Y Growth (RSP USD, nominal price, 2023 fixed ex rates)
Retail Volume Y-o-Y Growth ('000 tonnes)
AFH Value Y-o-Y Growth (MSP USD, nominal price, 2023 fixed ex rates)
AFH Volume Y-o-Y Growth ('000 tonnes)


Retail tissue's key brand % market shares in retail value sales, 2019/2021/2023, Egypt
30
25
20
15
10
5
0
Fine (Nuqul Group)
Zeina (Zeina Group)
White (Solo Soft for Hygienic Paper)
Papia (Hayat Holding AS)
Familia (Hayat Holding AS)
2019
2021
2023


Consumer foodservice transactions and inbound arrivals by trips per capita, year-on-year % growth, 2017-2023, Egypt
% growth
80
60
40
20
0
-20
-40
-60
-80
2018
2019
2020
2021
2022
2023
Consumer foodservice, number of transactions per capita
Inbound arrivals, number of trips per capita

Supermarkets, the largest retail channel is the only retail channel gaining shares 2022-2023, thanks to its abundance of economical options and discounts.

Though a small, developing tissue market, Egypt is faced with a slew of challenges, particularly economic constrains, political instability as well as difficulty for the government to secure foreign currency for manufacturers to import needed materials for local production. All these, alongside lower consumer product education and access, can hinder local manufacturers from reaching full production potential and economies of scale.

Egypt is faced with a slew of challenges, particularly economic constrains, political instability as well as difficulty for the government to secure foreign currency for manufacturers to import needed materials.

Competitively, the Egyptian tissue market is heavily dominated by local players, with few multinationals making headways. Hayat is one, thanks to its long-time local investment, product diversification and targeting of high-demand tissue types and consumer preferences.

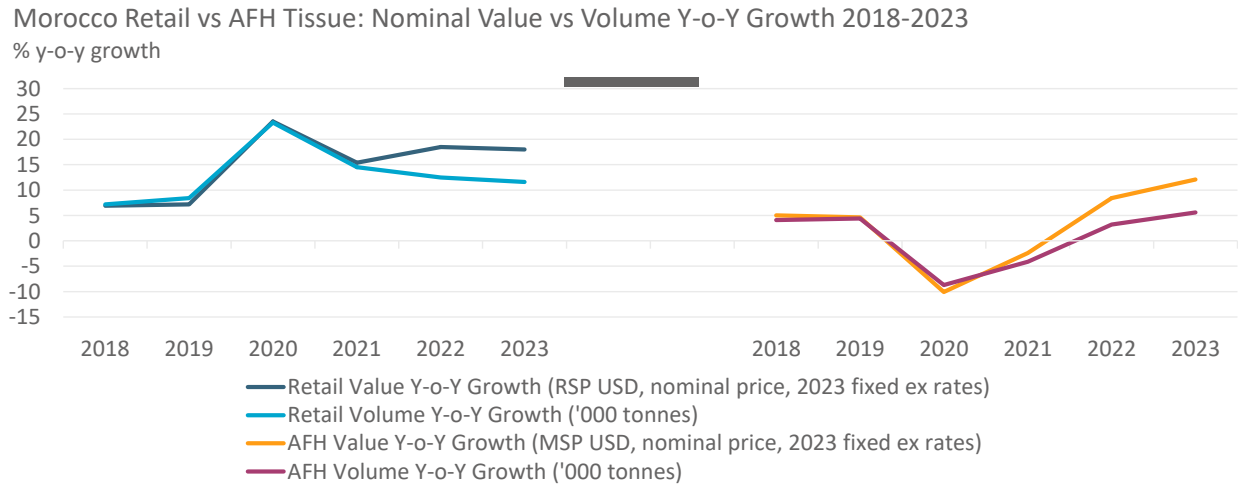
In AfH, while total volume sales in 2023 remained below 2019 level, nominal value sales almost doubled 2019, largely driven by the HoReCa channels which accounted for more than half of AfH tissue sales in 2023. The growing tourism sector is one of the major sources of foreign exchange for the Egyptian economy and fuelled by a double-digit increase in inbound tourists and the Egyptian government's investment, as well as increased outdoor dining and activities were key contributors.

MOROCCO

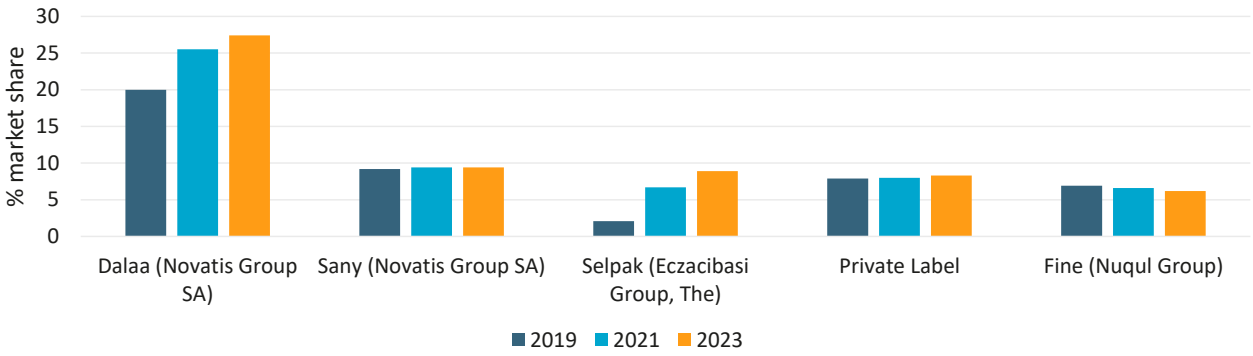
In 2023, retail tissue categories recorded dynamic growth in Morocco, while AfH tissue had more lacklustre performance, with absolute volume consumptions still below 2019's level.

On the retail side, 2023 incremental growth was further driven by the economic end of the market, with cheaper products becoming more widely available due to inflation. Toilet paper was a key driver of retail volume growth in 2023, as more consumers switched from using the traditional method of washing with water to using toilet paper and continued to consider toilet paper as a versatile cleaning agent across use occasions.

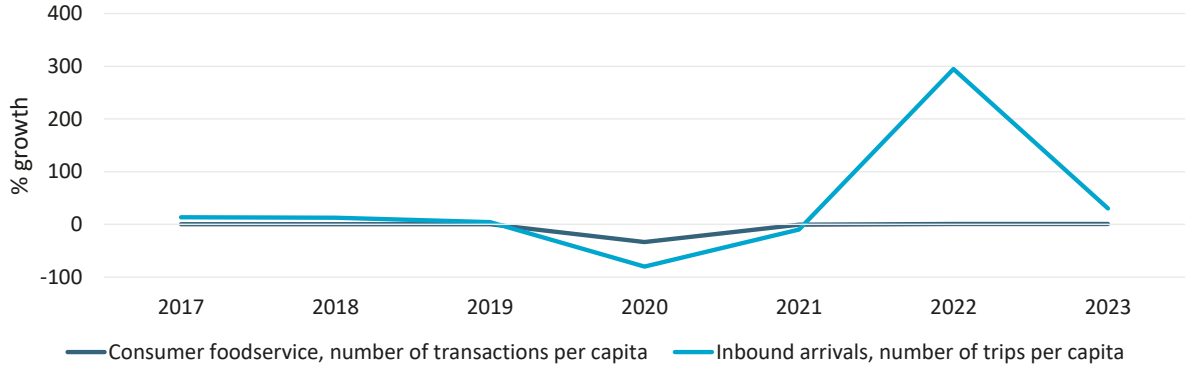
As middle-income consumers shift to thicker, higher-quality tissue goods such as 4-ply toilet paper, which accounts for less than 30% of total toilet paper sales, manufacturers also increasingly target the higher-priced end by launching 4-ply toilet paper and facial tissues with greater



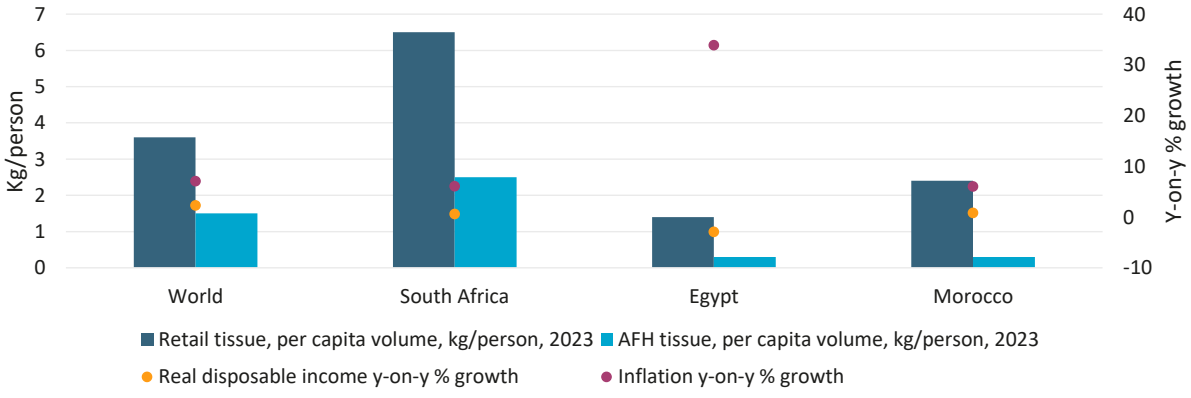
Retail tissue's key brand % market shares in retail value sales, 2019/2021/2023, Morocco



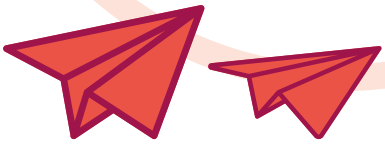
Consumer foodservice transactions and inbound arrivals by trips per capita, year-on-year % growth, 2017-2023, Morocco



Per capita volume consumption of retail tissue vs AFH tissue and inflation vs real GDP growth, world and select African markets, 2023



However, similar to its regional peers, with a lack of brand loyalty in tissue, most price-sensitive Moroccans were favouring economical bulk formats, low prices and discounts, hence favouring cheaper domestic brands.



comfort and absorbency, as exemplified by Selpak Deluxe, Tempo Blanc, Tempo and Kleenex Balsam. Toilet paper with plant-based, botanical scents, as offered by brand Fancy, also made inroads.

Retail tissue in Morocco remained competitive and fragmented.

Novatis Group, the largest producer of retail tissue in Morocco, retained its value lead of the landscape in 2023 with its brands Dalaa, Sany, Pandoo and Ever Silk, thanks to its wide retail distribution, promotions, and widening product selections. However, similar to its regional peers, with a lack of brand loyalty in tissue, most price-sensitive Moroccans were favouring economical bulk formats, low prices and discounts, hence favouring cheaper domestic brands. Private labels such as Marjane, Blume, Janis and Carrefour maintained its foothold due to retailers' footprint expansion in urban and suburban areas, diversification into all retail tissue categories, and packaging upgrades.

AfH tissue's 2023 volume sales, despite improved growth from 2022's 3% to just under 6% in 2023, has yet to fully recovered declines in 2020 and 2021 and remained below 2019 level. This is mirrored in the country's still partial recovery in consumer foodservice and tourism, industries responsible for nearly 60% of total AfH tissue volume consumption in 2023.

In the near future, cost remains a challenge for growth in AfH tissue, particularly for paper towels and napkins. While demand for low-priced products will likely benefit local suppliers such as Novatis Group and Brior, this could change in the coming years as multinational companies seek to expand into the AfH channel - especially Turkish companies such as Hayat Morocco and ECP Maroc. Both multinationals' brands have already been gaining popularity in retail through quality and variety.

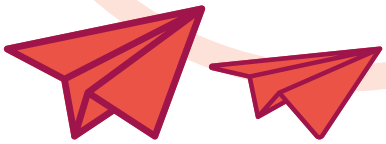
CONCLUSIONS

Favourable population trends and changes in hygiene routines signify ample, albeit challenging-to-penetrate growth potential. Population growth and still low per capita tissue consumption are likely to bode well for long-term tissue growth on the African continent, owing to improved accessibility of sanitation infrastructure in households and increased consumer hygiene habits and product availability and awareness.

With per capita consumption of tissue in Egypt, Morocco and many other regional peers estimated at under 3kg, below global average and developed countries' levels, countries in the region see a long growth journey.

However, macro challenges such as high inflation, a fair share of households in key markets with no flush toilets, a change of awareness and habit through improving product accessibility, variety and the local supply chain efficiency can help make the change.

With per capita consumption of tissue in Egypt, Morocco and many other regional peers estimated at under 3kg, below global average and developed countries' levels, countries in the region see a long growth journey.



FORESEEABLE DOUBLE DIGIT GROWTH EVEN AS MANY CONSUMERS STRUGGLE WITH RISING COSTS

South Africa's mixed economy sees many consumers moving down market, but growing urbanisation means the pool of consumers able to buy tissue products is growing. Universal Paper & Plastics Managing Director Jonathan Sher spoke to TWM Senior Editor Helen Morris.

It has been almost a decade since TWM first met family-owned Universal Paper & Plastics' (UPP) Managing Director Jonathan Sher at the company's mill in Ga-Rankuwa, Gauteng province, South Africa.

Back in 2015, at Ga-Rankuwa Sher discussed how UPP's focus was on being "creatively self-sufficient", as the South African tissue market dealt with rising energy costs, a struggling economy, and fast-changing consumer habits. The historic, family-owned company - having been established almost 75 years ago by Sher's great grandfather Hymie and grandfather Sam Phillip, then steered from the mid 80's by his father Barry, and now run by brothers Jonathan and David – used consumer-led innovation to stay ahead of the game.

Now in 2024, Sher says there has been "a lot" of activity in the South African tissue market, with some paper mills putting in new machines that mostly came online towards the end of 2023. Has it resulted in overcapacity in the marketplace? "There currently is overcapacity, and it is creating a challenging environment," he says. "However, we are coping well as we have a wide network of customers, and our products are in demand from all our clients."

He expects to see further oversupply in the local market during 2024, and one of the company's main strategies is to continue to innovate: "Last year alone we introduced two new products to the market that have never been made before. The first, a 3ply household towel product, and the second a 4ply bathroom tissue product. We are foreseeing double digit growth in the retail market, and we continue to aim to increase our market share."

Investment and modernisation also remain key. In 2017, Universal Paper Manufacturers (UPM) - owned by Universal Paper and the sister company to UPP - successfully started up its PMP-supplied Intelli-Tissue Advanced 1600 tissue making line at the Ga-Rankuwa mill. TM5 now has a total capacity of 25,000tpy, and the investment boosted the company's production "to the next level" as part of its aim to become the preferred tissue supplier in the Southern African region, offering a range of ultra-premium, 100% virgin fibre tissue paper products to a growing customer base.

The business is now ISO 9001-certified and continues to keep its FSC-certification, which it has held since 2012: "We are particularly proud of the fact that we have also invested in renewable energy and currently our solar panel systems are providing us with 20% of our total energy requirements," he adds. "That amounts to 3MW of energy that we can generate from solar, hence reducing our requirement on the grid by 20%. We have also made some improvements on our coal fired boilers to improve our efficiency, and this has reduced our consumption of coal considerably over the past year. We are also currently busy with a new project

APPLY TO SPEAK

Are you ready to shape the future of the tissue industry? We're looking for speakers to join us at Tissue World Istanbul 2024.

Share your expertise on resilience, innovation, and market adaptability with a global audience of industry professionals.

Conference Theme

Resilience and Innovation: Building Businesses for Tomorrow

Topics include:

- Geopolitical Dynamics: Navigating Turkey's Future
- Regional Tissue Markets: Facts and Forecasts
- Innovative Technologies
- Sustainability Initiatives in Tissue Production
- Adapting to Market Volatility

Scan to apply

tissueworld.com/istanbul

Tissue World | Istanbul

20-21 November 2024

Investment and modernisation remain key: The family-owned Universal Paper & Plastics mill in Ga-Rankuwa' Gauteng province South Africa

for water saving that should reduce our water usage per ton of paper produced."

The past few years have also seen further efficiency refinement: "This has encompassed better proactive maintenance and small upgrades on our tissue machine to ensure we squeeze out every additional ton of paper we can from it."

The business has also improved its outputs and reliability on converting. Future investment plans include investing in new equipment in the company's converting plants, which Sher says will come online in March 2025: "This will allow us to further grow our footprint in the retail stores and improve our outputs on consumer roll products. We are also looking for further investment in our business to allow us to make the next step change, which would increase our capacity dramatically, allowing us to gain further share in the local market."

In terms of its growth strategy in the local market, Sher says the business is always strengthening its position as a preferred supplier in the retail market: "We have seen an increase in supply of finished products and parent rolls here in South Africa, and this has created a challenging environment where there is a lot more competition and a lot of discounted price wars going on between suppliers."

The company's leading brand is Dinu, a premium, FSC-certified household tissue brand. In the Professional division, UPP focuses on AfH products under the Dinu Professional brand and the business also exports some products to neighbouring countries, something Sher says it will continue to increase its market share in the future: "We continue to bring out new products for different markets and have recently introduced products to cater for the lower LSM's and informal markets. This is an area we would like to grow and expand our presence. Our plans are also to expand our market presence in various other channels in the future."

Across South Africa, he says the trends are very much the status quo, with retail still "growing well", allowing UPP to increase its footprint across the retail chains. "Retailers still have a lot of options in terms of brands, but they are also doing a lot of investment into their own brands. Sustainability is not a big driving force as consumers are cash strapped and looking for the best deal they can get. This is driving a lot of cost cutting and manufacturers need to focus on producing simple products in large volumes."

How has tissue buying changed in the past few years following Covid-19? "Consumers habits haven't really changed much. During Covid, we saw a lot more consumption on towel products, but this has since slowed down as people are not sanitising much or washing their hands as much as they did during

Products from UPP's leading tissue brand Dinu: the company continues to bring out new products for different markets

Covid. So, I would say the consumption has gone back to the same levels pre-Covid."

In terms of the energy crisis, Sher says this has been "a challenge for all manufacturers, and made UPP focus on its strengths and deep dive into its operations to become as efficient as possible."

"We have done this well and continue to focus on what we have control of versus what we don't have control over. Consumers are struggling now as there have been big price increases in the past year on all FMCG products, leading consumers to either bulk buy when there are deals or cut out the unnecessary luxuries and just purchase the basics."

And yet for tissue, Sher forecasts that the toilet and towel markets will continue to grow, as more and more consumers are shifting to better quality tissue products. "We anticipate growth for the foreseeable future, as the population is becoming more urbanised and the pool of consumers that are able to buy tissue products is also growing."

In terms of the energy crisis, Sher says this has been "a challenge for all manufacturers, and made UPP focus on its strengths and deep dive into its operations to become as efficient as possible."

Growth in the local retail markets: UPP continues to strengthen its position as a preferred supplier in South African and regional markets

FIVE YEARS ON FROM ITS TISSUE START-UP AFRICAINE PAPER MILLS IS ENJOYING "A NEW OXYGEN" FOR ITS PRODUCTS

Algeria is attracting a lot of trade because of its low costs base. After having to turn away orders due to mill capacity, General Manager Belkacem Becharef is determined to gear up production. He spoke to TWM Senior Editor Helen Morris.

With a warm invitation to visit the company's plant in the very near future, and a thanks for "putting Algeria on the world tissue map," Africaine Paper Mills (APM) General Manager Belkacem Becharef has been working at the company for only the past year and a half, yet his enthusiasm for his new role is clear.

Speaking across a Teams call from his office at the business's 50,000m² Rouïba plant, located 22 kilometres in the eastern suburbs of Algiers and within the 2,381,741km² that is the largest land mass in Africa, APM is now a leading manufacturer of tissue paper jumbo rolls across the Middle East and North African (MENA) region. It moved into tissue production in 2019 when it started up its first tissue machine, an Andritz-supplied PrimeLineCOMPACT TM, equipped with the supplier's latest shoe press technology PrimePress XT Evo. The line has a design speed of 2,100m/min and a width of 2.85m, and now produces 35,000tpy. Product grades of 13.5gm to 40g jumbo rolls include white or coloured tissue paper that is then cut and packed in converting factories for toilet, facial, industrial, kitchen and pocket tissues, napkin, towel, and diapers.

It was the first tissue machine for the now 210-staffed APM, and at the time of its launch, the company said its target was to "produce good paper quality combined with energy-efficiency and be leaders in the MENA tissue market."

Becharef joined in November 2022, having previously studied paper engineering, working in Algeria for 15 years and latterly Kuwait for 20 years: "APM is made by three families, one from Algeria, one from Syria, and another from Saudi Arabia," he says. "We started it because in Algeria there's fewer factories for tissue than is needed, so we saw an opportunity there. Some 30 years ago, there were five or six paper mills here, and our site made white pulp and brown pulp for writing paper and also for fluting and test liner up until 1980/1990. After many problems, they closed all of the factory. Recently they started to make tissue and we now have three or four plants here. In the next four to five years, we will construct one big factory for test liner and fluting, we have signed with Voith, to go alongside the tissue production. We are seeing a lot of increase in demand for tissue paper products, as well as test liner and fluting."

Investment in tissue remains key, and in May 2024 the company announced it was to boost its production capacity across the MENA tissue market after investing in a Toscotec-supplied rewinder line to be installed at the Rouïba site. Start-up of the OPTIMA 1800 slitter is scheduled for the fourth quarter of 2024, and once up and running will process 2,800mm width parent reels using two unwind stands.

Becharef says the new rewinder line "represents a strategic investment – it will resolve bottlenecks in our operations and support our growth in the

MENA market. We have increased our speeds since we started the project in 2019 and reached 85-90 ton daily. We extended our existing rewinder as it couldn't cover all production and we understood that a second rewinder line was necessary. The new rewinder will be placed here in our factory parallel to the existing rewinder to increase our capacity and to make this production with 1ply, aiming for start-up in August/September."

Demand in the local Algerian market consists of 1py and 2ply toilet paper, and the company also plans further export to several countries in the MENA region: "We currently export into the Middle East and Africa, as well as Spain, Portugal, and Greece," he says. "We export 40% of production, and the remaining 60% to the local Algerian market. We feel our market growing now and we are considering a second tissue machine line also, so that we can increase our production capacity from 2,500 monthly to sell 5,000 monthly, because our orders are already 4,000 monthly."

Over the past few years, tissue volume growth in Algeria has been around 5-7% annually, he adds. "After Covid, tissue volumes

"We feel our market growing and we are considering a second tissue machine line also, so that we can increase our production capacity from 2,500 monthly to sell 5,000 monthly."

Africane Paper Mills' Rouïba plant: A Toscotec-rewinder line is due for start-up in Q4 2024

have been growing every year. So in the end, Covid created a new oxygen for the tissue industry here, it created a new market for tissue products. Tissue paper, napkin, kitchen towel … it is now a lot like Europe here in Algeria. Life here is changing, everything is growing and there is need for these products everywhere you look."

He says that previously Algerians needed one kilo per person per year, but now its two or three kilos annually. "Now you find more paper and napkins in restaurants, offices, everywhere. And there are still some places where there is food, but not the paper, so there is potential for us there too. In Algeria, the population is nearly 45m, and the culture here is sitting outside to eat, so there is great potential."

The company recently had a big order of 800 tonnes per month to England, but Becharef says they simply "didn't have the capacity for it". "Because of the situation here with the Red Sea, all the European countries want to bring from Algeria because it is a low price, low energy prices, low water, and electricity prices, etc. They prefer to take from here rather than the other side because it's very far. But here in North Africa, we are just across the sea. We are in front of Europe. From my city here, the factory in north Algeria, it is three hours to south Algeria. Whereas from here to Europe it is one and a half hours."

With the need for increasing production clear, would he consider a converting facility? "We have a lot of competitors here in Algeria for converting, so maybe in the future we would consider a workshop for converting. But in any case, we are busy with our test liner and fluting. But maybe when we have finished that project, PM2, maybe then we come back to converting, or a second tissue line." Watch this space.

"There are still some places where there is food, but not the paper, so there is potential for us there too. In Algeria, the population is nearly 45m, and the culture here is sitting outside to eat, so there is great potential."

Jumbo rolls production started in 2019: Its now a leading manufacturer across the MENA region

TRANSFORMATIVE TAD: AS THE USE OF TAD SYSTEMS INCREASES, TISSUE MANUFACTURERS ARE SEEKING NEW WAYS TO ACHIEVE CONSISTENT PERFORMANCE WHILE ENHANCING OPERATIONAL EFFICIENCIES

Kelly Buchheit, Global Marketing Director, Tissue, Solenis, explains how the company's latest Rezosol TAD fabric release agent enhances tissue strength and softness while improving operational efficiency and worker safety. A TWM report.

Tissue and towel consumers, especially in North America, have high expectations for product softness and strength. The use of Through Air Dry (TAD) technology has allowed tissue manufacturers to meet these high-quality expectations and deliver premium and ultra-premium products with optimal bulk and absorbency. Globally, there are 68 TAD or e-TAD machines producing tissue products today: 51 in North America, eight in Asia Pacific, seven in Europe and two in Latin America (see table on next page). The search to make the drying process more efficient and sustainable while maintaining the desired sheet characteristics intensifies.

TRANSFORMATIVE TAD

Traditionally, tissue manufacturing involves a trade-off between strength and softness. Conventional methods rely on wet pressing to remove water and increase bonding. While

Tissue manufacturing involves a trade-off between strength and softness. Conventional methods rely on wet pressing to remove water and increase bonding. While effective, this process impacts the absorbency of the tissue

	North America	Latin America	Europe	Asia Pacific	Middle East/Africa	TOTAL
Conventional	137	223	350	1810	113	**2633**
TAD / eTAD / UCTAD	59	3	9	10	0	**81**
NTT	5	3	5	0	1	**14**
QRT	1	1	0	2	0	**4**
ATMOS	1	1	1	0	0	**3**
TOTAL	**203**	**231**	**365**	**1822**	**114**	**2735**

Source: ResourceWise May 2024 Mill Asset Data, with edits from Solenis

effective in enhancing strength, this process impacts the absorbency and bulk of the tissue. Converting tissue products from single-ply jumbo rolls into multi-ply, embossed individual rolls also has an impact. While it's a necessary step to prepare rolls for sale on retailers' shelves or for purchase via e-commerce, converting often sacrifices sheet strength to gain softness and bulk. Recognising these limitations, the tissue industry sought innovations that could deliver both strength and softness without compromise, leading to the use of TAD in tissue making.

The TAD process begins with the formation of a wet paper web on a forming wire, similar to conventional wet or dry crepe methods. However, instead of proceeding directly to pressing, the wet web is transferred to a through-air drying section. Here, hot air is drawn through the web to pre-dry the paper fibres. This controlled drying process ensures that the fibres retain their natural structure, maintaining the softness and bulkiness of the tissue. The TAD dryer process is typically followed by a conventional Yankee dryer to crepe the sheet.

Products manufactured with the TAD process exhibit superior strength, allowing them to withstand rigorous use without tearing or disintegrating. At the same time, they offer a luxurious softness that enhances user comfort, making them ideal products for consumers with a desire for soft and strong towel, facial and bath tissue.

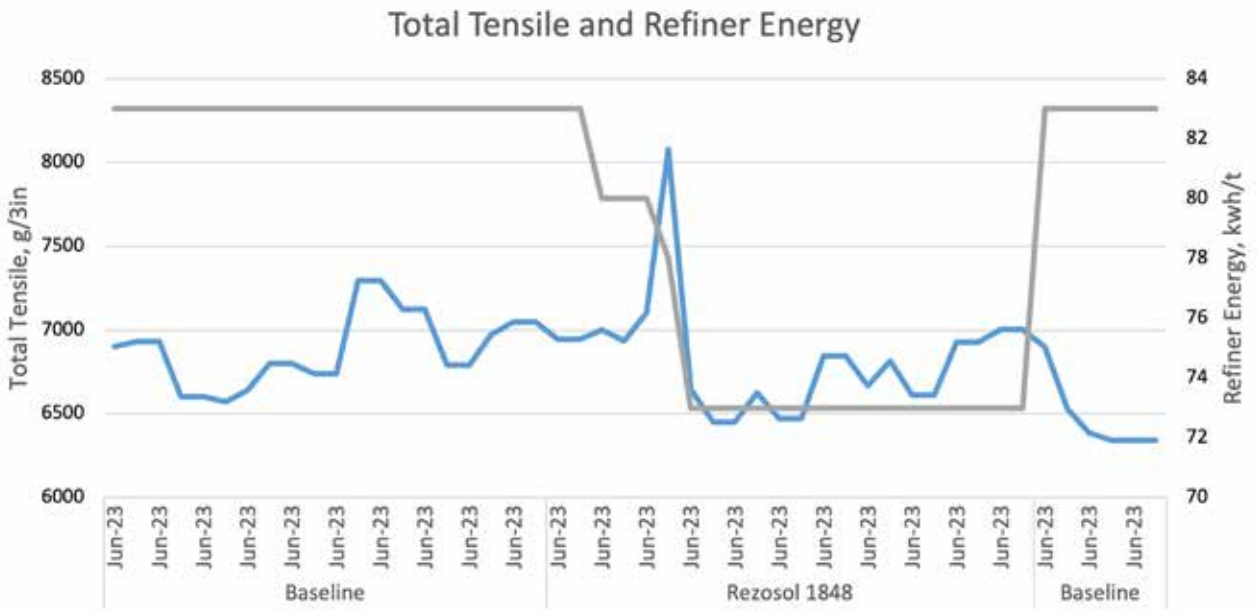
Products manufactured with the TAD process exhibit superior strength, allowing them to withstand rigorous use without tearing or disintegrating. At the same time, they offer a luxurious softness.

BALANCING STRUCTURE AND SUSTAINABILITY

With quality and performance at the heart of differentiated premium tissue goods, manufacturers will focus on their operational performance to ensure consistency of sheet structure over the life of the TAD fabric. For textured fabrics, tissue makers examine the pocket structure over time.

This micro-level detail has a major impact on how consumers perceive the performance of their paper towel or bath tissue.

The use of a release agent on the TAD fabric plays a crucial role in helping tissue producers maintain the sheet structure throughout the drying process. Papermakers have traditionally used mineral or



Above: Results of an application of Rezosol 1848 Release Agent at North American Tissue Producer

hydrocarbon-based oils to aid in the release of the sheet as it separates from the fabric.

However, oil-based products can cause a haze to develop in the machine room, raising worker safety concerns and potentially exceeding product exposure limits.

There are also concerns related to how the TAD fabric release agent is applied. High-pressure needle showers are used to keep fabrics clean and consistently impart the desired tissue sheet structure.

When traditional oil-based release agents are used, they are picked up by the shower water and become part of the mill water discharge, contributing up to 85% of the oils contained in wastewater streams.

A REVOLUTIONARY RELEASE AGENT

Solenis developed a patented mineral oil-free microemulsion technology to replace traditional oil-based products. Rezosol 1848 offers the user a safer GHS profile, with no hazards or product exposure limits, and has a higher product flash point than traditional lubricants.

The product profile results in the elimination of the blue haze tissue operators experience when the TAD process includes the use of traditional oil-based products. Beyond enhanced worker safety, the use of Rezosol 1848 can have a positive impact on the environment by reducing the release of fats, oils and greases (FOG) into the effluent discharge by up to 90% when compared with conventional technology.

Due to its unique and proprietary release characteristics, Rezosol 1848 delivers a consistent gain in tensile strength. A North American tissue producer chose the innovative agent to replace a traditional oil-based release product, resulting in a repeatable and reproducible 15% gain in tensile strength.

With this consistent gain in strength, the customer had the leverage to either:

- Increase the level of broke in the core layer by up to 5%, saving on virgin fibre costs.
  OR
- Reduce refining by 10% and increase machine speed. This resulted in a $6 per ton savings in natural gas consumption.

THE ONLY MINERAL OIL-FREE TECHNOLOGY IN THE MARKET

TAD tissue makers are seeking innovative ways to achieve consistent performance while enhancing operational efficiencies and improving worker safety and manufacturing flexibility. Rezosol 1848 is the only mineral oil-free technology in the market to offer a major reduction in FOG in the wastewater effluent, with measurable gains in operational performance.

This innovative solution can improve your key performance indicators, maximise efficiency and reduce manufacturing costs.

This article was written for TWM by Kelly Buchheit, Global Marketing Director, Tissue, Solenis.

DISPERSE, DETACKIFY, FIX, AND MONITOR – FOUR KEY STEPS TO CONTROL STICKIES

A more refined solution to the increasing challenge is needed, says Albert Allen, Principal Specialist, Deposit Control, Pulp & Paper, Kemira. A TWM report.

The increase in recycled content and reduced water usage in tissue making has intensified operational issues and defects caused by stickies. Stickies are made up of agglomerations of hydrophobic particles (HP), for example adhesives, coatings, and inks in recycled materials, and are difficult to manage.

They are a significant challenge in the papermaking industry, particularly due to their tendency to adhere to machinery and finished products, causing operational issues and defects. These contaminants exhibit a range of melting points and degrees of tackiness, variously based on their chemical composition. This article presents a comprehensive and innovative solution to stickies control, combining a novel fixation chemistry and unique real-time monitoring technology, to enhance machine performance and product quality.

Several factors are leading to industry-wide increases in the occurrence of stickies-related issues. While many of these are beneficial for the environment, they lead to struggles in the papermaking process. The HP particles that make up the stickies often originate from various recycled sources that are used to displace virgin fibres in tissue grades.

As mills work to reduce the overall amount of water used to make paper, there is less dilution of contaminates and fewer ways to purge these unwanted materials from the process, leading to a higher level of HP contaminates and more potential for deposits and defects. Even weather extremes can impact this as higher temperatures can warm storage tanks and change the properties of the contaminants in the process, making them more tacky and likely to agglomerate.

Managing all this HP material is crucial for maintaining the quality and efficiency of tissue production. Traditional approaches to controlling stickies have been varied, focusing on individual stages of the production process, from pulping to effluent treatment. They have employed methods like detackifiers, enzymes, and dispersants.

However, these methods often lack a systematic approach, addressing only parts of the stickies problem. A more refined solution for stickies control is needed based on three key principles for managing HP particles:

- Keep HP particles small (microstickies) and stable
- Minimize the tackiness of the microstickies
- Fix these microstickies on the fibre

All recycled fibre and broke sources contain some HP contamination that will liberate as the paper is repulped. The first lines of defence are the physical removal processes, such as cleaning and filtration. Any material left over needs to be managed according to the strategy above.

These particles are hydrophobic and tend to agglomerate in water systems. Therefore, the first step to keep the particles dispersed is to maintain these microstickies rather than allow them to increase in size to the point where they become noticeable defects and deposits. Once the HP

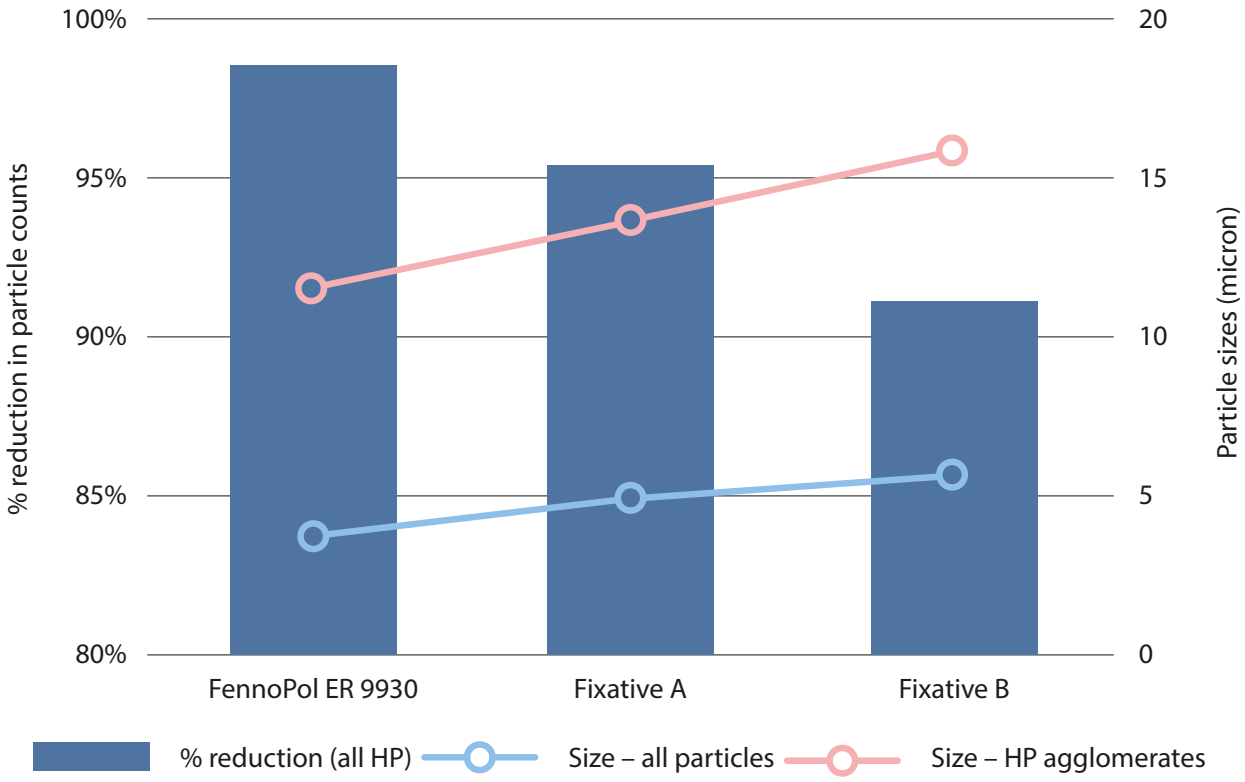


Figure 1: Kemira's novel fixation chemistry, FennoPol ER 9930, delivers performance in reducing particle counts. Results compare fixative performance at equal fixative doses.

particles are stabilised as microstickies, the next step is to detackify or chemically passivate the particles. This will further prevent any tendency to move out of the water and stock mixture and deposit or form agglomerates on the fibres.

Finally, these pacified microstickies need to be thoroughly fixed to the fibres. Fixation will allow the contaminates to be retained in the sheet and removed from the system with the sellable paper. This is a primary route for removing the HP particles from the entire system and preventing the build-up of this material in the water loops, where they can agglomerate and lead to production upsets.

The final piece that is needed for effective control is monitoring. A method is needed to make meaningful measurements that can be related to process changes, thus enabling proactive chemistry adjustments to maintain programme performance.

This article presents a full-system approach to stickies control incorporating all three of these principles and sophisticated monitoring, which allows for chemistry adjustments to maximize program efficiency for improved machine performance. Two primary focus areas will be on a novel fixative, Kemira FennoPol ER 9930, designed for HP particle retention, and Kemira Flyto measurement technology.

NOVEL FIXATION CHEMISTRY

FennoPol ER 9930 represents a significant advancement in industrial fixatives, particularly in the paper production industry, where managing stickies is a critical aspect of the process. The innovative chemical structure of this cationic polyacrylamide emulsion, characterised by its high charge and low-to-medium molecular weight, is engineered to optimize the bonding process. Its mechanism of action is designed to target small stickies, effectively bonding them to fibres without the formation of larger, problematic agglomerates. This precise action helps maintain the integrity of the paper quality without disrupting the production process.

The application of FennoPol ER 9930 is streamlined for efficiency. It is a pump-and-go product that eliminates the need for a make-down unit, simplifying the integration into existing systems and reducing preparation time. This ease of use, combined with its superior performance in reducing particle counts and turbidity, positions FennoPol ER 9930 as a leading solution in the industry. The ability to maintain the smallest particle size is particularly noteworthy, as it directly correlates with the quality of the final paper product and the effectiveness of the stickies management process.

FennoPol ER 9930 has demonstrated the best performance, setting a new benchmark for others to follow, as shown in Figure 1. The reduction in particle size and counts not only enhances the quality of the paper but also contributes to the longevity and efficiency of the machinery used in the tissue-making process. By ensuring a more controlled and cleaner operational environment, FennoPol ER 9930 aids in reducing downtime and maintenance costs, which

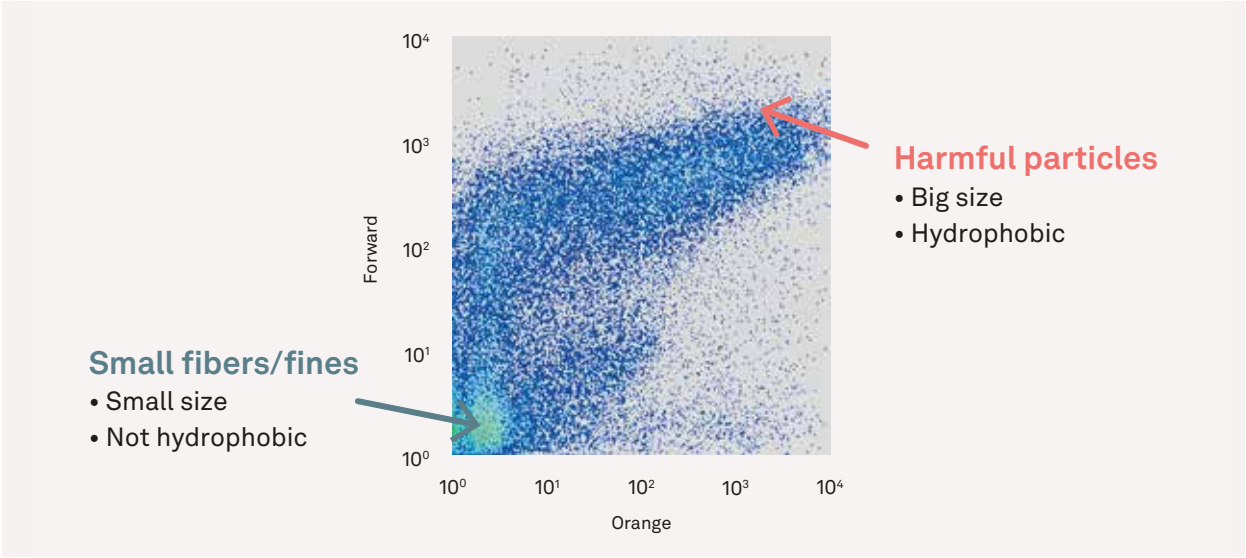


Figure 2: Kemira Flyto provides enhanced visibility to the size and count of particles, distinguishes hydrophobic particles, and reveals points of agglomeration. Here, the data shows the regions with particles associated with stickies outbreaks (harmful particles) vs. the benign particles (small fibres/fines and other neutral particles)

can lead to significant economic benefits for paper manufacturers. Moreover, the environmental impact of the paper production process is an ever-present concern, and the introduction of FennoPol ER 9930 offers potential ecological advantages. By improving the management of stickies, it may reduce the need for additional chemical treatments and the associated waste, thus contributing to a more sustainable manufacturing approach.

In summary, FennoPol ER 9930 is a testament to the ongoing innovation within the paper industry. It provides a solution that not only enhances the quality of the product but also streamlines the production process, reduces operational costs, and supports environmental sustainability. Its development reflects a deep understanding of the challenges faced in stickies management and showcases a commitment to advancing the industry through scientific and technological excellence.

UNIQUE HYDROPHOBIC PARTICLE MEASUREMENT

To achieve the next level performance and optimisation of fixation, enter Kemira Flyto measurement technology. Originally a well-known analytical method in medicine, flow cytometry, Flyto analyses particles in fluid suspension. It measures light scattering and fluorescence of each individual particle, as shown in Figure 2. Particle identification and classification are achieved by staining with selective fluorescent dyes. In the papermaking process, Flyto can count and characterise the particles in process water, filtrates, and pulp suspensions, providing crucial information for an efficient and optimized treatment process.

Flyto provides a breakdown of the size and count of the particles by categories, distinguishes hydrophobic particles, and highlights the points of agglomeration in the process. It enables a process survey to determine problem areas, pinpoint target treatment areas, and identify problem-causing raw materials. It also allows for observing the impact of dispersants and fixatives. For instance, it can show how a new fixative chemistry improves the retention of hydrophobic particles, leading to a significant reduction of particles in the headbox and water system.

CASE STUDY: HOLISTIC STRATEGY IN PRACTICE

An AfH towel machine had completed a project to close its water loop by reclaiming nearly all the white water, while also increasing the amount of recycled fibre and broke it was consuming. After completing these changes, it began seeing increased issues with stickies. This manifested as deposition on the fabrics, holes, and machine breaks.

To begin understanding the problem, Kemira Flyto was used to survey the HP particle content throughout the process. The broke was found to be the largest contributor of HP particles, with nearly two times the number of particles of the other fibre sources. The survey also showed a trend of increasing particle size following the addition of much of the papermaking chemistry. This information directed the structure of the stickies control programme. The primary dispersant dose was applied to the broke stream where most of the HP material was indicated, and the fixative was added prior to other machine chemistry to attach the microstickies to the fibres before they could agglomerate.

Upon implementation of the stickies control programme, further Flyto testing was conducted to monitor the impact of the chemistries on the makeup of the hydrophobic particles in the process. Changes were seen in the size of particles coming from the fibre sources, with the largest decreases occurring in

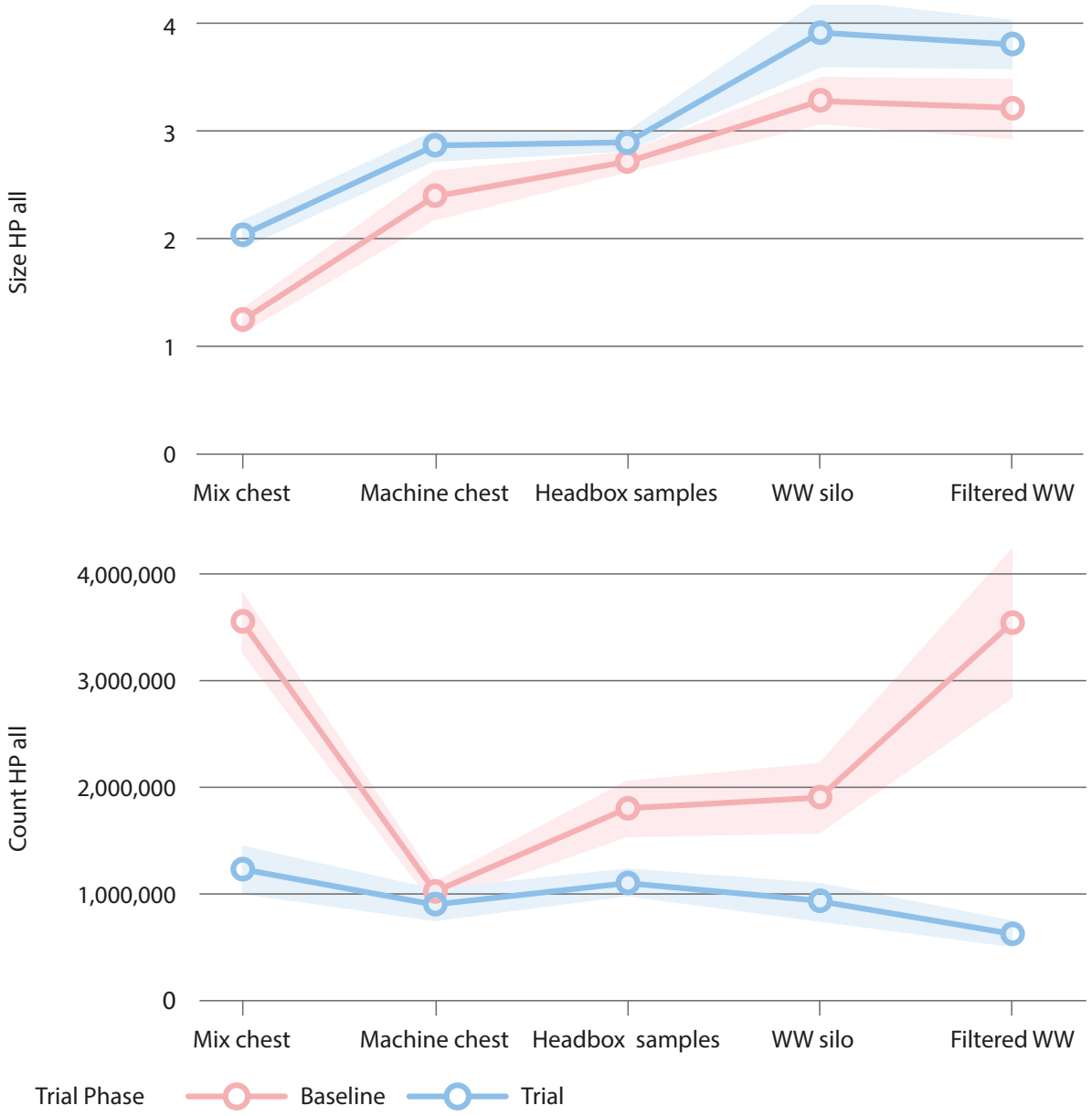


Figure 3: The application of new fixative significantly reduced the number of hydrophobic (HP) particles in the AfH towel production. Particle size did not significantly change, which indicates that the trouble-causing particles are retained in the sheet and not agglomerating in the process.

the recycled fibre and broke. The application of the fixative resulted in a considerable reduction in the number of HP particles in the headbox and white water without a significant change in the particle size, as shown in Figure 3. This lack of particle size increase indicates that the reduction in particle count is due to them being retained in the sheet and not agglomeration. During this time, the machine experienced a 50% reduction in breaks, and little to no time lost due to removing deposits from the fabrics. In short, stickies were eliminated as a day-to-day issue on the machine.

CONCLUSIONS

Agglomerations of HP or stickies come from a variety of raw material sources widely used in the industry today. These containments can build up in the process to the point that they negatively affect production performance and final product quality. Kemira has developed and tested a whole system control strategy to reduce the concentration of HP particles and their agglomeration and to mitigate the resulting machine issues. When coupled with sophisticated real-time monitoring tools, tissue makers can achieve and maintain conditions that result in optimal performance through adjustments in the control programme.

This article was written for TWM by Albert Allen, Principal Specialist, Deposit Control, Pulp & Paper, Kemira.

THREE LEADING COMPANIES REFLECT ON A YEAR OF PROGRESS

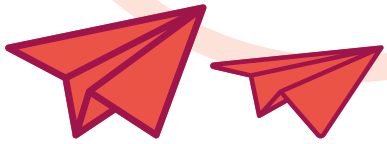
In 2023, TWM's Country Reports interviewed tissue mill executives in Germany, South Korea, North America, the Middle East, Spain, and Brazil. Here, we hear advances in LC Paper's converting investment and growth in Spain, Essity's "disruptive" pilot project at its Mainz-Kostheim plant in Germany, and the WEPA Group's striving for continuous optimisation – and expansion into the UK tissue market.

LC Paper: a complete rebuild of its recycled stock preparation, and a 30% share in internal converting

In February 2023, Spain's LC Paper's was working towards starting up a new converting production site. Following the Covid years, Chief Executive Pau Vila discussed how the company had been "very exposed" to the HoReCa segment both directly through converted products as well as indirectly through selling parent reels to converters which were oriented at the HoReCa segment. Because of that, he said at the time, "the Coronavirus crisis produced a very significant demand reduction."

In response, the company diversified and entered the At-Home market through its own converting (Dalia brand and third-party brands) with a clear bet on e-commerce products. The segment, he said, "grew exponentially" during Covid before later stabilising, while the HoReCa segment had fully recovered.

In February 2023, Spain's LC Paper's was working towards starting up a new converting production site. Following the Covid years, Chief Executive Pau Vila discussed how the company had been "very exposed" to the HoReCa segment



Plans included the ramp up of a newly launched Fornells production site for converting in the second quarter of 2023, and Vila expected to see "significant growth" in the At-Home channel due

to "both the market having higher sensibility to sustainable formats, and our increase in production output for this product family thanks to the launch of our new Fornells production site."

Now in June 2024, Vila confirms that in the summer of 2023, the new production site, the third for the company, had been successfully launched in the municipality of Fornells de la Selva, Catalonia. The Fornells site is dedicated to the production of converted tissue products for the domestic market, both in e-commerce formats and smaller retail packs for supermarkets and local stores. The 5.500m2 facility is the result of a €5m investment to grow in tissue converting and is in addition to the existing approach for this category of products – plastic-free packaging, production with 100% renewable energy, and certified carbon-neutral footprint – that Vila says LC Paper has pushed through over the last few years.

"After the launch of this converting site, LC Paper reaches a 30% share in internal converting of its 50,000tpy production capacity, with the rest being sold to third-party converters," he adds. "This partial vertical integration has awarded LC Paper with additional operational flexibility and resilience."

As for changes and developments in the local tissue market, on one side he says it has continued to embrace sustainability initiatives by the progressive phase-out of plastic packaging and a faster adoption of unbleached fibre products. "However, the innovation and sustainability dynamics of the tissue industry are now challenged by a negative costs scenario due to the severe growth on the pulp market prices, fuelled by the Red Sea situation and other global situations which impact the global pulp trade flows."

In Spain, he adds the most significant merger and acquisition operation was the purchase of Gomà-Camps' Spanish consumer business and Gomà-Camps France by Portuguese-headquartered Navigator. In the scope of the Navigator's growth strategy in the tissue segment, the company also then completed the purchase of UK-based converter Accrol Group Holdings for £131m in April 2024.

Is he still seeing growth in the Spanish market? "In the past fiscal year, we have observed a slight total growth in our national market of Spain, despite a stagnation of the consumer market growth. This is due to national tourism enjoying a strong recovery in the past months, now exceeding the pre-Covid levels in many cases. The accumulated inflation during the past three years together with the current cost increase of pulp and the already budget-oriented At-Home tissue market in Spain has increased the already high relevance of distributor brands in this geography, while manufacturer brands remain weaker than in other European markets."

LC Paper is "executing a complete rebuild of its recycled stock preparation section which will allow significant improvements both in the quality of the recycled pulp as well as in the efficiency of the sorting process."

For the rest of 2024, Vila says LC Paper is "executing a complete rebuild of its recycled stock preparation section which will allow significant improvements both in the quality of the recycled pulp as well as in the efficiency of the sorting process, so that the separation of the waste paper between the actual paper elements and non-paper traces is fast and precise."

This installation will be shared for both the MG kraft production line and the tissue production line, with recycled tissue being focused on in the unbleached market segment: "Within LC Paper's strategic views is the conviction that both domestic and professional customers will continue to increment their adoption of unbleached grades as the market understands that the colour choice does not impact the hygiene level of the product in any way.

"The new stock preparation section represents an investment of €5m and has received a grant of approximately €2m from the Next Generation European funding scheme, due to its contribution to the minimisation of waste. The facility will be operational by early 2025."

Circular economy: Essity's pioneering Mainz-Kostheim plant in Germany

Essity: the circular economy pioneer partners with Voith to create a new "disruptive" concept that revolutionises and rethinks tissue manufacturing

Last year, Thorsten Becherer, then Site Manager at Essity's Mainz-Kostheim plant, discussed with TWM the latest advances at the company's award-winning e-save programme following the launch of its €4m pilot project to run a paper machine CO2-free with green hydrogen at Kostheim.

The plant is the main factory for Essity's Tork brand and its hygiene products, and in 2017 was the driver behind the world's first circular economy for used paper towels with the Tork Paper Circle. Within the Tork Paper Circle, used towels are collected separately from customers in the hotel and catering industry, from companies or administrations and returned to the production process at the Kostheim site.

In 2023, the company then achieved a breakthrough on the way to net zero at its site – it produced paper CO2-free using green hydrogen as alternative fuel.

Now in June 2024, Essity continues working towards CO2-neutral production by 2050. Most recently, the company announced a partnership and pilot with Voith, which it said will create a new "disruptive" concept that revolutionises and rethinks tissue manufacturing.

Successful test runs have already taken place on a laboratory scale, and the concept is now being further researched and will enable CO2-neutral tissue production, lower freshwater usage by 95%, and lower energy consumption by up to 40%.

Site expansion, acquisition and recycled cardboard boost WEPA's year

In April 2023, European tissue giant WEPA Group discussed its ambitious plans to maintain the top spot, and its 25% market share in its home country Germany. Then, the company had five German production sites in Giershagen, Leuna, Kriebstein and Mainz plants produce for its Consumer business unit and its Müschede plant for its Professional business unit.

Around 80% of its revenue was generated by its Consumer business unit and approximately 20% by its Professional business unit. The yearly production capacity of the German plants ranged from 60,000 to 127,000 tonnes per plant. Operational excellence was – and remains – key, and the company emphasised how it would continuously invest in state-of-the-art manufacturing technology.

The global tissue market had, at the time, been characterised "by multiple external crises" including supply chain disruption, the energy crisis and inflation. WEPA enforced it had "adapted in a very agile way to master these challenges". And that as a family business, it had clearly positioned itself "to become number one in sustainability in the industry."

Now in June 2024, the company confirms that its operation excellence efforts remain key, and it has continuously invested in state-of- the-art technology at its sites. In June 2023, WEPA invested in its Kriebstein mill by integrating the stock preparation unit of the insolvent Kübler & Niethammer Papierfabrik Kriebstein. This has meant that WEPA now manufactures recycled products in an integrated manner at Kriebstein, and offers recycled paper to third parties beyond its own needs. In the context of the expansion of the site, WEPA has hired 40 former Kübler and Niethammer employees.

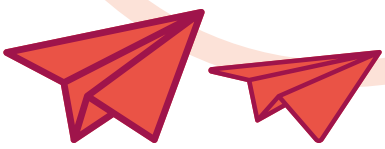
In January 2024, WEPA Professional announced the successful acquisition of the UK's Star Tissue UK, a prominent British hygiene paper provider based in Blackburn, Lancashire. With this step, WEPA says it has underlined its strategic commitment to further growth in the UK's professional hygiene market.

Generally, the company also sees "huge interest in its products made from recycled cardboard", and still sees growth potential in this area.

Depending on the market WEPA is still seeing a growth in the private label business, which it adds "comes with additional opportunities for us as a private label specialist: price levels remain on a high level, so lots of shoppers are looking for alternatives like private label products – without compromising on quality."

For the rest of 2024 and 2025, the company says "investments have to make a clear contribution to greater sustainability, and we will keep investing in our mills in the future. We strive for continuous optimisation of our existing assets. From our point of view, our products made from recycled cardboard will be the future hygiene paper, so we expect further growth in this area in the coming years. In Germany, a lot of retailers offer our products already and we aim at convincing more and more consumers that hygiene paper made from recycled cardboard is sustainable on the one hand, but that it is also a very soft and high-quality product."

Now in June 2024, the company confirms that its operation excellence efforts remain key, and it has continuously invested in state-of-the-art technology at all its sites.



We Tech Care

We believe in technology that is part of a larger project.
In a design that creates a sustainable future for all.
We believe in innovation.
In change that opens up new paths,
while balancing progress and the quality of life.
We believe in responsibility.
In a global vision that thinks about everything.
About machines, about people, about the planet.

toscotec.com

TOSCOTEC
A Voith Company

WILL PANIC-BUYING DURING COVID DAMAGE TISSUE'S REPUTATION FOR QUALITY LONGER TERM?

Revenues from tissue sales rose by as much as 140% during the last pandemic. With climate change likely to increase the risk of further outbreaks, economics analyst Dr Phillip Lawrence, University of Sydney & Crown Institute of Higher Education, asks if the lessons have been learned.

Revenue sales figures for the tissue industry during the Covid pandemic broke all the records.

Research across sixteen countries showed that several nations experienced increases approaching, and in one case, surpassed 100%.

Italy topped countries in the northern hemisphere with an annual toilet paper revenue sales rise of 140%. The equivalent in Australia was 98%, Spain 82%, and the UK 80%. In the US, revenue from toilet paper sales rose by 60%.

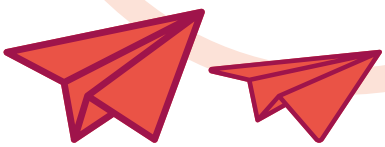
The figures, given that the pandemic had such a devastating impact on many other businesses such as airlines, hotels, restaurants, retail and entertainment outlets, came in research by the German online data platform Statista.*

Impressive as the figures are, they were still outperformed by the pharmaceutical industry, where share values of companies in that sector revealed astronomical growth.

As the statistics confirm, the pandemic's onset led to a surge in demand for tissue products, particularly toilet paper, as consumers stocked up on essentials due to community lockdowns and irrational fears of shortages, and perhaps also for emotional comfort.

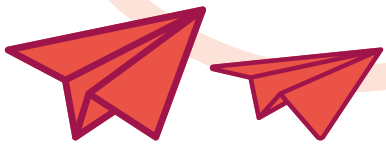
Panic buying caused extensive shortages, which caused retailers to impose restrictions on the number of products individual purchasers could buy per shop visit. Remarkably, evidence of panic buying was repeated worldwide as if a secret internal switch suddenly turned on in every human.

The pandemic's onset led to a surge in demand for tissue products, as consumers stocked up on essentials due to community lockdowns and irrational fears of shortages.



* *Stockpiling Consumer Market Outlook: Toilet Paper Producers Roll'ing in the Dough, 2020.*

Panic buying toilet paper is not a new phenomenon, with its first major instance occurring in 1973 in the USA. The catalyst? A joke by late-night TV host Johnny Carson.



The reasons for the 'collective' panic buying everywhere turned out to be an excellent area of academic study. Academic research revealed almost 30,000 articles which tried to understand why people suddenly needed to buy as much toilet paper as possible.

Panic buying toilet paper is not a new phenomenon, with its first major instance occurring in 1973 in the USA. The catalyst? A joke by late-night TV host Johnny Carson about toilet paper. The joke, misinterpreted by many as a serious warning on supply, led to a frenzy of buying that left supermarket shelves bare.

In response, official announcements trying to dissuade the masses from hoarding as many rolls as they could carry from stores had little impact.

But why toilet paper? According to some academic research, it's because this simple tissue symbolises how people interpret civilisation. This raises interesting questions about consumer behaviour and the future of the tissue industry.

The Covid pandemic was not the first significant virus episode to cause widespread infection worldwide. Since the start of the century, we have experienced five (perhaps six) major virus events, the most significant of which is Covid. The SARS virus was the first, followed by Bird flu, MERS, Swine Flu, and Covid. Also, AIDS/HIV went global as the sixth. In two decades, we have entered an era that could be clearly defined as one associated with viruses. Some scholars have referred to Covid-19 (I believe the series of viruses collectively) as the century's defining moment. However, unlike Covid-19, the other virus events did not spur the hoarding toilet rolls.

The critical issues surrounding toilet tissue production before the pandemic were relegated in importance in the dash for supply. Sustainability took a back seat during the period but has now rapidly returned to be central to the sector's performance. Profitability remains a core issue, not so much around sourcing, production, and conversion, but more about customer expectations on price and quality and the pressure of competition. The danger for the sector following such an intense period of astronomical and unusual growth is that the product is seen to be even more of a consumable, and reduced in quality value. When people buy in bulk, they are really just after numbers. In the next few years, it could be that we see toilet paper becoming an invisible product with only utility value.

A challenge will be how to get customers to understand again the difference between one brand and another. Of course, this is a blessing for many firms at the lower end of the market. For the high-quality end, their product needs to be re-launched to be re-appreciated by the consumer. The Covid-19 episode has caused some interesting challenges for global businesses, not least how the tissue industry will develop and market its products in the immediate years to come.

Covid will not be the last virus to cause problems with globalisation. Some of the critical lessons we learned from the pandemic will hopefully be remembered when the next one arrives. For this reason, firms must take stock of what happened during the episode to their business ecosystem to be in a good position to respond positively – and rapidly - when the next one comes along. What we know from historic global events is that governments tend to respond irrationally but are rational about it. For example, in the late 1980's, when the world faced an economic downturn, governments responded by pumping up national interest rates around the world. Some countries saw home mortgage rates reach more than 30%. In the 2008 global financial crisis, governments responded by reducing rates, which, in some cases, were below zero. These were extreme but opposite reactions to difficult economic conditions. What will they do next time?

Our changing global climate is likely to drive the next major pandemic event. Parts of the world are becoming wetter and warmer each year, allowing diseases to flourish as never before. Given that there have been five (or six) since the start of the century, it would seem statistically likely that we will see another major one relatively soon, perhaps even by the end of the decade. Chances are people would have learned that panic buying toilet rolls is irrational behaviour, but how will governments respond given their poor track record of learning from the past?

ADVERTISER'S INDEX

SUBSCRIPTION

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

Sign up to the bi-monthly Tissue World Newsletter and six annual Digital Magazines here: **www.tissueworldmagazine.com/newsletter/**

Tissue World | Istanbul

20-21 November 2024

Hilton Istanbul Bomonti Hotel & Conference Centre

Connect with your future customers

Unprecedented Growth. Unmissable Opportunity.

Türkiye's tissue production has soared by 70% over the past decade, making Istanbul the perfect backdrop for the next edition of Tissue World on 20-21 November.

Showcase your innovations, discover the latest advancements, and gain insights from industry leaders. Find the perfect partners to propel your business forward.

Scan to learn more

tissueworld.com/istanbul

#TWIstanbul

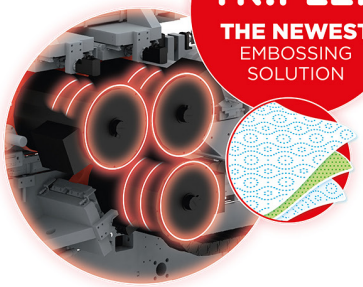
BAOSUO

GIOTTO TECHNOLOGIES

YD-PL450SE Non-Stop Rewinding Line

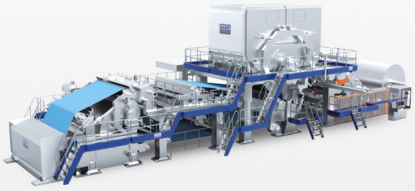
Toilet roll, Kitchen towel, Maxi roll
ALL IN ONE LINE

DISCOVER
TR:PLER
THE NEWEST
EMBOSSING
SOLUTION



WHEN **ITALIAN MASTERY**
MEETS **CHINESE ATTITUDE**
THE **EXTRAORDINARY**
BECOMES **REAL**

BaoSuo Enterprise Provide You The Turnkey Solution For Tissue Production



Tissue Machine

Converting Machine

Packing Machine

Baosuo Paper Machinery Manufacture Co., Ltd.
Tel:+86-757-86777529 YouTube channel:Baosuo Group
E-mail:master@baosuo.com Https://www.baosuo.com

giottotechnologies.com