January/February 2025 | Issue #1

# Tissue World

Magazine

The independent news provider for the global tissue business

## GERMANY

### Three years that changed the market

Plus

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China tissue: State of the Nation report

Tissue World Düsseldorf
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# IN THIS ISSUE...



Cover: German shoppers have embraced a version of the much heralded 'new normal' which has emerged after the pandemic.

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# Three years that changed the tissue market in Germany

Helen Morris, Senior Editor, Tissue World Magazine

## CONSUMERS ARE SEEKING OUT SUSTAINABLE TISSUE, AND ARE WILLING TO PAY MORE

German shoppers – not previously known for their eagerness for change – have embraced a version of the much heralded 'new normal' which has emerged after the pandemic. TWM's *Country Report* reveal the changing attitudes in this most mature and saturated of markets. Always strong on ecological principles – better hygiene, sustainability, circular and digital manufacturing, and intensified innovation – these are now stronger still.

It has to be at the right price, most of the time. The shock of a 9% inflation rate just a few years ago – now at roughly 2.2% – lingers. But, Euromonitor's Voice of the Consumer Lifestyle Survey finds that consumers want principled tissue "even if the price point was higher."

Another new emphasis is easing out traditional shopping methods: more e-commerce for the best price from the widest range of brands, ordered any time, from anywhere, delivered quickly, setting up subscriptions, and auto-reordering. Yet the report by *ResourceWise* outlines the "cautious nature" of German tissue makers: existing capacity optimised; no new mills through to 2027, with a net gain of just two machines. Read our *Operation Reports* to see how they've grasped the mood.

## WIDER FASTER GREENER – CHINA'S TISSUE

2024 in China saw 30 companies from 11 provinces, cities and autonomous regions launch capacity with 70 TMs put into operation. 'Modern production' capacity increased by around 1.618m tpy. With local consumption saturated, exports dominated. January to November saw a growth of 23.49%, reaching 1.234m tons. TWM carries a summary of China National Household Paper Industry Association's (CNHPIA) annual report. It emphasises technology improved manufacturing, product quality, and allowed category segmentation … all under the banner Wider, Faster, Greener.

This 'modern production,' in one context, is behind more advanced countries. Two reports in *Global News in Brief* puts China's modernisation into perspective. Hengan has boosted its TAD production with a second machine, Toscotec-supplied, at its Fujian HQ. The first came online in 2023. It is the second in all China. The second report is from North America. Irving Consumer Products in Macon, Georgia, is bringing its third TAD machine online to boost ultra-premium production – the third in one company alone.

## QUOTE OF THE EDITION:

Metsä Tissue Chief Executive Esa Kaikkonen offers a timely warning about the dangers of overcomplicating things. New software is coordinating operations across key plants in Europe. He says: "The Tissue MES Solution enables us to manage our mills with data, focusing on correct things, at the right time, and in the right order."


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In Tissue World all measures are metric and all dollars ($) are US dollars, unless otherwise stated.

# CHINA: STATE OF THE NATION TISSUE REPORT 2024 – SECTOR BY SECTOR

Early last year TWM revealed the core issues facing the Chinese tissue industry during 2023, as reported by its national trade body, China's National Household Paper Industry Association (CNHPIA). The new annual report for 2024 is now in, and is carried below.

Given the dramatic advances made in 2023 in technology, in market competition and innovation, and in production levels across the whole supply chains through 'collaborative growth,' CNHPIA urged companies to meet the major problem of overcapacity by investing "rationally."

Have they done that? They have certainly invested and stepped-up production, with new mills and new machines. Previous paper companies have continued their transition to tissue. With the home market saturated, exports have risen.

Here, TWM highlights the main points – and weighs its projections against wider industry trends.

2024 saw 30 companies from 11 provinces, cities, and autonomous regions launch new capacity. Some 70 tissue machines put into operation. 'Modern production' capacity increased by around 1.648m tons per year.

The integration of pulp and paper companies continued supply chain improvements, adding significantly to output.

(China's tissue and hygiene paper market is projected to reach $70.49bn in revenue by 2024: CAGR of 7.19% projected through to 2028.)

Technology improved manufacturing, product quality, and allowed category segmentation … all under the banner Wider, Faster, Greener.

With local consumers well catered for, exports dominated the market. January to November saw a growth of 23.49%, reaching 1.234m tons, valued at $2.19bn year-on-year. Imports stood at 33,600 tons, down slightly on 2023.

'Social welfare responsibilities' were met. These included provisions for the elderly, supplying products to victims in natural disaster areas, promoting women's health, supporting medical advances, youth development and environmental protection efforts.

New paradigm' quickly developed parent issue roll production across the supply chain

After 30 years of rapid development, China's tissue paper industry has made significant progress in production technologies, product quality, and equipment manufacturing. In 2024, the industry has witnessed increased modern production capacity, advanced intelligent manufacturing, enhanced product quality, and segmented product categories.

Meanwhile, a new development paradigm has quickly emerged within the industry, with increasing production concentration of parent tissue roll. Upstream and downstream enterprises in the industry chain utilise respective strengths for win-win cooperation. The development and changes in the industry over the past year form four main aspects.

## PART ONE: CAPACITY GROWTH IN THE INDUSTRY

Projects launched in 2024: Modern production capacity increased by around 1.618m tons per year. A total of 30 companies from 11 provinces, cities, and autonomous regions launched new capacity. Some 69 tissue machines were put into operation in total. Among them, 65 tissue machines made in China dominated in the new capacity and were mainly placed in Shanxi, Guangxi, Hubei, and Hebei.

Secondly, the industry saw an accelerated formation of a new industrial paradigm and improved industry chain.

Integrated pulp and paper enterprises are expanding their capacity to drive collaborative growth of the industry chain. Companies such as Lee & Man, Taison, Shaoneng, Sun Paper, Asia Symbol, and Liansheng which joined the paper industry in recent years have further expanded their production capacity in 2024. Compared to 2023, an additional 485,000tpy was added,

bringing their combined total capacity to 4.405m tons per year. These companies leverage their advantages of pulp and paper integration, primarily producing and selling parent tissue roll. This fosters complementary strengths and win-win cooperation between brand manufacturers and pulp and paper manufacturers. Specifically:

### 1: Lee & Man
2023 Designed capacity/(10,000tpy): 132.5
2024 Designed capacity/(10,000tpy): 147.5

### 2: Taison Technology (Group) Co.
2023 Designed capacity/(10,000tpy): 125.5
2024 Designed capacity/(10,000tpy): 141.5

### 3: Shandong Sun Paper Co.
2023 Designed capacity/(10,000tpy): 37
2024 Designed capacity/(10,000tpy): 49.5

### 4: Shaoneng Group
2023 Designed capacity/(10,000tpy): 38
2024 Designed capacity/(10,000tpy): 38

### 5: Asia Symbol
2023 Designed capacity/(10,000tpy): 35
2024 Designed capacity/(10,000tpy): 35

### 6: Liansheng Pulp & Paper (Zhangzhou) Co.
2023 Designed capacity/(10,000tpy): 24
2024 Designed capacity/(10,000tpy): 29
Additionally, Liansheng Pulp & Paper (Zhangzhou) Co. further expanded its pulp production capacity in July 2024 by launching a 1.66m tons per year bleached sulphate pulp project.

Royal Golden Eagle acquired Vinda, and the company continues to leverage its upstream supply chain advantages in energy, pulp, and parent tissue roll, along with global industry resources connectivity. This will improve Vinda's management efficiency, profitability, and strategic synergies.

Golden Hongye further increased capacity to elevate market competitiveness among top brands. Golden Hongye (Nantong) Co. launched the phase one tissue paper project with capacity of 780,000tpy in 2022. In 2024, phase two tissue paper project, with capacity of 1.26m tons per year, finished all approval procedures and is ready for construction.

## PART TWO: NEW TECHNOLOGIES AND PRODUCTS

In 2024, tissue machine manufacturing continues to improve, product quality continues to upgrade, and product categories further segmented.

### Tissue machines – wider, faster, and greener

China's tissue machines achieved technological breakthroughs, reducing long-fibre proportion, and lowering electricity consumption while improving product quality. For example, crescent tissue machines reached a maximum width of 4,200mm with a top speed of 1,850m/min. Hand towel machines reached a maximum width of 5,600mm and speed of 800m/min.

China's soft boot press technology was firstly used in production. Headbox design was also optimised, and permanent magnet motors and maglev turbine vacuum pumps were applied.

### Post-processing and packaging equipment – more flexible, intelligent, and eco-friendly


**Continued R&D and innovations:** enterprises enhanced product quality and intelligent manufacturing levels

## NEW MODERN CAPACITY IN DIFFERENT REGIONS FROM JANUARY TO DECEMBER 2024

| No. | Province | Capacity /10000 tpy | Number of tissue machines | Number of newly-built tissue plants |
|---|---|---|---|---|
| 1 | Shanxi | 39.5 | 16 | 3 |
| 2 | Guangxi | 35.5 | 14 | 5 |
| 3 | Hubei | 27 | 13 | 3 |
| 4 | Hebei | 25 | 11 | 10 |
| 5 | Anhui | 9.8 | 5 | 2 |
| 6 | Liaoning | 5 | 2 | 2 |
| 7 | Sichuan | 5 | 2 | 1 |
| 8 | Fujian | 5 | 2 | 1 |
| 9 | Henan | 4 | 2 | 1 |
| 10 | Zhejiang | 3 | 1 | 1 |
| 11 | Guangdong | 6 | 2 | 1 |
| **Total** | | **164.8** | **70** | **30** |


**Increasing start-up of TAD and TAD-like technologies:** companies launched kitchen towels with improved bulkiness, water and oil absorbency

Post-processing and packaging equipment saw enhanced flexibility. Examples include dual-function folding machines for both bottom-draw and regular tissue production; bottom-draw production lines with large width of 3.6m using non-rewound parent tissue roll to improve efficiency. Fully automated packaging machines support brown paper or plastic films as packaging materials.

Further enhanced applications of digital online control and remote IoT systems in post-processing production lines. Additionally, two new equipment including "ultra large width" hand towel production lines using hollow constant-pressure adsorption and tissue folding machines equipped with new vacuum pumps for vacuum adsorption achieved energy savings and noise reduction.

### Related equipment and accessories – more energy-efficient

High-consistency refiners help retain fibre length, lowering long-fibre ratio and improving bulkiness, tensile strength, and burst resistance of the finished products. Dual disc refiners provide refining by section to avoid uneven abrasion of discs.

Felts for crescent tissue machines show further improvement in saving steam and electricity used in producing each ton of paper.

Advanced water treatment devices, such as resource recovery towers and integrated decolorisation-sterilisation units, optimise white water treatment regarding energy savings and resource recycling.

### New products – more comfortable and segmented

With TAD and TAD-like technologies or upgraded embossing techniques, companies launched softer and more skin-friendly facial tissues and kitchen towels with improved bulkiness, water absorbency, and oil absorbency.

New lotion tissues contain natural moisturising ingredients to cater to mothers, babies, and individuals with sensitive skin.

A wider range of bottom-draw products now includes not only bottom-draw toilet tissue and facial tissues but also bottom-draw kitchen towels, expanding usage scenarios.

## PART THREE: IMPORT AND EXPORT

China's tissue paper market currently meets local demand in terms of production output and variety. Exports dominate the import/export market. Customs data shows that from January to November 2024, tissue paper exports grew by 23.49%, reaching 1.234m tons with an export value of $2.19bn, a year-on-year increase of 2.76%. Exports have become an integral part of the tissue paper consumption market.


**Fully automated:** packaging machines supported brown paper or plastic films as packaging materials

In the same period, imports remain at a lower-level totalling approximately 33,600 tons, slightly higher than the same period last year. Annual imports of tissue paper generally range from 28,000 to 50,000 tons, having minimal impact on the Chinese market.

### Equipment exports

China's tissue machine manufacturers such as Baotuo, Qingliang, Xinhe, Bingzhi, and Changda, as well as post-processing and packaging machine manufactures including Baosuo, Dechangyu, OK, Soontrue, and One-paper achieved robust export performance in 2024. Several tissue machines and hundreds of processing equipment were exported globally.

## PART FOUR: FULFILLING SOCIAL RESPONSIBILITY

In 2024, tissue paper companies actively fulfilled their social responsibilities by launching various social welfare activities, including:

1. Organising elderly programmes and donating supplies to disaster areas.
2. Promoting women's health and supporting medical development.
3. Focusing on youth development and contributing to environmental protection efforts.

In summary, 2024 saw further growth in modern production capacity within the tissue paper industry. With continued R&D and innovations, enterprises enhance product quality and intelligent manufacturing levels while fulfilling their social responsibilities. With collaborative efforts across the supply chain, the industry has taken significant steps toward high-quality development.

# NEWS IN BRIEF

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

## GLOBAL

Essity – Metsä Tissue – Sofidel – FHH – Ukraine's KCPM – LC Paper – Duni: Tissue World announces its conference line-up in Düsseldorf

Tissue World Düsseldorf has officially announced its conference line-up with talks and panel discussions from colleagues at Sofidel, Metsä Tissue, Essity, Fine Hygienic Holding (FHH), and LC Paper, as well as technical sessions from Valmet, Andritz, Toscotec, Futura, Gambini, BW Converting – and many more!

With a theme of Future-Proofing the Tissue Industry for Sustainable Growth, the Tissue World Conference is a hallmark of the event.

This year's conference topics range from strategic risks, international conflicts, trade corridors, pulp's supply chain, the energy transition and the decarbonisation of tissue plants, advanced digital solutions, and hot embossing.

Key talks in the Senior Management Symposium (SMS) across 8 and 9 April include:

- Keynote speaker, Luigi Lazzareschi, Chief Executive of the Sofidel Group, who will kick off the event on 8 April
- Antonia Colibasanu, Senior Fellow, Foreign Policy Research Institute's talk – The New Geoeconomic Order?
- Presentation by Esa Kaikkonen, Chief Executive of Metsä Tissue, Metsa Group
- Panel discussion: Lazzareschi, Colibasanu and Metsä Tissue's Chief Executive Esa Kaikkonen
- Iurii Golovchenko, Chief Executive of Kyiv Cardboard and Paper Mill (KCPM), will showcase the company's experience in executing key investment projects to modernise equipment over the past few years
- Ali Jalal, Chief Procurement Officer, Fine Hygienic Holding (FHH), will discuss managing pulp supply chain risk through strategic sourcing
- Presentation by Donato Giorgio, President, Global Supply Chain, Essity
- Presentation by Robert Dackeskog, President and Chief Executive, Duni Group
- Panel discussion: Mikael Selling, Chief Executive and Partner, Opticom International Research, Christina Wennberg, Marketing Manager, Södra Cell, Natalia Bezrebra, Senior Research Analyst, Euromonitor International, Laure Miribel, Deputy Chief executive, MP Hygiene
- Panel discussion: Modellfabrik Papier's Managing Director Peter Bekaert, Metsä Tissue's VP of Innovation, Head of R&D and Global Alexander Deutschle, AFRY Management Consulting's Senior Principal Arne Kant, European Tissue Symposium's (ETS) Director General Carlos Reinoso, and Tietoevry's Ropponen.

The technical sessions will hear from peers including:

- Pau Vila, Chief Executive, LC Paper: The path to net-zero tissue products
- Jenny Lahti Samuelsson, Vice President, Global Tissue Sales, Valmet, who will discuss strategic combinations to optimise tissue drying sections
- Presentation by Futura Converting – topic and speaker to be named
- Stefano Pecchia, Energy Technology Director, Toscotec, and Gabriele Romanini, Sales Manager, Toscotec Tissue Division, will discuss decarbonisation in the paper industry
- Stefano Spinelli, Director, Product Lifecycle Management, BW Converting: Streamlining tissue production – "PCMC's Advanced Digital Solution That Saves Time and Money"
- Dario Giannini, Embossing Product Innovation & Pilot Line Manager, Valmet Converting: "Hot embossing takes a step forward with Warm-up Next system."

… Plus many more!

### New and exclusive! Unlocking the future – pilot plants and the tissue revolution

The third day of the conference will introduce a new section to Tissue World's conferences.

Unlocking the Future: Pilot Plants & The Tissue Revolution will be an interactive and insightful session that puts the spotlight on pilot plants, cutting-edge technologies, and the innovative products they bring to life.

This dynamic new session will showcase companies at the forefront of research and development, offering a unique opportunity to explore, feel and touch the latest advancements in materials, fibres, additives, and production techniques.

Participating pilot plants will include presentations from Valmet, Andritz, Toscotec and Gambini.

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### Knowledge-driven conference and magazine

Informa Connect's Tissue World event series is the world's leading knowledge-hub for the global T&T business consisting of exhibitions, conferences and six annual trade magazines as well as bi-weekly newsletters.

Gerry Dunphy, Event Director for Tissue World, said: "Tissue World Düsseldorf 2025 promises to build on the exceptional momentum established in 2023.

"Our return to Messe Düsseldorf underscores the event's importance as a global hub for innovation, collaboration, and growth in the tissue industry.

"It's an unmissable opportunity for businesses to showcase their capabilities, explore emerging trends, and connect with key players shaping the future of tissue."

### Tickets now available: TWM readers to receive 20% off

Tickets are now available to be a part of the global tissue community's most transformative and trusted event.

Readers and subscribers of Tissue World Magazine can receive a unique discount code to attend the event and receive 20% off here:

Secure your spot today by visiting

## ESSITY'S PRESIDENT AND CEO MAGNUS GROTH TO STEP DOWN; STRONG GROWTH REPORTED IN Q4 RESULTS

Essity has announced its President and Chief Executive Magnus Groth will leave the company in 2025, as it reports its "highest level ever" profits in its FY 2024. After 14 years with the company and almost ten years as President and Chief Executive, the company said Groth has decided to step down from the role. A recruitment process for a successor has been initiated.

Jan Gurander, Chairman of the Board, said: "As President and Chief Executive of first SCA and then Essity, Magnus has successfully listed and led Essity on a significant journey of change over the past 10 years to increase profitability, growth and innovation.

"Through his leadership and commitment, Magnus has played an important role in creating the platform that Essity has for continued global profitable expansion."

Groth said: "After 14 years with the company and ten years as CEO, I consider this a suitable time to embark on a new chapter for me and for Essity.

"Essity is today a world-leading hygiene and health company with strong brands and market positions, great employees and recognised sustainability work, reflected in profitable growth."

Groth has a notice period of one year and will continue as President and Chief Executive of Essity until a successor is appointed.

### Q4 and full-year 2024 results: strong growth in fourth quarter

In the fourth quarter of 2024, Essity has reported a net sales growth of 3.2% to SEK37,805m, while EBITA decreased 1% to SEK4,585m. Profit (EBITA excl. IAC) for the quarter was higher than in the year-earlier period and amounted to SEK2,893m, due to higher volumes and sales prices, and a favourable product mix.

For the full-year 2024, net sales decreased 1.1% to SEK145,546m, while EBITA increased 17% to SEK19,475m (16,607). Profit for the year, total operations, amounted to SEK21,048m.

Groth said: "Essity is in better shape than ever and our focus on accelerated profitable growth is yielding results. For full-year 2024, profit reached its highest level ever at SEK 20.3bn, corresponding to a margin of 14%.

He added that sales increased in all of Essity's business areas in the fourth quarter, despite continued global economic challenges.

"People are prioritising hygiene and health and choosing the product offerings that can best improve their everyday lives, making relevant innovation crucial," he said. The latest major innovation is Tork Optiserve Coreless, a new toilet paper system that complements our big seller Tork PeakServe in Professional Hygiene."

During the year Essity also divested Vinda and prioritised growth in categories that "yield a high return".

"Our continuous efforts to improve efficiency have resulted in cost savings of SEK1.5bn."

## AMACO GROUP INTRODUCES THE AM307 INTER-FOLDER TO GLOBAL TISSUE MARKET

Lebanese-headquartered Amaco Group has launched its latest machinery innovation, the AM307, a fully automatic inter-folder tissue paper line equipped with an automatic log transfer.

The line includes the company's first sheet semi-fold and automatic facial log saw AM244FS, as well as the automatic facial tissue nylon film wrapping and packaging machine AM227 FBH.

The automatic log transfer means tissue logs can be transferred with zero direct hand contact. An embossing unit can also be added.

Ali El Abdallah, Amaco Group Chief Executive, said: "As Amaco, we have always been pioneers in technical development and the launch of new technologies.

"Our machines are characterised as excellent quality, innovative techniques, and customisable specifications.

"The launch of our AM307 inter-folder machine is the very latest example of our technical developments."

# CHINA

## HENGAN STARTS-UP SECOND TAD LINE; CHINA'S FIRST TWO TAD MACHINES NOW OPERATIONAL

Hengan International Group has boosted its TAD production capacity after starting up its second Toscotec-supplied TADVISION tissue machine at its headquarters in Fujian.

This is the second of two TAD machines that Toscotec supplied to Hengan after the first came online in 2023 at the company's plant in Xiaogan mill, Hubei.

The start-ups mean China's first two TAD machines are now in operation

Toscotec said Hengan's market launch of premium quality structured tissue in China "has been establishing a new quality benchmark since 2024."

Wang Xiangyang, Vice President of Hengan Group, said: "From pulping to the first jumbo roll, it only took 28 minutes, an impressive result for the start-up of a TAD machine.

"The production of two TAD machines not only enriches our group's high-end product line, but also helps us continue occupying the high-end market."

Hengan Group launched China's first TAD tissue product in 2024, the RONGLIFANG series of kitchen towel, folded tissue and toilet paper.

Founded in 1985, Hengan International Group is a leading Chinese tissue and hygiene products manufacturer.

It has an annual revenue of 23.7bn RMB and a production capacity of 1.47m tons per year.

# GERMANY

## METSÄ GROUP TO CLOSE TM AT KREUZAU AS PART OF REVIEW

Metsä Group has announced a series of investment plans to advance the long-term competitiveness of its tissue paper business in Kreuzau, including the closure of one tissue machine.

The company said the tissue industry operates "in a challenging and highly competitive market environment, characterised by increasing cost pressure due to higher energy and raw material costs."

In a bid to lead the Kreuzau tissue paper mill "back on a profitable growth path", Metsä Group said it will take several actions to ensure the mill's


**Start-up team:** Hengan and Toscotec's teams in front of the new TADVISION tissue machine at Hengan Group, China

long-term competitiveness and to build on the site's existing strengths.

These will include efficiency measures and investments into modernising the production equipment and capacity adjustments, which will include the closure of one paper machine at the end of its lifecycle, affecting a total of up to 120 jobs.

The target is to balance the paper making and converting capacities at the mill and to focus the mill on manufacturing only consumer tissue products.

In order to implement these plans, Metsä Tissue will start change negotiations with the works council at the Kreuzau mill.

Tobias Lüning, SVP West, and Country Manager of Metsä Tissue, said: "We are committed to ensuring the long-term success of our Kreuzau mill.

"Introducing these plans to adjust our capacity and including the related possible personnel impacts are unfortunate but necessary.

"With these plans, we aim to strengthen our position in the production of sustainable tissue paper products in the competitive German market.

"We will work together with our personnel and the works council to find the best possible solutions to the situation."

Kreuzau is one of the largest tissue paper mills in Europe and largest within Metsä Group. The mill is offering fresh fibre-based tissue paper products to Central European customers.

## SWEDEN

### DUNI GROUP TO ACQUIRE UK-BASED POPPIES EUROPE

Duni Group has further strengthened its position in Europe after announcing the acquisition of the UK's leading paper tableware company Poppies Europe.

The company said the move strengthens its presence in the sustainable dining market in the United Kingdom, while offering "significant synergies across manufacturing, logistics and distribution."

The acquisition is subject to regulatory approval in the UK, and is expected to be completed in the first half of 2025.

Robert Dackeskog, President and Chief Executive of Duni Group, said: "We are pleased to welcome Poppies to our group of attractive brands in dining and food packaging solutions for the restaurant market.

"The acquisition further strengthens our market-leading position in Europe and increases our distribution capacity to customers in the UK and Ireland."

The merger has also increased the company's premium tissues and airlaid production in Duni Group's papermill Rexcell.

Poppies manufactures a quality product range mainly for the catering sector, produced under the Poppies brand name, along with other bespoke labels such as McNulty Wray and Staples.

Poppies production facility is based in St Helens on a 12-acre site and distributes products both nationally and internationally.

Masoud Khadem, Director of Poppies, said: "We are excited to join forces with Duni Group. Together with Duni we will have a strong value chain that strengthens our focus on sustainable products while simultaneously expanding our tabletop offering to better serve our customers."

Poppies has around 220 employees and annual net sales of approximately SEK620m, with profitability in line with Duni Group's business area Dining Solutions.

Duni Group is a market leader in sustainable dining and food packaging solutions for the restaurant market.

## LITHUANIA

### GRIGEO GROUP STARTS-UP TT STEAMBOOSTER STEAM GENERATION SYSTEM

Grigeo Group has started-up a Toscotec-supplied energy saving upgrade at its Grigeo tissue mill in Grigiskes.

The TT SteamBooster was implemented into the hood and steam systems of the company's PM6, a Toscotec-supplied AHEAD tissue line that came online in 2015.

The TT SteamBooster recovers heat from the hood's exhaust air to generate high pressure steam using the condensate coming from the Steel Yankee Dryer.

Targets achieved: 25% energy savings and carbon reduction

According to supplier Toscotec, the TT SteamBooster cut the boiler's gas consumption by up to 25%, ensuring a reduction of the associated carbon emissions.

Almantas Tamošiūnas, General Manager of UAB Grigeo Tissue, said: "We are pleased to announce that our reduction and emissions-saving targets were achieved in the very first month after start-up."

Founded in 1823, Grigeo Group is the only paper and wood industry company group in Lithuania and one of the largest in the Baltic countries.

Grigeo Tissue produces 70,000tpy of tissue products, which are also exported to 19 countries.

## ROMANIA

### PEHART GROUP ACQUIRED BY INVL BALTIC SEA GROWTH FUND

Pehart Group has been acquired by Baltics-based private equity fund INVL Baltic Sea Growth Fund.

The transaction with current owners Abris Capital

Partners is expected to be completed in the first quarter of 2025, subject to regulatory approvals.

With a 187-year tradition, Pehart Group is one of the largest tissue paper producers in South-East Europe, present with its household and industrial products in 19 countries.

It produces toilet paper, paper towels, napkins, and other hygiene paper products, as well jumbo rolls.

The purchase includes the company's Pufina brand of tissue paper products, as well as Alint, Altessa and SOVIO, as well as the AfH products division.

In 2023, the Pehart Group generated revenues of €168m.

Gabriel Stanciu, Chief Executive Pehart Group, said: "In continuing the development strategy of our company, we are looking forward to this new partnership with INVL Baltic Sea Growth Fund.

"Pehart Group, a Romanian brand with a lasting tradition and a history strongly linked to the beginning of consumer paper processing in Romania, had a remarkable evolution in the past years alongside a valued partner on this journey, and for that we thank Abris Capital Partners.

"We are ready to leverage the growth opportunities and enhance our market position together with our new partner.

"We will continue to focus on operational excellence, creating value for consumers and extending our position in the region."

## FINLAND

### METSÄ TISSUE ANNOUNCES "INDUSTRY BENCHMARK" TISSUE MES

Metsä Tissue has partnered with IT software company Tietoevry to launch a modernised Tissue MES system as part of its Future Tissue Mill programme.

The system is based on TIPS Industry Solutions & Services, a Manufacturing Execution System (MES).

According to Tietoevry, it bridges the gap between a customer's Enterprise Resource Management (ERP) and mill-specific automation by providing "a harmonised system designed for the tissue industry's order-to-cash process."

It provides full traceability of fibre materials for tissue machines to converted tissue end products to enable reliable cost tracking in production.

Digitalised key processes have reduced manual work and enabled "reliable information, leading to improved overall efficiency in the mills and business decision-making."

Metsä Tissue Chief Executive Esa Kaikkonen said: "We have developed together with Tietoevry a new Tissue MES Solution and implemented it for our mill operations in Finland, Sweden, Poland, Slovakia, and Germany.

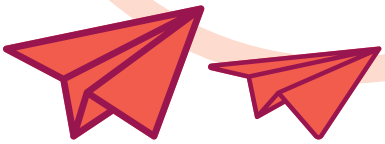
"New Tissue MES Solution enables us to manage our mills with data, focusing on correct things in the right time and right order."

Tietoevry said the key benefits of the "industry benchmark" modernisation include integrated and unified production and quality management at all mills with full transparency and traceability for the full value chain.

Improved operational efficiency has also occurred, along with continuous improvement and KPIs.

Jarmo Ropponen, Head of Asia-Pacific, Head of Tissue and Chief Executive Malaysia, Pulp, Paper, and Fibre at Tietoevry Industry, said: "One of the key benefits is that all the tissue mills, in all countries, now have a unified system enabling full transparency of all operations to lead Metsä Tissue's business based on data."

**Metsä Tissue has partnered with IT software company Tietoevry to launch a modernised Tissue MES system as part of its Future Tissue Mill programme.**



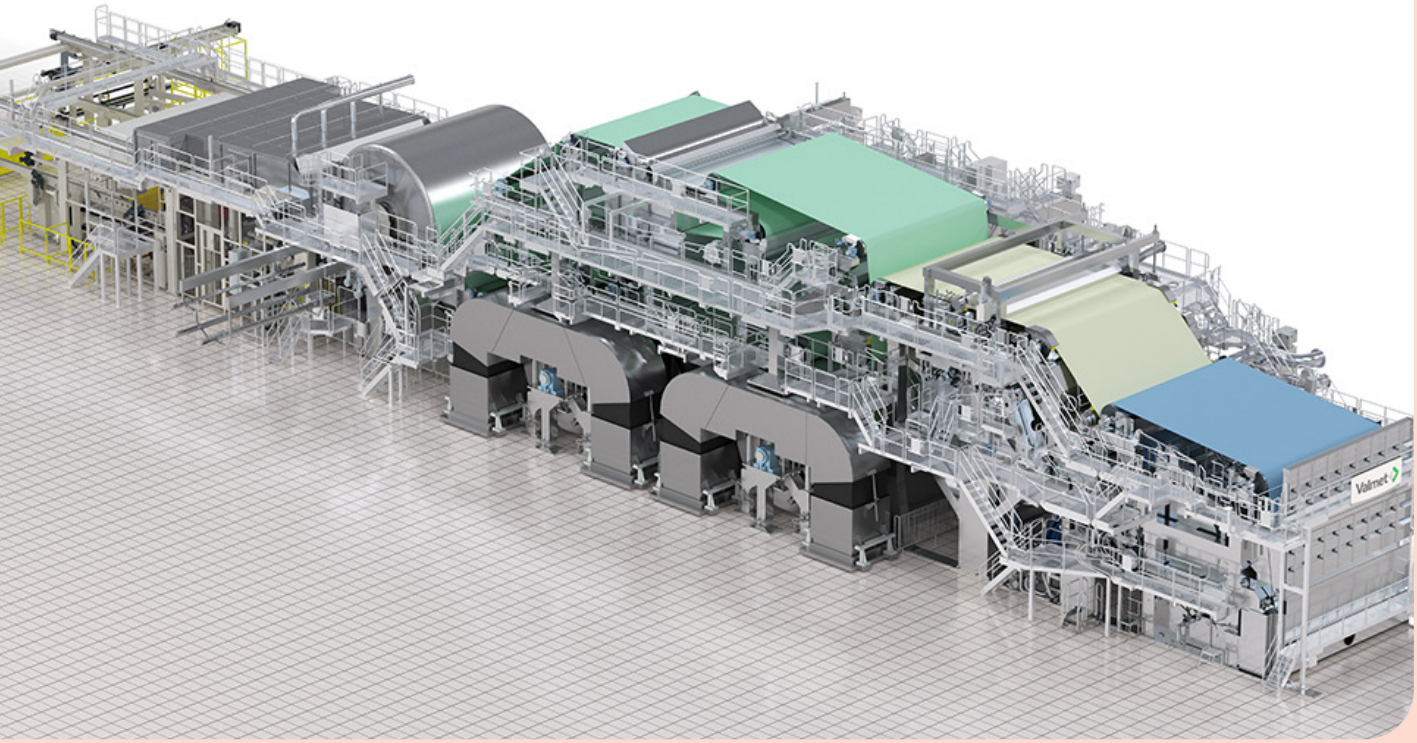
## NORTH AMERICA

### IRVING TO BOOST ULTRA-PREMIUM PRODUCTION AFTER INVESTING IN THIRD TAD MACHINE

Irving Consumer Products is to increase its ultra-premium tissue production by 75,000tpy after investing in a third TAD tissue machine to be installed at its mill in Macon, Georgia.

Start-up is planned for 2027 and Valmet will deliver a complete tissue production line, including stock preparation equipment.

The new line will feature an Advantage ThruAir tissue machine equipped with an OptiFlo II TIS



**Production boost:** America's Irving Consumer Products invests in Valmet's Advantage ThruAir Drying TM

headbox, ThruAir Dryers, an air system, and an Advantage SoftReel reel.

Once operational, the production line will increase Irving Consumer Products' annual tissue production capacity by 75,000 tons.

Robert K. Irving, President of Irving Consumer Products, said: "I am very pleased to announce our phase three expansion at Irving Tissue Macon.

"The $600m investment will add another 100 jobs and include a third TAD papermaking machine, additional converting lines and a new fully automated warehouse."

Irving Consumer Products also started-up two Valmet-supplied TAD tissue machine at its Macon site in 2019 and 2021.

## CASCADES APPOINTS JÉRÔME PORLIER AS EXECUTIVE VICE-PRESIDENT, TISSUE

Cascades has appointed Jérôme Porlier to the position of Executive Vice-President, Tissue.

Until last November, Porlier was President and Chief Operating Officer of Cascades Specialty Products Group (SPG).

He joined Cascades in 2012 and has held various roles within the Tissue Papers Group, including Plant Manager and General Manager.

Hugues Simon, Cascades President and Chief Executive, said: "A mobilising and well-organised manager appreciated for his positive leadership, Jérôme has enabled SPG to deliver the best results in its history in recent months.

"He embodies the rising generation of accomplished, eco-responsible leaders, and has the qualities needed to succeed in this new challenge."

**Cascades has appointed Jérôme Porlier to the position of Executive Vice-President, Tissue. Until last November, Porlier was President and Chief Operating Officer of Cascades Specialty Products Group.**

# GERMANY'S CAUTIOUS TISSUE MANUFACTURERS NAVIGATING SLUGGISH DEMAND

Uncertainties across manufacturing, energy costs, the post-Covid recovery and politics mean Germany is still searching for a stable way forward. Report by Bruce Janda, Senior Consultant, ResourceWise.

German manufacturing is still struggling to establish its "new normal" following the twin shocks of the pandemic and the war in Ukraine. German auto manufacturing garners most of the headlines due to the threat of low-cost Chinese EV imports potentially disrupting a significant source of employment and global exports. However, higher energy costs, inflation-driven labour demands, and an expensive transition to green and renewable energy have also contributed to the industrial anxiety affecting all German manufacturing, including the tissue business.

These same issues impact German tissue consumers, complicating demand forecasts. The consumer tissue interests highlighted in the literature include:

- Increased emphasis on health and hygiene, especially following Covid-19.
- Rising demand for high-quality, soft, and sanitary toilet paper.
- Growing interest in premium products.
- Shift towards private labels and value-driven purchasing due to economic uncertainties.

These consumer interests are somewhat self-contradictory (higher quality and lower costs), making demand forecasting challenging when the German tissue mills are struggling with an energy transition.

The World Factbook estimates that Germany's population growth due to immigration will decrease to -0.12% in 2024. The population trend is shown in the yellow bars in Figure 1. Population growth appears to have slowed again, as slower immigration is not quite replacing the effect of very low birth rates. However, GDP per person at PPP (purchasing power parity), shown in the blue line, has continued to rise, indicating growing consumer spending power. The average German consumer probably doesn't feel enriched in the current environment.

German unemployment has stabilised between 3.0% and 3.5% since 2017, as shown by the yellow bars in Figure 2. Nevertheless, the inflation shock of 2022 (9%) continues to impact consumers as prices remain elevated despite a decline in the inflation rate. The blue line indicates the inflation trend, with the low 2024 rate still being an estimate.

The German tissue trade has remained relatively stable throughout the 17-year trend period. Figure 3 illustrates Germany's tissue imports. The key supplier countries are all close to Germany's borders, including Austria, France, Italy, the Netherlands, Poland, and Sweden. Poland has emerged as the largest source of tissue imports. The 2024 data shown may be revised as the trade data is finalised after year end.

The trend of tissue exports from Germany is shown in Figure 4, which includes many of the same countries that

| Country | Company | Site Name | Name of Line | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Germany | Fripa | Miltenberg | TM 1 | | | | | | | | -1 | | | | | | | | | | | | | | -1 |
| | | | TM 6 | | 1 | | | | | | | | | | | | | | | | | | | | 1 |
| | | | TM 7 | | | | | | | | 1 | | | | | | | | | | | | | | 1 |
| | SCA | Kostheim | TM 1 | | | | | | | -1 | | | | | | | | | | | | | | | -1 |
| | | | TM 5 | | | | | | | 1 | | | | | | | | | | | | | | | 1 |
| | Wepa | Giershagen | TM 19 | | | | | | | | | 1 | | | | | | | | | | | | | 1 |
| | Werra Papier | Omega | TM Werra 3 | -1 | | | | | | | | | | | | | | | | | | | | | -1 |
| | | | TM Werra 5 | 1 | | | | | | | | | | | | | | | | | | | | | 1 |
| TOTAL | TOTAL | TOTAL | TOTAL | | 1 | | | | | | | 1 | | | | | | | | | | | | | 2 |

**Table 1:** Germany Tissue Machine Count Changes

export tissue to Germany. The import to export ratio is approximately balanced. The volume of tissue exported or imported constitutes about 40% of the capacity of the German tissue industry. German tissue companies are certainly monitoring this ratio.

The cautious nature of German tissue makers is best illustrated by the deliberate addition of new tissue machine capacity as existing machines are replaced. This is detailed in Table 1. A net gain of only two machines is anticipated through 2027, with no new tissue mill sites expected during this time. Tissue makers continue to optimise existing capacity. The forecasted compound annual growth rate (CAGR) from 2007 to 2027 is a mere 0.51%.

The German tissue supply is shown in Figure 5. Recovered paper recycling comprises 31% of total tissue production, with some pre-consumer recycling included in the "all other" category. Nearly a quarter of the total fibre is sourced from eucalyptus imports. Softwood and hardwood pulps from the North account for 40% of the total Figure 5: German Tissue Furnish

Although recycled fibre accounts for only 31% of the total furnish, more than half of German tissue mills incorporate some recycled fibre. This is illustrated in Figure 6. A smaller proportion of German tissue mills include some virgin fibre integration.

Figure 7 shows the application of these fibres to tissue product types. Consumer Bath Tissue is the largest product format, followed by Consumer Towels and Facial tissue. These consumer grades contain a significant portion of eucalyptus fibre for softness. However, these bar segments represent overall averages, and much more eucalyptus would be expected in the premium grades than in the economy grades.

Germany has several advanced technology tissue machines that produce commercial towels, consumer towels, and consumer facial tissues, as illustrated in Figure 8. Unlike North America, the bath tissue format in Germany does not utilise advanced structured tissue technology. This is because the significantly higher strengths and multiple plies (up to 4-ply) needed for bath tissue in Germany reduce the necessity for advanced technology to enhance absorbency and secure loose fibres, as is the case in North America. The demand for advanced technology to achieve maximum absorbency per gram of fibre in a towel is universal, and we observe similar penetration of advanced technology in commercial towelling used for hand drying as we do in North America.

A comparison set of Spain, France, Italy, Poland, Sweden, and the Netherlands was selected for a technical analysis of nearby tissue trading partners. Figure 9 illustrates this comparison, plotting the average technical age of each country's machines on the X-axis against the average tissue machine line speed on the Y-axis. The size of each bubble represents the total capacity of each producing country.

Germany's machines, along with those of Spain and France, are, on average, relatively middle-aged but operate at high line speeds. Conversely, the Netherlands' machines are considerably slower and significantly older. The high energy and pulp costs faced by Germany and most of its peers make it challenging to generate cash for asset upgrades. However, asset upgrades for more productive machines that can use fibre and energy more efficiently are necessary to remain competitive.

Figure 10 compares the same countries with Germany, highlighting the average cash cost of producing a ton of tissue. The height of each bar reflects the production cash cost for each country, while the width indicates their relative tissue capacity. Furthermore, the coloured segments within each bar represent the costs involved, including raw fibre materials, market pulp, chemicals, energy, labour, materials, overhead, and any credits.

Sweden is the lowest-cost producer, while France is the highest-cost producer. Energy costs are the lowest in Sweden, partly due to the use of biomass energy in pulping and waste boilers, which are deemed carbon neutral. Germany experiences the highest energy costs, as indicated by the width of the yellow band. Poland, Italy, and Spain have the lowest labour costs. Germany and the Netherlands benefit from greater fibre integration, as seen from the raw material fibre represented in the bottom bar of the columns, compared to the higher costs associated with baled pulps in the second bar from the bottom.

Figure 11 shows a snapshot of the average tissue machine and mill viability. In this case, the cost of the bar height is determined by viability factors, where cost is only one of eight considered. The legend shows these

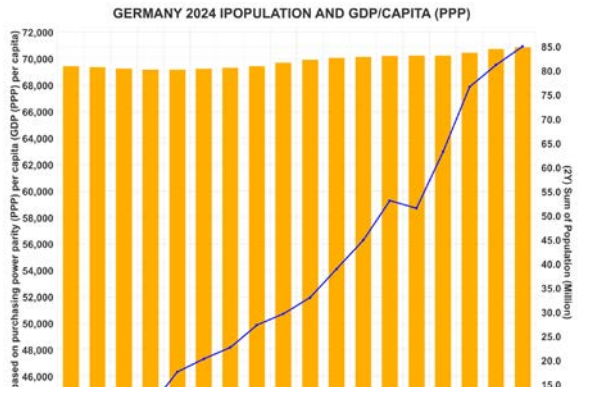



**Figure 1:** Germany Population and GDP/CAPITA (PPP)

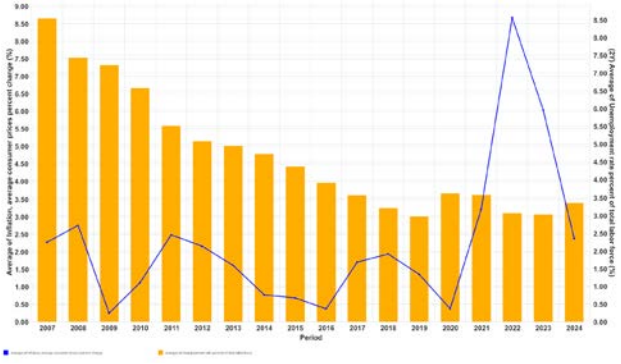


**Figure 2:** Germany Inflation and Unemployment

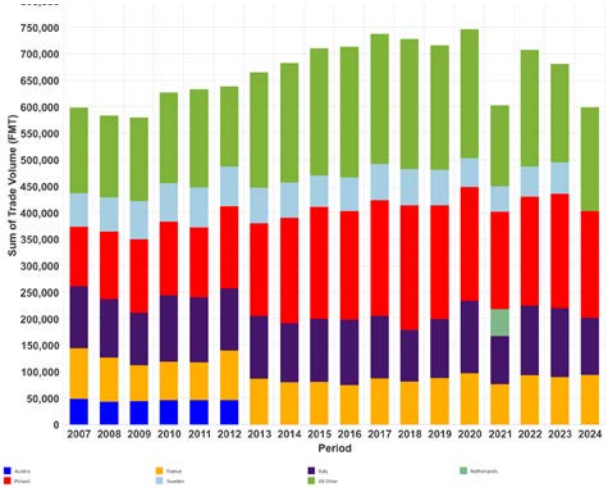



**Figure 3:** Germany Tissue Imports Trend

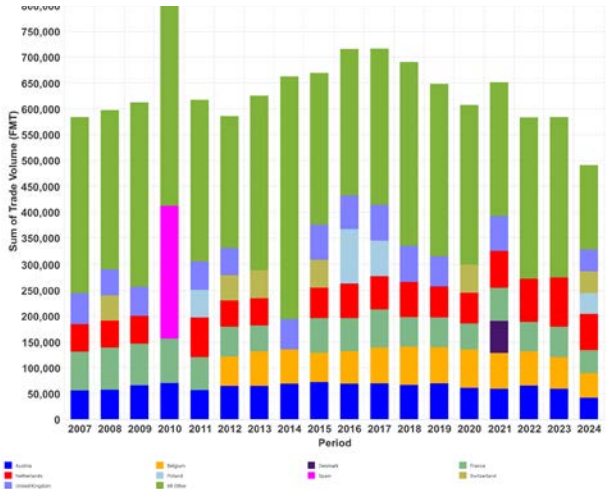



**Figure 4:** Germany Tissue Exports Trend

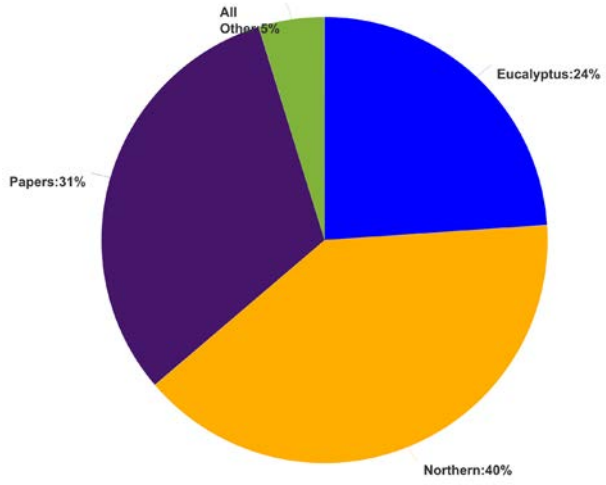



**Figure 5:** German Tissue Furnish

factors as capital required, cost, grade risk, internal company risk, competitiveness, size, technical age, and tons per unit trim.

Spain has the best (lowest) viability score compared to the Netherlands, which is notable as a relative risk. Germany ranks in the middle of this chart. If Germany's costs were lower, it would align closely with Spain and Poland in terms of viability.

Figure 12 benchmarks carbon emissions directly using Scope 1 (fuel burned on-site) and Scope 2 (electricity purchases). This chart compares fuel in units (GJ) to costs. Sweden is significantly below the average emission rate per ton, while Germany is slightly above it. Poland shows very high carbon emissions per ton of tissue produced, largely due to its coal-fired electrical grid (Scope 2). Germany demonstrates relatively efficient on-site fuel use for power, hot air, and steam (bottom bar segment). The opportunity for Germany is to reduce the significant rate of Scope 2 electrical grid emissions as high-carbon fuels are phased out and replaced with lower-carbon natural gas and zero-carbon renewables. Sweden is maximising its abundant wood resources to lower Scope 2 emissions.

Scope 3 emissions are upstream and downstream from tissue production, including fibre production in market pulps. This could be significant if included in the carbon emission measurement. It would benefit advanced tissue processes if they reduced the basis weight and carbon content of the pulp required when measured on a consumer-use basis. It would also penalise tissue paper shipped from exporters halfway around the globe.

Germany's electric grid costs and carbon inefficiencies continue to affect its tissue business. German manufacturers have been at the forefront of exploring alternative fuels like hydrogen and increasing electrification on-site. Unfortunately, German tissue mills are unable to address the issues with the country's electric grid.

Germany's tissue business is experiencing slow growth, with machine replacements and upgrades centred on cost and quality improvements. The country is an active trader in tissue with its neighbours but is currently at a disadvantage due to higher energy costs and carbon emissions compared to the trade group average. This column was optimistic for Germany's competitive position improvement two years ago. That improvement has not materialised.

A detailed understanding of tissue producers and their individual machines is crucial for analysing the competitive landscape. This article presents an overview of the current tissue industry in Germany. Fluctuations in fibre prices, exchange rates, and environmental regulations create both opportunities and challenges for industry participants. Moreover, changes in ownership and consolidations are expected to persist among tissue mills in Germany, while investments in tissue-making capacity from neighbouring countries may impact imports and exports.

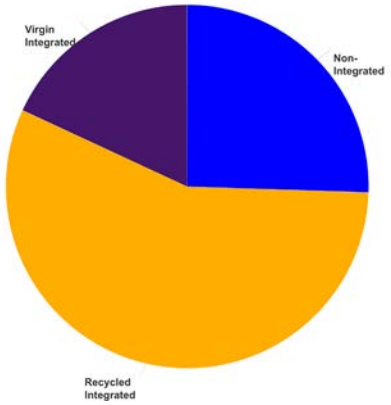



**Figure 6:** German Tissue Site Configuration

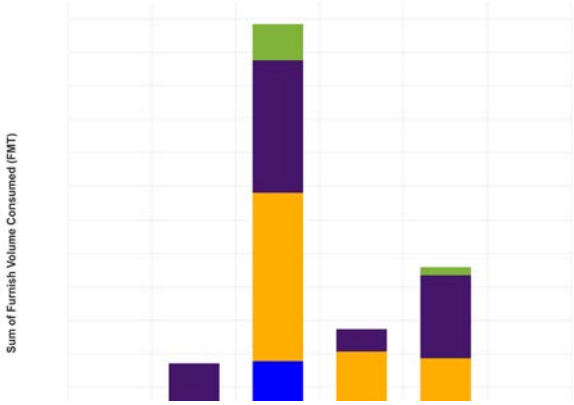



**Figure 7:** Tissue Finished Products by Fibre Source

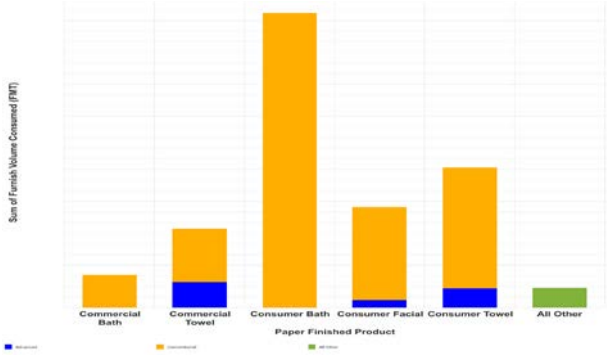



**Figure 8:** Tissue Finished Products by Technology

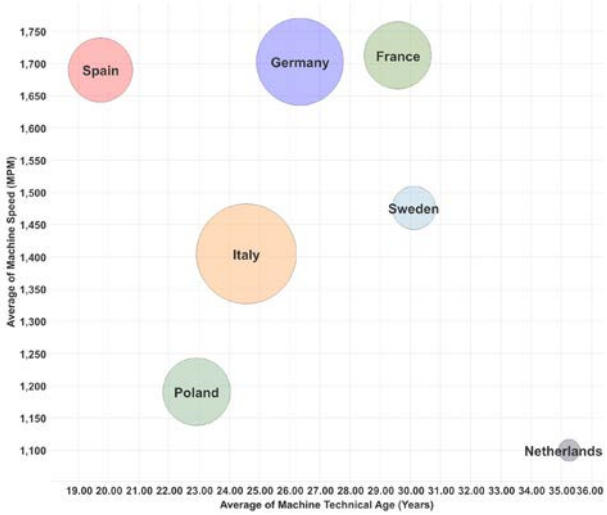



**Figure 9:** Germany Tissue Machine Quality Comparison by Technical Age and Speed

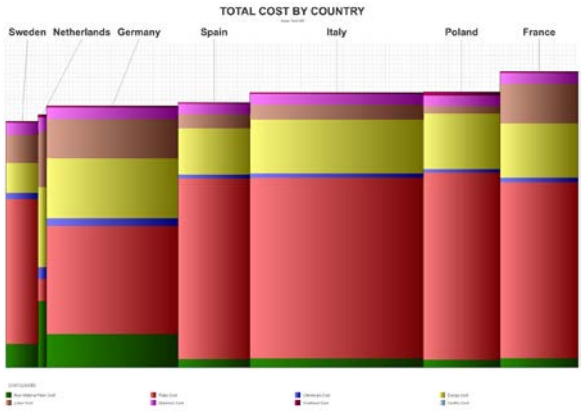



**Figure 10:** Germany Tissue Average Cash Cost Comparison

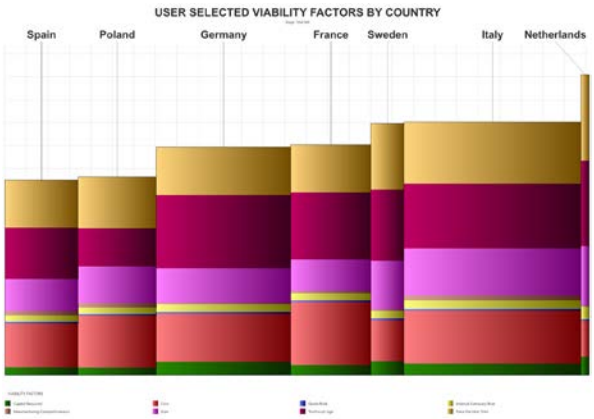



**Figure 11:** Germany Average Tissue Machine Viability Comparison

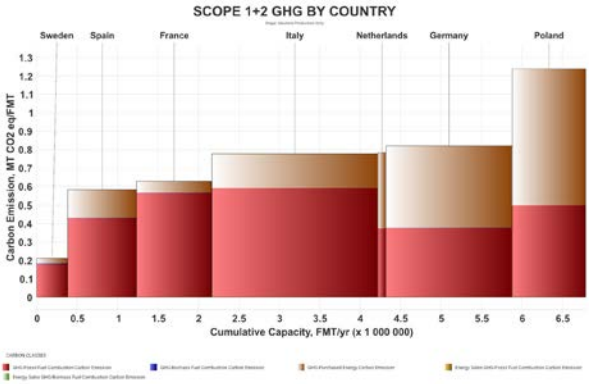


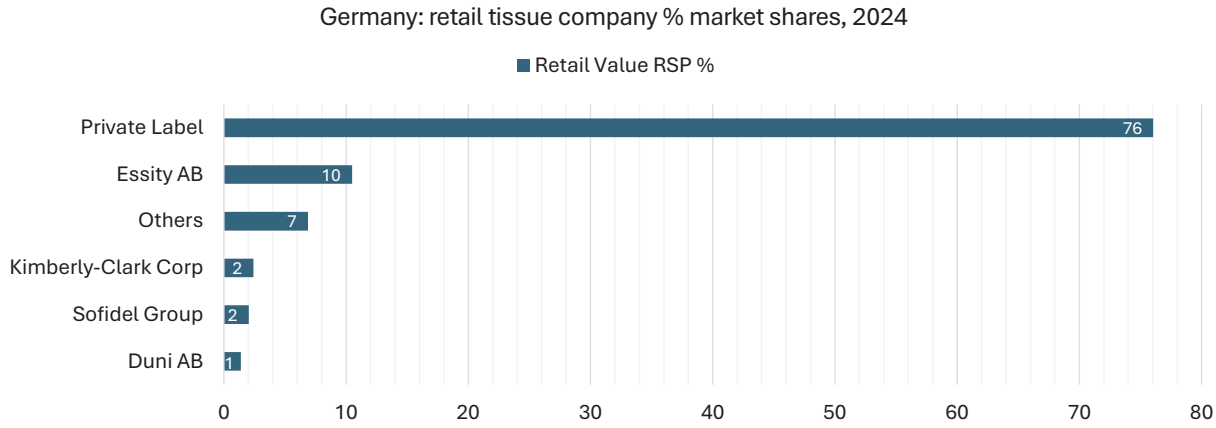

**Figure 12:** Germany Scope 1 & 2 Carbon Emission per Ton Comparison

# THREE YEARS HAVE RESHAPED CONSUMER BEHAVIOUR – TOWARDS VALUE-FOR-MONEY AND SUSTAINABILITY-DRIVEN INNOVATION

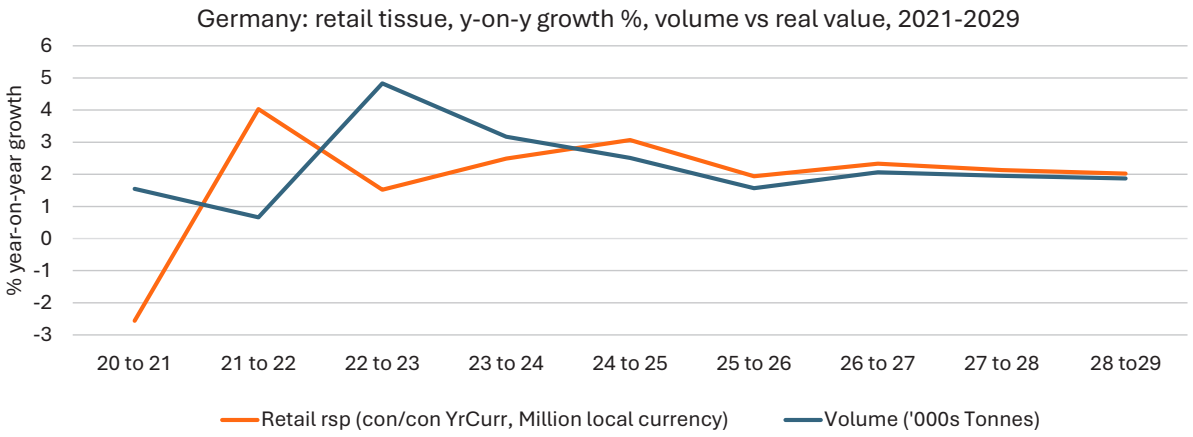
Green issues have long been important for German shoppers. Now, after lessons learned during the pandemic and with inflation pressure easing, they want more. Report by Ana Tique, Research Consultant, Euromonitor International.

After three years of markedly high inflation rates, Germany finally saw a slowdown in 2024 and consumer prices rose by slightly over 2%. Despite the light at the end of the tunnel, German consumers continued to be cautious over their spending throughout the year – but opportunities arose for different market segments.

The inflation rate in Germany was markedly lower in 2024 than in the three years preceding, getting closer to the more moderate levels before the pandemic. After 2022 closed the year with a record-breaking average annual inflation rate close to 7%, 2023 was still close to 6% on an annual average basis. The last three years have also reshaped consumer behaviour, reflecting the effects of post-




*Source: Euromonitor International, preliminary Tissue and Hygiene 2025 edition research data to be published on February 24, 2025*




*Source: Euromonitor International, preliminary Tissue and Hygiene 2025 edition research data to be published on February 24, 2025*
*Note: Years 2025-2029 are forecast years*

pandemic times and a shift towards value-for-money and sustainability-driven innovation, which remained key for brand differentiation.

Although the year ended on a relatively more positive note, the high inflation rates throughout 2023 continued impacting German consumers' purchasing decisions in 2024 and consumer confidence fluctuated month-by-month. The price increases observed in 2022/23 in tissue products, driven by rising raw material costs, the effect of the war in Ukraine (specifically due to its impact on the supply of raw materials) and supply chain disruptions, continued into 2024, further challenging consumers as they tried to manage their budgets.

For many consumers, there was a generalised cautiousness about discretionary spending, which opened opportunities for lower-cost alternatives, private label lines, seeking out discounts buying in bulk, for instance, or, on the other hand, shifting to more durable or multi-purpose products, even if the price was higher. Although premium segments of the tissue market continued to show positive performance, there was a noticeable demand for products that offered value for money. Consumers continued looking for products that delivered innovative features such as skin care benefits like added softness and comfort, or more eco-friendly attributes such as biodegradable materials and packaging, but that didn't sacrifice on affordability.

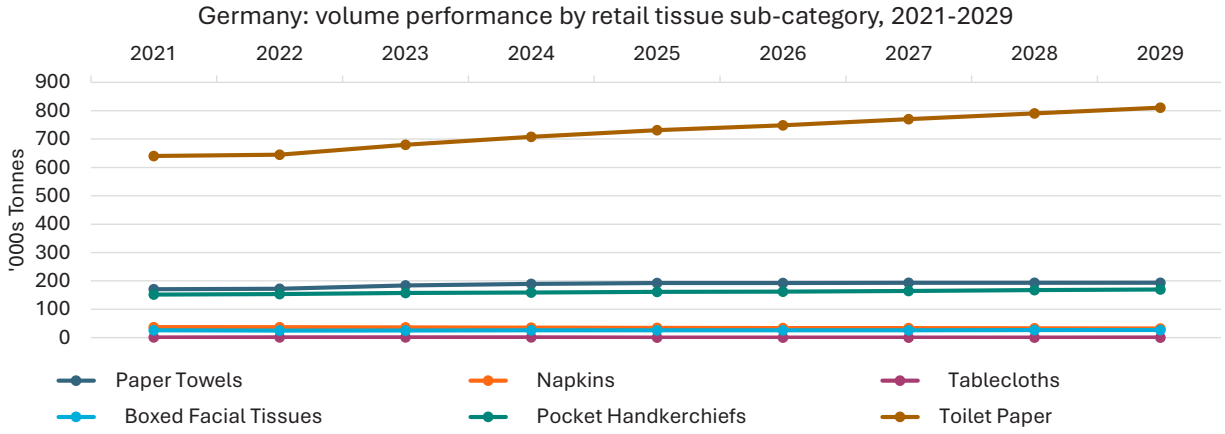
Retail giants Aldi, dm, Edeka, Rewe and Rossman, for instance, continued expanding their lines of private label tissue across several categories and strengthening their position among the competition. The launch of new product lines that meet consumer preferences for quality, sustainability and value puts these players in an advantageous position, reinforced by their wide availability across the country.

## SEEKING A BALANCE BETWEEN SUSTAINABILITY AND COST-EFFECTIVENESS

In 2024, German consumers grew increasingly mindful of the need to opt for sustainable options and the impact their purchase and consumption choices have on the planet. The economic value of sustainability is becoming more apparent for consumers, as choosing eco-friendly products can help reduce long-term costs – financial and ecological. Brands that focused on sustainability-driven innovation and communicated these efforts through certifications and claims gained traction as more education on ecology grew.

According to Euromonitor's Voice of the Consumer Lifestyle Survey fielded in 2024, over 45% of consumers considered recyclable, biodegradable,

**Consumers sought tissue products made from recycled materials and recyclable or biodegradable packaging, even if the price point was higher.**




*Source: Euromonitor International, preliminary Tissue and Hygiene 2025 edition research data to be published on February 24, 2025*
*Note: Years 2025-2029 are forecast years*

or refillable/reusable packaging more sustainable or better for the environment. Consumers sought tissue products made from recycled materials and recyclable or biodegradable packaging, even if the price point was higher.

Nevertheless, consumers generally prefer not to pay a premium for products, as consumers expect brands to make sustainability standardised – particularly in economically struggling times. The need for businesses to provide greener alternatives such as washable and reusable items or alternative compostable and biodegradable materials, is becoming essential and differentiating. Solutions such as washable and reusable napkins and tablecloths instead of paper-based ones, hand driers instead of paper towels, and other mechanisms can help create a smaller environmental footprint and continue to emerge in the market.

The dilemma of how to dispose of reusable products at the end of their lifecycle remains a significant concern, as well as how much energy and resources are saved through their reusing process. As sustainability has long been a shared value among German consumers, it is unsurprising that the urgency to find innovative solutions will grow in the coming years.

## GERMAN TISSUE CONSUMERS RAPIDLY ADAPTED TO ONLINE SHOPPING

After a somewhat slow adaptation to online shopping, German consumers - notoriously resistant to digital change - rapidly adapted to become one of the top European countries engaged in e-commerce. According to Euromonitor's 2024 Voice of the Consumer Lifestyle Survey, some of the advantages of e-commerce that are gaining German tissue consumers' preference include access to the best price, the ability to order at any time from anywhere and have products quickly delivered, and the ability to browse from a variety of brands or to set up a subscription for auto-replenishment.

**At a time of more economic restraint, e-commerce continues to provide shoppers with promotions and deals that are very welcomed.**

At a time of more economic restraint, e-commerce continues to provide shoppers with promotions and deals that are very welcomed, inclusively allowing retailers to expand their customer loyalty by engaging them in loyalty programmes. Additionally, younger generations are more adept at using digital tools, which benefit their daily lives. Keeping this in mind, transparency and reliability are essential for industry players to remain competitive.

# A HOLISTIC APPROACH ON SUSTAINABILITY

WEPA Group targets frontrunner role in sustainability aiming for a net-zero production until 2040 considering aspects of energy and logistics as well as using sustainable fibres from paper for recycling, recycled cardboard, coffee cups or alternative fresh fibres such as miscanthus gras. Director Group Communications Tim Vormweg explains to TWM Senior Editor Helen Morris the unique campaign "beige is better" to convince consumers to choose sustainable products on the shelf.

The drive to the peaceful and scenic village of Arnsberg-Müschede in North Rhine-Westphalia, Germany, sets the scene for TWM's meeting at WEPA Group's impressive headquarters. Just an hour and a half east from Düsseldorf and the road is surrounded by lakes and thousands of trees towering high either side of steep slopes leading to the tissue mill. Tellingly, the roofs of most of the region's homes are covered in solar panels, capturing the sun's energy, and converting it into electricity for the local homes and businesses.

**Above: Established in 1948 as "Westfälische Papierfabrik":** WEPA Group's production site and headquarters in Arnsberg, Germany

At the plant, TWM is warmly greeted by WEPA Group's Director Group Communications Tim Vormweg, Communications Manager Nicole Hofmann, and latterly on a full tour of the facility, process engineer Armin Elfers. Impressive images of the company's historic roots are dotted throughout the reception, including a headshot image of Paul Krengel, who established the company – back then "Westfälische Papierfabrik" – in 1948.

First operating as a trading company for wrapping paper, the WEPA Group started producing its own products in 1958 with its first paper machine that was assembled from used spare parts – at a time when the terms "recycling" and "sustainability" were by no means popular. In the 1980s, WEPA was one of the first manufacturers to successfully process paper for recycling to produce high-quality, absorbent tissue. Since then, WEPA has been one of the companies in the paper industry with the greatest expertise in the processing of paper for recycling and has diversified its product offering to include toilet paper, kitchen towels, tissues, cosmetic tissues, napkins, paper towels as well as

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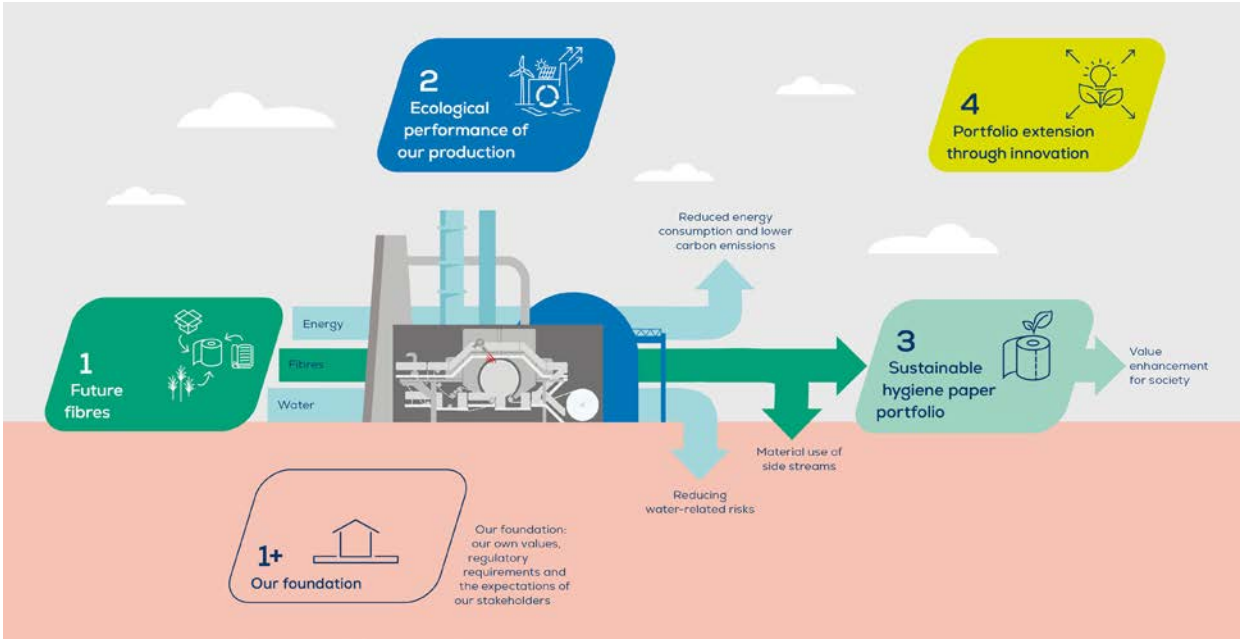



**WEPA's sustainability strategy:** the company has announced its vision to be net-zero by 2040

**Proudly family-owned, the company has also always been vocal about its vision to be "the most sustainable and agile first-class partner for personal and professional hygiene solutions."**

centrefeed rolls, medical rolls, cleaning rolls and dispenser solutions.

At its headquarter in Müschede, WEPA's investment in solar panels is immediately obvious as they are placed along the sides of different buildings. The site is home to two tissue machines and several converting lines, producing 65,000tpy of hygiene paper for WEPA's Professional Business Unit. Vormweg adds that these products "are produced energy efficiently, and almost exclusively on the basis of recycled fibres." Standing opposite PM1, Armin Elfers, who is one of the process engineers overseeing the site's tissue machines, discusses the many challenges he and his team have had to adapt to and overcome to produce jumbo rolls using a variety of different raw materials. To enable the machine to produce jumbo rolls from 100% recycled cardboard, "we had to rethink and change a lot of our existing processes," he says.

## AN AMBITIOUS SUSTAINABILITY STRATEGY

Proudly family-owned, the company has also always been vocal about its vision to be "the most sustainable and agile first-class partner for personal and professional hygiene solutions."

As an expert for sustainable hygiene solutions, WEPA is continuously researching, developing,

**Decreasing environmental impact:** WEPA is seeking alternative fresh fibres alternative fresh fibre such as Miscanthus gras

and expanding its product portfolio towards even more innovative and sustainable solutions. Globally, at a time when tissue companies and suppliers are under pressure from rising energy prices, supply chain disruptions, wars, and other external circumstances ... how is the company mitigating this, and how is it impacting the German tissue market? "We have always had a very clear strategy for the company," Vormweg says. "Sustainability is the strategic focus of the WEPA Group, and we take responsibility for the impact of our actions on the environment, society, and the economy. This is the way that we have set ourselves apart in the market as a family business. We see ourselves as frontrunner in sustainability in our industry with a truly ambitious sustainability strategy."

"Sustainability has been deeply rooted in the company since it was founded by Paul Krengel, as it has always been developed over the long term as a multi-generational family business", he explains.

## ALTERNATIVE FRESH FIBRES

As the focus on sustainability is central to all the company's actions, WEPA embraces the concept of a circular economy, which involves reusing existing materials as raw materials, keeping them in the cycle for as long as possible and closing loops wherever possible. Therefore, the hygiene paper is also made from sustainable raw materials such as paper for recycling and recycled cardboard.

However, fresh fibres must also be introduced into the cycle regularly. In this regard, WEPA is seeking alternative fresh fibres to decrease environmental impact. One example of such alternative fresh fibres is Miscanthus gras. It has a lifespan of about 20 years and grows to full height every year without the need for additional watering, fertilisers, or pesticides, offering a more environmentally-friendly option.

WEPA offers its hygiene paper made from Miscanthus in the professional sector under the brand name "BlackSatino GreenGrow". These products combine virgin fibres from Miscanthus with alternative raw materials. The result is a particularly soft, highly absorbent, and unbleached toilet paper and towel paper. "BlackSatino GreenGrow" is produced with 100% green electricity and without harmful chemicals. It is also Cradle to Cradle Silver and FSC Mix certified.

**Toilet paper made from Miscanthus gras:** WEPA's "BlackSatino Green Grow" brand

**Recycled cardboard:** an innovative raw material to produce hygiene paper

**European first:** WEPA says it is the first manufacturer in Europe producing hygiene paper out of recycled cardboard on a large scale

**Hygiene paper:** the range made from recycled cardboard is produced without bleaching in the process

**"High softness and the outstanding sustainability characteristics":** an example of the company's recycled cardboard range

**A "recycling expert":** a cascade use of raw materials is "enormously important"

## HYGIENE PAPER MADE FROM RECYCLED CARDBOARD

Being a recycling expert, a cascade use of raw materials is enormously important for WEPA. Besides paper for recycling, the company also uses recycled cardboard as an innovative raw material for its hygiene paper.

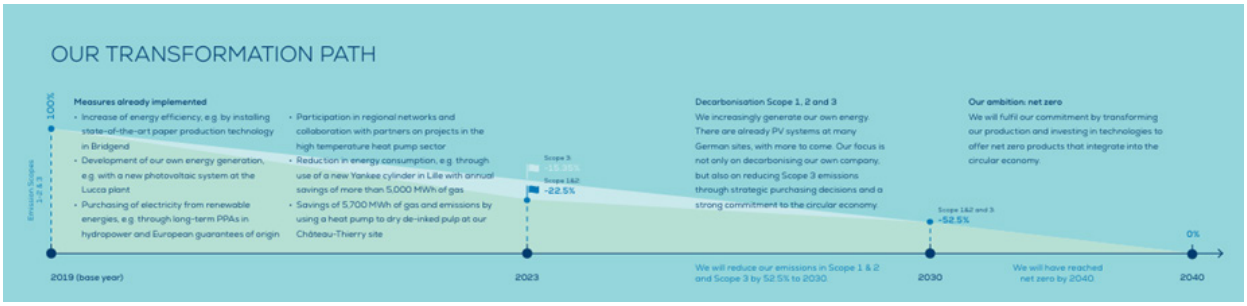
"We are the first manufacturer in Europe producing hygiene paper out of recycled cardboard on a large scale", Vormweg explains.

The hygiene paper made from recycled cardboard is produced without bleaching in the process. "That is why the end product has its characteristic beige colour. In the consumer shelf, you'll find the standard white grades the end-consumers all know well, and now there's our new beige product! "Some end-consumers associate the distinct colour with a lower quality because of the memories of old crepe paper, which was a grey and rough product. To convince them of the many positive advantages, the high softness and the outstanding sustainability characteristics, we have started our unique campaign 'beige is better' in Germany," Vormweg adds.

## THE "BEIGE IS BETTER" CAMPAIGN

"As a private label specialist for retailers, it was a unique approach to start a campaign addressing the consumer directly. The campaign activates consumers to make a responsible choice when they are in front of the supermarket shelf. We consider our beige products made from recycled cardboard as the future standard for hygiene paper. The large-scale campaign is a major milestone on that path forward, and there were many retailers that were enthusiastic about the approach and participated in the campaign. Even some that printed the campaign slogan on their own private label products. Now, it is our ongoing ambition to convince consumers of the outstanding quality and sustainability characteristics of our products. This presents a challenge, and we are already seeing incredibly positive developments resulting from the campaign."

"Not only are we convinced of our own products, but the market has also externally confirmed that this innovation is outstanding. Just last year, WEPA was awarded as a company with the German Sustainability Award in the category "Paper, cardboard and paperboard" Vormweg says. The German Sustainability Award is recognised as Europe's leading award for ecological and




**WEPA's sustainability transformation path going forward:** in the context of SBTi, WEPA's aim is to reduce its emissions by a relative 52.5% for Scopes 1, 2, and also Scope 3 by 2030

social commitment and is the most prestigious sustainability award in Germany.

In terms of single products, "Satino PureSoft", an unbleached, particularly soft tissue paper made from recycled cardboard for the WEPA Professional Business Unit was awarded with the "Ecodesign Award" – the highest state honour for ecological design in Germany.

## PRIVATE LABEL PRODUCTS

Germany is notorious for having a remarkably high private label market. Also, the majority of WEPA's products are private label offering high quality products. "These are difficult and challenging times for the economy and the society in general as well. In such times, increasingly more people are looking for quality products they can afford. Private label really has a particularly good standing here in Germany", Vormweg explains.

## THE PATH AHEAD

The WEPA Group has announced its vision to be net-zero by 2040. In the context of the Science Based Targets Initiative (SBTi), its aim is to reduce its emissions by a relative 52.5% for Scopes 1, 2, and also Scope 3 by 2030 with reference to the base year (2019).

Every mill, every site, is being thoroughly looked at and accessed so that the company can achieve its ambitions: "Investing in all of our site's sustainability transformation has been significant," Vormweg says. "The plan is a big puzzle, a lot of different building blocks. We are looking at every part of the business and ask ourselves where we can find good opportunities to transform to sustainable energy, what to do with waste streams, how we can further reduce our water usage... there are many elements to consider".


**'Beige is better':** WEPA has started a unique campaign in Germany to convince customers of the environmental benefits of its beige hygiene paper products made from recycled cardboard

# DRIVING FORWARD THE DECARBONISATION OF THE PAPER INDUSTRY

Lauded as a "ground-breaking" concept for sustainable tissue production, Essity's collaboration with Voith will take tissue-making to the next level. TWM Senior Editor Helen Morris interviews Elena Viviani, Technology Director at Essity, Jonas Bergström and Matthias Höhsl, both Senior Managers Disruptive Innovation at Voith Paper.


**Aiming to drive a completely new, scalable decarbonisation process across the global paper industry:** (L-r) Jonas Bergström, Elena Viviani, and Matthias Höhsl in front of the pilot installation at Voith in Heidenheim, Germany

Aiming to drive a completely new, scalable decarbonisation process across the global paper industry, in 2023 Essity and Voith announced an exclusive partnership working together on a pilot plant at Voith Paper in Heidenheim, Germany, which will enable CO2-neutral paper manufacturing.

Still in the ramp-up R&D stages, pioneer operations at the pilot plant commenced in 2024 and further research is now ongoing to enable "a fundamentally new CO2-neutral manufacturing process." The project is said to mark "a breakthrough in sustainable paper production", with the new technology "targeting new benchmarks for sustainability" by reducing freshwater consumption by up to 95% and lowering energy consumption by up to 40%, when compared to the conventional tissue paper making processes.

Funding of €14.5m has been granted by the German Federal Ministry for Economic Affairs and Climate Action to research the ground-breaking process into sustainable paper production. The funding is within the scope of the BMWK Decarbonisation of Industry programme and the EU's NextGenerationEU fund – initiatives designed to permanently reduce industrial greenhouse gas emissions. In February, TWM spoke to the project leaders – Elena Viviani, Technology Director at Essity, Jonas Bergströmand Matthias Höhsl, Senior Managers Disruptive Innovation at Voith Paper – to get the latest updates on progress.

**With its 'Papermaking for Life' development offensive, Voith, the leading full-line supplier, is investing around €100m annually in research and development to develop highly efficient solutions**

Swedish-headquartered tissue manufacturer Essity has called the pioneer project a "disruptive concept" that it says will "revolutionise and rethink the tissue manufacturing." Over the past few years, the company has already claimed industry-firsts when it comes to sustainability: in 2023, it announced it has successfully proven to produce tissue in a CO2 emission free production process – where no carbon dioxide is emitted at all, essentially producing zero emissions – process using renewable hydrogen at its plant in Kostheim, Germany. By completely replacing natural gas with green hydrogen, the production facility was able to reduce its fossil CO2 emissions to zero during normal operations. In 2021, it also started producing high-quality tissue from wheat straw at its plant in Mannheim, Germany, the first of its kind in Europe, and the first on a large-scale tissue production in the world.

With its 'Papermaking for Life' development offensive, Voith, the leading full-line supplier, is investing around €100m annually in research and development to develop highly efficient solutions that not only increase efficiency but also minimise the consumption of resources. A cornerstone of Voith's sustainability strategy is the development of this ground-breaking concept based on years of R&D work. In addition, Voith's subsidiary Toscotec is providing support as a specialist in tissue machines with process and plant development. This innovation highlights Voith's commitment to a greener industry and underlines its role as a pioneer in developing solutions that can significantly reduce the environmental footprint of the paper industry. Voith has set itself ambitious targets, particularly with regard to water and fibre consumption: By 2030, freshwater consumption is to be reduced by 90% and the recycling rate increased to 90%.

In addition, Voith aims to enable a completely CO2-neutral paper manufacturing process. Together with Essity, the company is approaching this goal fast: the concept forecasted to be proven in 2025, enabling CO2-neutral – when an activity or product balances out its carbon dioxide emissions by removing an equivalent amount from the atmosphere through carbon offsetting – tissue production.

Elena Viviani, Technology Director at Essity, says that currently, the drying step in the tissue machine process uses up 60-70% of the overall energy expenditure: "If we are able to tackle this, then we are definitely making a big improvement in neutrality, and also affordability considering all the resources together. One of the main aspects of this project is to drastically cut water use, and we can say that by drastically reducing water we are really

"One of the main aspects of this project is to drastically cut water use, and we can say that by drastically reducing water we are really changing and shifting the way we make tissue," Elena Viviani, Technology Director at Essity

changing and shifting the way we make tissue."

The making of tissue has been water based for millennia since the Egyptians, she adds. "So the only way we can really shift this paradigm is to cut the water out. And to cut the water out, especially in the forming phase, we don't then need as much energy to mechanically remove the water, and then we also don't need so much energy to dry the water."

At Essity's Mannheim tissue plant, Viviani says, the plant has a long history of process and product development. "Within the technology team that I am leading, we have the resources and capabilities there to put the project into operational use. It's very close to Heidenheim, so it's a natural choice. But it doesn't mean necessarily that the first industrial application will be at Mannheim. But we have the right capabilities there that complement the development and we are very pleased with the progress we are making on the pilot line."

Among innovation and leading in hygiene and health, sustainability is something characterised in Essity as a company, Viviani adds. "At the beginning of this adventure with Voith, we are a leader in hygiene and health, and that means we are the one that really needs to help drive this type of innovation. We see the need and we take the responsibility for it."

The development is also not just bound to Europe, but rather meant to go out on a global scale: "The industrialisation journey is yet to be decided. First, we need to finish the research and development on the pilot line," she adds.

Jonas Bergström has the project lead at Voith's side. He says the project has sparked a lot of curiosity, even within Voith: "The technology is fundamentally different. It's also a very inspiring environment to work with as it's something that's not an incremental change, but something that's completely new. We have the opportunity to really explore and we are working on a topic that is very relevant in today's marketplace. You can feel this amongst the teams here."

The pioneer project is also looking at things from a product perspective, not just from an environmental perspective: "It has a lot of potential, and it's very exciting to see that it can have its place amongst tissue grades," Bergström says. "Voith, Essity and Toscotec are working on developing the product as well as the progress together."

**The development not just bound to Europe, but meant to go out on a global scale: "The industrialisation journey is yet to be decided. First, we need to finish the research and development on the pilot line"**

The CO2 reduction has so far been "hitting the forecast spot" during the last two year, he adds. "It has certainly been the driving force for us to drive that down as much as possible. The ambition is to go CO2 neutral with the project, inside the whole project, so it won't have any combustion or gas and we can go CO2 neutral in the future. That's definitely one of the main targets."

Alongside that, he says the company is working at reducing the overall energy consumption compared to how tissue has been made for decades. "It's something that's very different. Additionally, we will save a lot of water as we have reduced the need for freshwater quite drastically. That's where we're aiming for the reduction of up to 95%, and that has been a great aspect for us within Voith. The issue of water has been climbing up in importance what with the hot summers we have been having and the ground water level sinking. CO2 energy reduction and water savings – they are the two main forces that are driving us to do this project."

How to achieve this is "still being researched and must be piloted," Bergström says. "We are confident of reaching the technical targets. We took the decision a year and a half ago to build the pilot line in Heidenheim and it is quite a commitment to do that. But it allows us to try this process under very industrial-like conditions, as you can do in a pilot line, and produce base material to validate the product quality. We can also confirm the energy consumption for future commercial processes."

Viviani adds that from the technology side of the pilot, it really is meant to be scalable. "This is one very relevant aspect is that the way the pilot is set up, it will help us directly in the scale up process. It is about the sustainability target, but we also need to fulfil the need of the consumers and make sure that the product coming out is of the high-quality we need, and which Essity is known for. Product wise we went to our other facilities, and we were trying to understand the range, as well as the process. The process is not frozen, we are still in the phase where we are adjusting and changing, so we are still on the journey. But we clearly see the potential, for both the process and the product."

Essity and Voith started into 2025 further researching the winning concept. The plan is to freeze the concept later in the year and start the optimisation process – which will result in an industrial application.

**"It is about the sustainability target, but we also need to fulfil the need of the consumers and make sure that the product coming out is of the high-quality we need, and which Essity is known for."**

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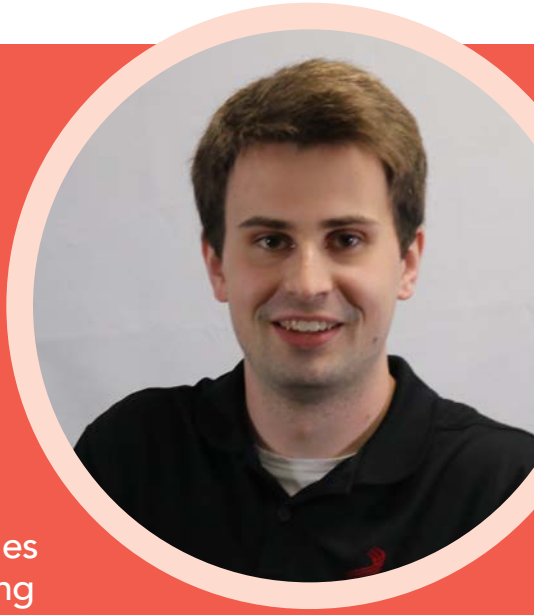
# HOW THE EVOLUTION OF SUSTAINABLE PACKAGING AT SMALL SCALE IS SET TO GO BIG



Paper overwraps on smaller packs of tissue products are increasingly more common on the shelves. But larger bundles present additional challenges. Infinity Machine & Engineering Corp.'s Marketing Coordinator Gregory Sense explains the need for progress.

As ecological consciousness has continued to become more prevalent on a global scale, consumer data has clearly indicated that individuals take their own environmental impact into account when making purchasing decisions.

In a 2020 consumer study conducted by McKinsey & Company, 78% of consumers indicated sustainability as an important factor of their lifestyle and more than 60% of consumers stated they would be willing to pay more for a product if it was packaged sustainably.

In consumer product industries like tissue, sustainable packaging creates an opportunity for product differentiation. If brands utilise sustainable packaging effectively, there is increased potential to establish and develop customer loyalty.

Infinity Machine & Engineering Corp. produces both multi-pack and single roll wrappers with a proven history of providing sturdy, sustainable, primary packaging for tissue rolls across a multitude of formats. Due to Infinity's innovative packaging machinery, smaller packs of bathroom tissue and kitchen towel wrapped in paper overwrap are becoming increasingly more common in storefronts.


**Infinity's innovative packaging machinery:** smaller packs of bathroom tissue and kitchen towel wrapped in paper overwrap are becoming increasingly common

Despite the advantages of sustainable packaging, next time you go to your local supermarket, you may be surprised to see how little it is being utilised in large bundles of tissue products.

The immediate solution would seem to be replacing polyethene packaging with more sustainable paper overwrap, as it is done in smaller packs. However, large bundles of multiple tissue packs present additional challenges. The increased mass of bundles makes paper wrapped solutions much harder to implement effectively, especially when you consider the durability polyethylene provides.

**A fixture of tissue packaging:** Infinity's C15 casepacker debuted in 2010

Furthermore, the difference in material properties between paper wrap and polyethene would require new means of forming, sealing, and cutting bundles, which would require additional engineering and development.

Confronted by this dilemma, Infinity engineers further developed some of our existing capabilities to provide a more ecological alternative to polyethylene bundlers.

Since its debut in 2010, Infinity's C15 casepacker has become a fixture of tissue packaging, with over 250 machines installed across six countries. Designed to provide secondary packaging for tissue, diapers, and hygiene products, the C15 can pack product into corrugated cases or trays.

While cases are much more common, corrugated trays are becoming more frequently utilized due to the ecological benefits they offer. Corrugate trays can often be made using less than half the material of cases, with the C15 capable of loading trays with bottom gap flaps and a wall height as small as 100mm.

These trays can suitably support poly wrapped or paper wrapped packages and can be designed with easy open perforations for display. Some supermarket chains in North America have already begun to adopt these display ready trays.

The utility of these trays doesn't end with display functionality. Utilising trays instead of bundles for bulk tissue packaging creates a unique way to differentiate products, while also improving the sustainability of product packaging.

Innovative packaging solutions that prioritise the environment, like replacing plastic bundles with corrugate trays, ensure that sustainable packaging is not a trend, but rather an evolution of the industry. Infinity Machine and Engineering Corp. is committed to being at the forefront of this evolution, ensuring that our customers can prioritise sustainability and functionality.

*This article was written for TWM by Infinity Machine & Engineering Corp.'s Marketing Coordinator Gregory Sense.*

**Display ready trays:** the trays support poly wrapped or paper wrapped packages, and can be designed with easy open perforations for display

# CHOOSING THE RIGHT CASE PACKER: SIDE INFEED VS. TOP LOAD

Josh Goulet, Account Manager at Edson, outlines what the 3600 Series side-infeed case packer and the 4000TL top-load case packer can do. A TWM report.

Selecting the right case packer is crucial for maximising efficiency, maintaining product integrity, and optimising production performance - especially in the tissue and nonwoven industries. At Edson, we offer two distinct solutions to meet varying packaging needs: the 3600 Series side-infeed case packer and the 4000TL top-load case packer. Each system is engineered for specific applications, but how do you determine which is the best fit for your operation?

The decision largely depends on factors such as product type, pack orientation, case style, and required line speed. The 3600 Series, with its side-infeed design, excels in high-speed environments where stable products can be efficiently collated and pushed into a case, while the 4000TL is designed for delicate or irregularly shaped items that require gentle handling and precise top-load placement. This guide will help tissue converters and manufacturers understand the key differences between these two systems and make an informed choice.

When to choose a top-load case packer

If flexibility, space efficiency, and modularity are top priorities, the Edson 4000TL top-load case packer is the ideal choice. Unlike side-infeed systems, top-load case packers replace manual hand-packing stations while maintaining a compact footprint—making them perfect for facilities with limited space.

One of the biggest advantages of the 4000TL is its modular design. Additional modules can be integrated to pack multiple cases simultaneously, boosting throughput without compromising precision. This scalability allows the system to grow with production demands.

Another factor to consider is case management. Unlike side-infeed systems, the 4000TL requires an external case erector and sealer. While this setup may require additional space planning, it also allows for streamlined integration if the case forming and sealing processes are already optimized elsewhere in production. For lower-volume operations, cases can be manually erected and sealed if full automation isn't necessary.

Top-load case packing is particularly well-suited for products such as hard-wound towels, jumbo roll tissue, napkins, hand towels, and diapers – items that demand gentle handling and precise placement. This system ensures that bulkier or more delicate products are packed securely, reducing the risk of damage during packaging.


**Flexibility, space efficiency, and modularity:** the Edson 4000TL is designed for delicate or irregularly shaped items


**Fully integrated case packing:** the 3600 Series excels in high-speed environments

## WHEN TO CHOOSE A SIDE-INFEED CASE PACKER

For high-speed, fully integrated case packing, the Edson 3600 Series side-infeed case packer has been prominent in the market for over 20 years. Engineered for efficiency and throughput, it erects, fills, and seals cases within a single machine minimising the need for multiple pieces of equipment while maximising productivity. Capable of speeds up to 26 cases per minute (CPM), the 3600 Series is ideal for high-volume applications such as bathroom tissue, kitchen towels, diapers, and facial tissue.

One of the key advantages of the 3600 Series is its ability to automatically feed knock-down-flat (KDF) cases into the system. This eliminates the need for manual case handling, ensuring seamless, continuous operation and reducing labour requirements.

Additionally, the 3600 Series can be equipped with Edson's innovative Robotic De-Strapper, a game-changing addition for manufacturers. Traditionally, de-strapping has been a labour-intensive and potentially hazardous manual process, requiring workers to cut and remove plastic or metal bands securing stacks of KDFs. The Edson Robotic De-Strapper automates this step, safely and efficiently removing straps and preparing product stacks for case packing without manual intervention. This not only enhances worker safety but also improves line efficiency and reduces downtime.

The Edson 3600 Series offers a high-speed, high-volume case packing solution with full integration and proven reliability.

*This article was written for TWM by Josh Goulet, Account Manager at Edson.*

# TARIFFS AND TRADE EMBARGOES … HOW COULD THEY AFFECT TISSUE'S SUPPLY CHAINS?

Somnath Ray, Principal, AFRY Management Consulting, urges the industry to assess the risk of potential disruption to traditional international and regional logistics.

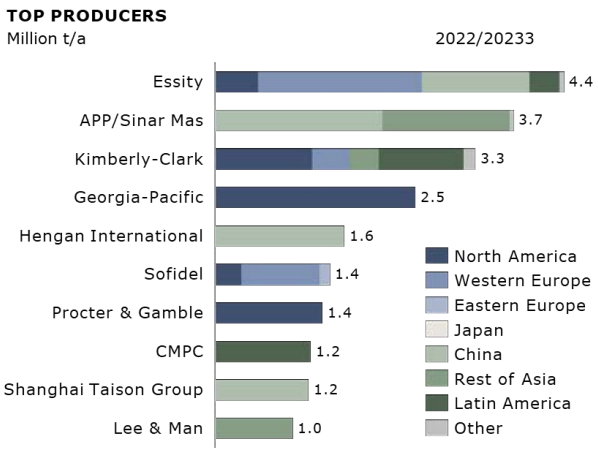
The global tissue market has experienced a consistent upward trend since the 1920s when tissue papers started to receive widespread adoption. This enduring growth can be attributed to several factors, such as increasing disposable incomes and rising healthcare expenditures, which constitute a solid foundation for growth. The tissue market also weathered several challenges to demand from salvos such as market downturns, market stagnation due to population growth changes in certain regions, and much more. And recently, like most of the paper and paperboard segment, the tissue paper segment also woke up in 2025 with headwinds from tariffs and embargoes.

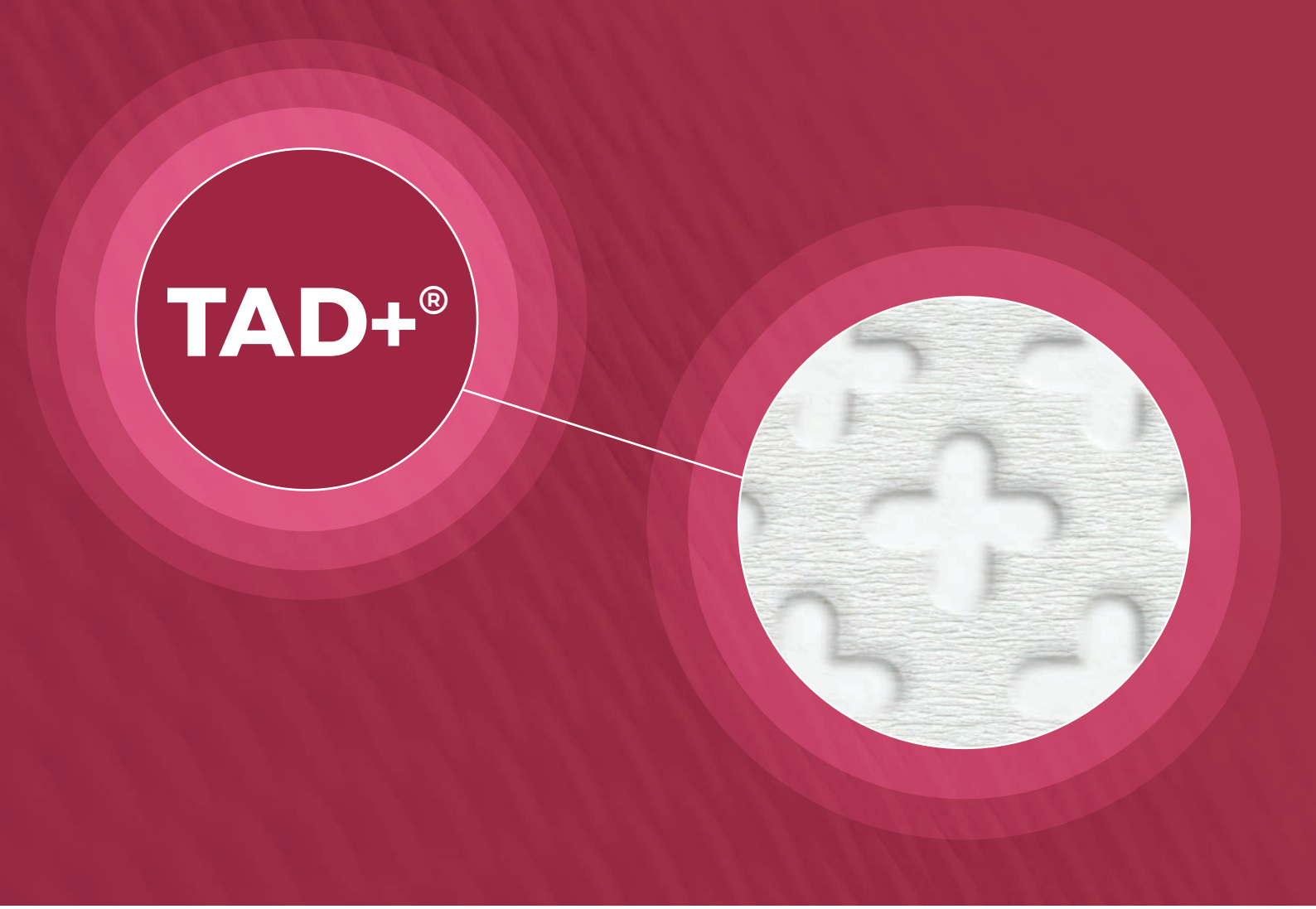
Unlike any other paper commodity, the general wisdom is that tissue paper doesn't travel far, so the headwinds should have a limited impact. However, I was subtly reminded of an interesting conversation on a recent trip to South China, where I had the chance to visit several tissue converters that produce different private labels and other brands. Many of these enterprising operations procured jumbo rolls and converted tissue per the customers' needs in domestic and international markets. We had some interesting discussions, and past the usual talk about business dynamics and market growth, several strategic questions cropped up.

The general theme was the worry about disruption of international trade due to upcoming changes in governments and their ideologies – in short, the possibility of bringing back some of the tariffs and trade embargoes we saw a few years back. This made me wonder if there is an international market supply or a regional supply for tissue paper, and which one is more dominant so we can gauge the exposure from tariffs and trade embargoes.

As a hypothesis to investigate further, we saw two possible trade models – jumbo reel production in one region to be converted in the destination region, and international direct-to-consumer supply through either e-commerce portals or other supply channels. The first is a tried and tested model, which several Asia-based producers are increasingly pushing forward through strong relations with converters and brand development. However, the second model is relatively new and has been shipping products promoting "direct to consumer"

## Figure 1: Top producers' capacity by region



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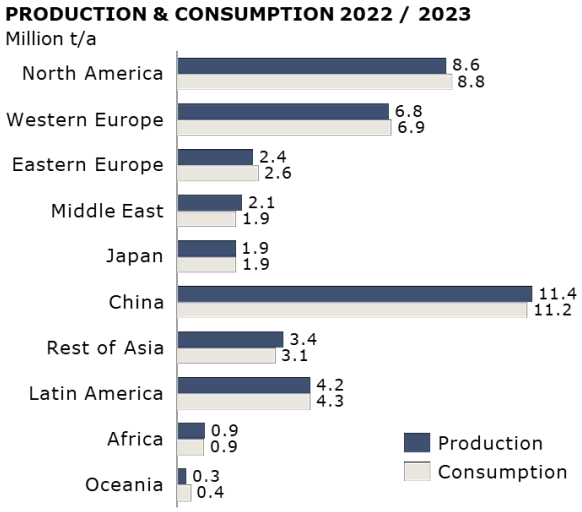
## Figure 2: Global Tissue Paper Production and Consumption




low-cost models. We see widespread discussion and scrutiny of these platforms as they have had explosive growth in the US, bypassing de minimis requirements. Also, this was the one I mentioned that was discussed more during the recent trip.

The dominant trade model in the tissue paper market depends on several elements. Generally, the tissue paper market is a high-volume, low-cost production model focused on economies of scale, efficient distribution networks, and consistent quality control. Major players like Kimberly-Clark and Essity rely on brand recognition and product differentiation to maintain market leadership. Similarly, several Asia-based producers have also developed their own brands over time.

These key elements of this business model impact in varying degrees:

- Production and converting: Producing tissue paper (jumbo rolls) at a single facility to benefit from cost reductions through bulk purchasing raw materials and optimised production processes. And then ship them to the destination market to be converted into finished products. Another approach has been to focus only on one market with production to convert at one location. So, to reap the most benefit it makes most sense to be close to key demand markets.

- Vertical integration: Controlling multiple stages of the production process, from pulp sourcing to packaging. Also, often having their own dedicated converters or partner converters on long-term contracts. This is done at varying levels to maintain brand quality, streamline operations, and reduce costs. Investing in all stages of the production process is a decision based on location, access to fibre and investment appetite topic.

- Distribution network: Maintaining a robust distribution network to reach a vast customer base through supermarkets, convenience stores, and wholesale channels. Also other channels as the fast growing ecommerce market.

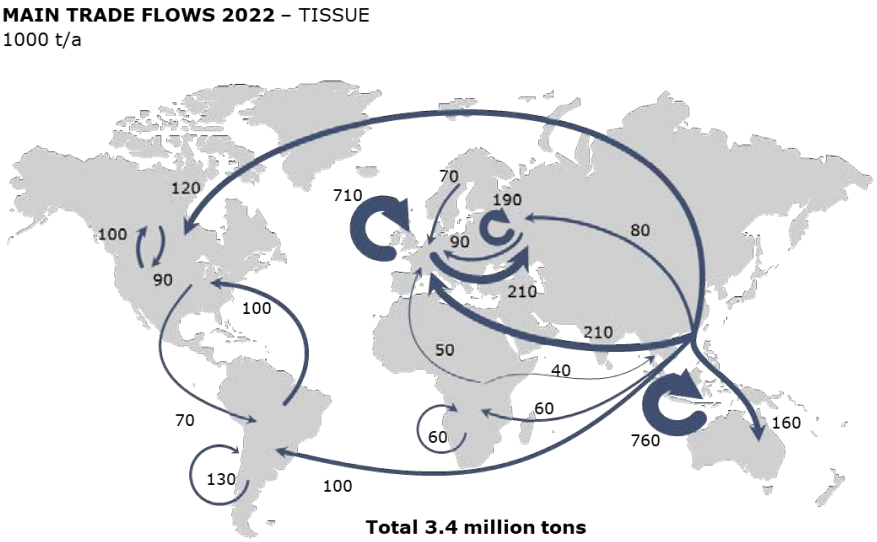
Other elements also set a more strategic approach, particularly from product diversification needs, cost optimisation, brand recognition and loyalty, sustainability initiative, and innovation.

We start with where the production is by the top producers. As is evident except in a few cases, most producers are very regional. It is back to their approach to maximise the vertical integration to reap efficiencies and cost competitiveness. Also, most of the producers are in the region with access to raw materials and a large demand of tissue paper. On the other hand, for some producers with higher integration it brings more challenges in terms of global growth.

Next, pairing the tissue paper production and consumption, our argument that tissue paper is produced where it is consumed is further enforced. Since the early 2000s, developing and emerging economies have begun to significantly contribute to global volume growth, accounting for over 80% of growth over the past decade, with total global tissue consumption increased to be 41.9 Mt (2022).

However, out of the 41.9m tons of tissue consumption, 3.4m tons are traded globally to be further converted locally in the destination market. This is sizable trade with majority traded with closely related regions, driven by the logistics cost and specific consumer requirements of inter-related markets. This is evident in case of Europe and Asian regions with sizable volumes being traded within the regions.

Figure 3: Global Tissue paper (for converting) trade flow

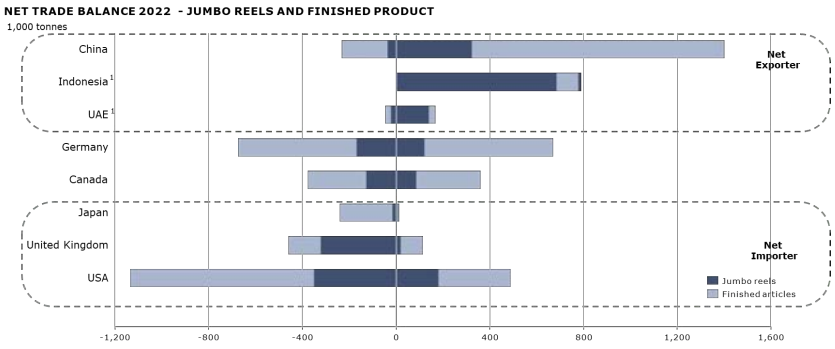



Next, when we look further across some selected countries comparing the trade of jumbo reels and finished products, there were some interesting revelations. Certain countries, for example China and Indonesia, are a net exporter of both jumbo reels and finished products. China was the biggest outlier with more finished products being exported, while the USA on the other end is a net importer of finished products. This is again a substantial volume with possibilities to trigger some scrutiny. This is again mostly absorbed by the continued move to private label (PL), as compared to branded tissue finished products. PL in North America is historically not as strong as in Europe. Furthermore, this trend of PL focused players is becoming bigger in the USA, while players with the big brands are becoming fewer, causing more disruption. Similarly, in case of Indonesia, the dominant trade flow is for jumbo reels which are being further converted in other regions, likely to bring scrutiny from the local market regulators.

In conclusion, in case of very selected few countries, there is a dominance of more finished products being exported either through traditional supply channels or e-commerce portals. Also, these are the ones that more exposed to geopolitical risks. This is an interesting market situation to note and is very contrary to the usual thinking related with tissue paper market models. Additionally, it supports the concern on tariffs from some of the producers that we interacted with.

This situation will intensify when the additional capacities come online in Asia by 2030 and they also start looking for more export markets for both jumbo reels and finished products. An interesting market. However, it remains to be seen how far this impact is going to happen and to which segments. Definitely a topic of discussion for another field trip.

Figure 4: Net trade balance of Jumbo reels and finished products (selected countries)



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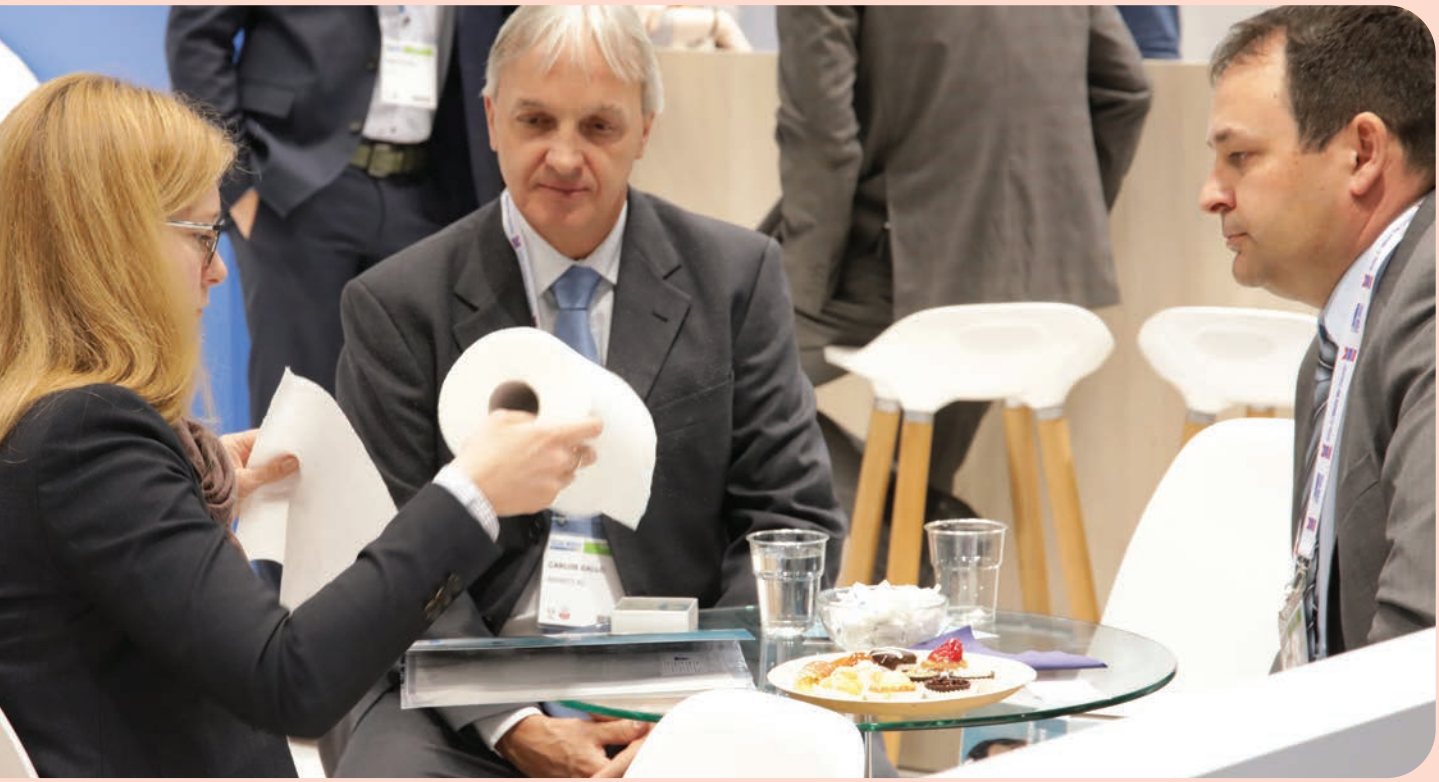

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