# Planet

## Circularity and a world without waste

**At the heart of our sustainability strategy is our desire to reduce our environmental footprint related to climate, land, and water and to make a positive environmental impact. This means rethinking production processes, improving resource efficiency through beneficial use of byproducts, reducing waste, and reducing $CO_2$ emissions. It also means supplying packaging that protects our customers' products and has been designed to avoid packaging waste and litter. Our operations embody a circular business model and the legacy companies' sustainable forestry and fiber sourcing policies that we have in place support the protection of ecosystems and biodiversity.**

## In Planet, our priorities are:

### Climate change

We are tackling our $CO_2$ emissions by focusing on energy demand reduction, improving our energy efficiency, as well as moving from fossil fuels to low-carbon renewable energy where feasible. Our circular business model also supports our approach to climate change.

### Forest

Approximately 44% of fiber used in our products is from virgin materials sourced from responsibly managed forests. Sustainable forest management for us involves managing supplies of responsible, renewable fiber, while protecting biodiversity and ecosystems.

### Water

Approximately 90% of the water we use is returned to nature in good condition and the rest evaporates during our processes or is bound to the product. We focus on improving the quality of water discharge, decreasing water intake and understanding water related risks.

### Waste

Approximately 56% of fibers used in our products are recycled fiber, supporting a resource efficient circular economy. Our raw material is renewable and recyclable. We continually seek alternative uses for our byproducts and waste.

# Planet

## Key Principles

We operate a circular business model using recovered fiber and renewable virgin fiber that are sustainably sourced. We reuse or recycle side streams, and, where possible, we use renewable energy, striving for energy efficiency where we can. This circular approach helps reduce costs as well as being more sustainable. Our water stewardship is based on the efficient and responsible use of water in our processes and returning it back to nature after it has been treated.

Operating in **40** countries

**677** production sites

Our operational footprint is significant, in 40 countries and 677 production sites primarily in North America, Europe and Latin America, and with some operations in Asia, Africa and Australia. We aim to make a positive environmental impact in our operations, from sustainable and responsible raw material sourcing to lowering our customers' environmental footprints through the design and supply of paper-based packaging.

Our circular business model starts with sustainable, primary raw materials. Forests themselves are an example of a natural closed-loop system, fundamental for local climate and water systems. When managed sustainably, they also provide a renewable source of raw materials for industry, store carbon and create employment opportunities. As a significant consumer of recovered fiber in North America and Europe, approximately 56% of our raw material is recycled fiber. We collaborate with local organizations where feasible to find alternative uses for the rejects we receive from our recovered fiber deliveries that cannot be used in our processes. We use organic byproducts as biofuel in a number of our operations and circulate our process water multiple times before treating it and returning it to the water system.

Smurfit Westrock understands the importance of climate change, and in turn, the need for climate-related financial disclosures in line with the TCFD. We are also developing a greater understanding of nature-based risks and opportunities and expect this to develop further as we plan to report in line with the TNFD framework in 2027 for financial year 2026.

When developing new products with our customers, we look at synergies across the value chain. For example, by designing packaging solutions, we can create efficiencies in our customers' packaging lines and we can improve the recyclability of the packaging after use. Achieving these synergies requires a shift from linear to circular models creating opportunity and a need for innovation.

We are currently developing sustainability targets which we expect to finalize by the end of this year. The interim climate targets set by both legacy companies, validated by the Science Based Targets initiative ('SBTi'), demonstrate the alignment in both companies' climate strategy.

Our environmental sustainability strategy is divided into four main areas: Climate Change, Forest, Water, and Waste. These areas cover the most material environmental matters in accordance with our business and stakeholders' expectations. As outlined on page 20 we have progressed our double materiality assessment based on the current CSRD and ESRS text. The relevant ESRS topics within our Planet section are outlined on the next page.

Smurfit Westrock progressed an ESRS-aligned double materiality assessment during 2024 (see pages 20-21 of this report). The following (ESRS-aligned) environmental topics were identified as material to the Company:

| ESRS topic | ESRS Subtopic(s) | Why is this material | Timeframe | IRO |
|---|---|---|---|---|
| **E1 Climate change**  | • Climate change adaptation<br>• Climate change mitigation<br>• Energy | Climate change is a material topic for the Company due to the energy intensive manufacturing nature of our business. Customer expectations are for their supply partners to be aligned on decarbonization strategies. | Short term<br>Medium term<br>Long term | Impact<br>Risk |
| **E2 Pollution**  | • Pollution of living organisms and food resources | For manufacturing companies there is a risk that the incorrect handling of manufacturing wastes and pollution from their processes could lead to a negative impact on society and the environment. | Short term<br>Medium term<br>Long term | Impact |
| **E3 Water**  | • Water | Water is critical in the paper making process, so access to water is a key consideration. As a processor of water, our focus is in the water quality we emit back to nature. | Short term<br>Medium term<br>Long term | Impact<br>Risk |
| **E4 Biodiversity and Sustainable Forestry**  | • Direct impact to biodiversity loss<br>• Impacts and dependencies on ecosystem services | Wood fiber is a renewable raw material, and by practicing and promoting sustainable forestry, we work towards tackling biodiversity loss while supporting social benefits from forestry to local communities. | Short term<br>Medium term<br>Long term | Impact<br>Risk |
| **E5 Circular Economy**  | • Resource inflows, including resource use<br>• Resource outflow, including products and services | Circularity and waste prevention, both from our own products and also in our manufacturing, are essential to our business. We do this by maximizing the use of our side streams when feasible, as well as playing a major part in paper recycling. | Short term<br>Medium term<br>Long term | Impact<br>Opportunity |

## Climate Change (E1)

Climate change requires immediate action. As paper manufacturing is energy intensive, our Carbon Dioxide Equivalent ('$CO_2e$') emissions impact our efforts to limit climate change to 1.5 degrees. We believe that working towards a net zero future is critical for many of our stakeholders. Failing to have a decarbonization strategy brings the risk of lost sales, increasing energy prices, fines and reputational loss. Climate change itself poses a risk to Smurfit Westrock's essential raw material supplies, possibly leading to reduced productivity, increased raw material costs and business interruptions.

Climate change has the potential to impact our business operations in a variety of ways. Extreme weather patterns may affect our operations and supply chain, potentially impacting forests, water, carbon regulation, taxation, energy availability, and affordability. Drought, flooding, and local restrictions on water usage may limit our access to water. To manage these water-related risks we conduct water risk assessments at our paper and board mills.

Forests play an important role in environmental resilience, especially in mitigating the impacts of climate change. We promote healthy forests and manage these resources sustainably.

Forests play an important role in environmental resilience, especially in mitigating the impacts of climate change.

We recognize that mitigating climate change requires a global shift to a low-carbon economy. As a global leader in sustainable paper-based packaging, we are working towards a net zero future. We recognize the European Union's Green New Deal objective of net zero emissions by 2050. We also believe there is a risk of carbon leakage if national emission policies are not consistently applied across jurisdictions.

The Forest Fiber Industry 2050 Roadmap to a low-carbon bioeconomy shows that a $CO_2$ reduction of 50%-60% from a 1990 level is possible for our sector, based on available and emerging technologies. To reach an industry reduction of 80% or more by 2050, breakthrough technologies must be available sooner.

We play our part, for example, by testing new technologies, such as the hydrogen project in our Saillat paper mill in France. WestRock signed two Virtual Power Purchase Agreements ('VPPA') with the deals supporting the construction and operation of two solar energy farms in Texas, U.S.

Smurfit Westrock uses external platforms, standards, and frameworks such as TCFD and SBTi to help guide its work toward a net zero future. In this report, the Company has published its first Net Zero Transition Plan and in 2024, we commenced a climate scenario analysis project across all the sites of Smurfit Westrock. This will be supported during 2025 by additional modelling of our climate risks at operating site level. We expect the learnings from this review to form part of our 2025 financial year reporting.

Read more on pages 32-37 of this report.

## Scarce Resources (E4)

We focus on promoting and supporting sustainable forestry practices across our value chain, which can support the protection of ecosystems and endangered species. If forests that supply our wood fiber are not managed sustainably, they may contribute to deforestation and loss of biodiversity and increased costs.

The loss of biodiversity and poor forestry practices can also threaten our raw material supply by risking forest health, leading to higher costs, asset loss, and decreased productivity. We may also have a risk of not complying with regulations, such as the EU Deforestation Regulation ('EUDR'), if we don't maintain a high level of due diligence concerning our forest-based supply chains, which can lead to fines and increased scrutiny.

Deforestation is a particular concern for businesses supplying consumer goods and food, and this means a focus on their supply chains. Our stakeholders expect Smurfit Westrock to use sustainably sourced raw materials efficiently, especially fibrous raw material.

Smurfit Westrock participates in sustainable forest management through its own 100% FSC and/or PEFC-certified forests and plantations, and by only sourcing fiber from responsibly managed forests.

Approximately 44% of the fiber supplied to our paper mills is responsibly sourced from forests through CoC-certified supply chains. Trees capture atmospheric carbon, which remains sequestered in our fiber. Forests also contribute to the water cycle by regulating climate and purifying water. They also supply local industry and provide employment.

Approximately 56% of our fiber is recycled fiber. We recover paper-based packaging from our customers and other sources, making our circular process part of our product's end of life. For us, material efficiency means that we are recycling our fiber as long as possible, practically producing new packaging from old packaging. As a natural, organic raw material, wood fiber does, however, lose some of its qualities and shorten after being recycled multiple times. Using sustainably sourced wood fiber as part of our packaging solutions means our renewable, recyclable raw material is part of the wood fiber cycle.

Read more on pages 38-45 of this report.

CASE STUDY

## Making investments to reduce emissions and waste at our mills

### Installing solar power and creating circular production processes.

Smurfit Kappa demonstrated its commitment to sustainability through the completion of two state-of-the-art investments in Spain.

First, we installed over 12,000 solar panels at the Sangüesa paper mill, which reduces the mill's annual $CO_2$ emissions by over 3,000 metric tonnes. The €6 million photovoltaic system is the largest of its kind in the Navarra region.

Alongside the Sangüesa mill's biomass and recovery boilers, the new system generates more than 50% of its annual energy requirements. Since 2005, the Sangüesa paper mill has reduced its $CO_2$ emissions by more than 51%. Five of Smurfit Kappa's plants in Europe and North Africa are now supported by power from self-generated solar energy.

Taking on the biggest landfill reduction project in legacy Smurfit Kappa's history, €27 million was invested into creating circular production processes at the Nervión paper mill. The infrastructure improvement eliminated 75,000 metric tonnes of waste sent to landfill and reduced road transport by 450,000 km per annum.

## Responsible Water Stewardship (E3)

Water scarcity is a global concern, and water is critical in paper manufacturing. Freshwater resources are not evenly distributed globally, and human activity is still degrading its quality. Therefore, we have the potential to negatively impact water availability in scarce areas. Additionally, our water discharge, if poorly managed, may further negatively impact these resources. Either can lead to a risk of increased water-related costs and/ or business interruption.

We take responsible water stewardship seriously. The water we use is recycled in the process many times before treating it and discharging it. Both legacy companies had mapped and evaluated their water-related risks using the World Resources Institute Aqueduct tool, and Smurfit Kappa also used Water Resource Filter ('WRF'). Following the combination, the Smurfit Kappa water risk assessment program has been extended to mills in the WestRock business as well.

Read more on pages 46-49 of this report.

## Embedding Circularity (E5)

Smurfit Westrock has the potential to positively impact the environment through the efficient use of its side streams, such as biofuels, and through adoption of alternative fuels. The Company plays a significant role in paper recycling globally through its 63 recycling depots, which give us the opportunity to further increase the recycling infrastructure and paper recycling rates, which can lower costs, secure raw matrial supplies and deliver more sustainable outcomes.

A part of circularity is knowing the source of our raw materials and returning them to the production cycle. We depend on natural resources, so we aim to make our operations restorative by minimizing waste and improving efficiency. We source natural materials responsibly, replacing and reusing resources where possible and working with our partners to deliver better circular outcomes.

Using renewable wood fiber makes us a part of the biological and technical cycles of the circular economy. The biological cycle is called 'bioeconomy,' and it covers production and maximum value capture of renewable biological resources, including their reuse, recycling, and sustainable return through biodegradation. The technical cycle covers the circularity of mainly non-renewable, processed resources. Paper and paper-based packaging are involved in both cycles and move between them.

We focus on material efficiency and aim to use all our production byproducts ourselves, or through partnerships with third parties such as business neighbors and local communities. Paper clippings from corrugating and converting operations are returned to our paper and board mills. Organic byproducts, wood bark, saw dust, and black liquor, are used as biofuel. We work with local organizations that can use other materials, for example, some water treatment sludges can be composted to make soil amendments for agriculture, and waste ash can be used to make cement. We also seek alternative ways to treat our rejects from the fiber recovery processes, such as pelletising the plastic waste for alternative fuels.

We recycle our process waters several times and invest in water treatment infrastructure, applying best practice where feasible. Biogases from treatment processes become fuel in some of our combined heat and power ('CHP') plants. At some sites, we work with local communities, sending our effluent to local municipal water treatment plants where it can replace necessary nutrients.

In Europe, paper-based packaging collection rates are higher than any other packaging material at 90.5% based on data from 2022 (Eurostat) and in the U.S. and Latin America it is among the most recycled materials. Material leakage happens when used products are not being recycled but end up in landfill or as litter, so we believe there is both a business benefit and environmental benefit to improving recycling rates and reducing leakage.

We benefit from paper being relatively easy for consumers to recycle. We work with municipalities and retailers to collect discarded paper packaging for recycling. Our fit-for-purpose packaging aims to avoid over-packaging and waste, and we offer mono-material paper-based packaging solutions which can facilitate recycling.

Read more on pages 50-53 of this report.

## Monitoring Emissions (E2)

The sustainable management of our emissions related to air, water, and soil is important, and a failure to do so, could have a negative impact on society and the environment. We monitor our emissions globally and our operations are located mainly in areas where operations have environmental permits mitigating these risks.

The permits our sites receive set the minimum levels for pollutants, and we monitor our processes carefully to keep our operations well within these limits. We report internally and externally, as required, on our performance against our discharge permit requirements.

We report on our material emissions and this data can be found for each legacy company on pages 54-63 of this report.

## Working with Life Cycle Assessments (E5)

The aim of the circular economy and waste hierarchy is to be a resource-efficient and environmentally sound choice hierarchy. Our stakeholders, especially customers and regulators, are interested in LCAs to better understand the impacts of our packaging solutions. As a result, we have developed tools to calculate relevant LCA data for our customers, typically these are carbon footprints.

Smurfit Westrock participates in various LCA projects: a number of our research colleagues were recently awarded the 2024 Technical Association of the Pulp and Paper industry ('TAPPI') Journal Best Research Paper Award and Honghi Tran Prize for their paper on the life cycle carbon analysis of packaging products containing non-wood residues: a case study on linerboard and corrugated medium. As members of Cepi, we take part in the EU Product Environmental Footprint development work; we are an active member in FEFCO projects, both by supplying data for industry LCA studies and by working in a study to understand the corrugated packaging LCA; we also participate in our customers' LCA studies and use our data and tools for our own LCA calculations. All these LCA projects deliver valuable information that is further used to drive raw material and process improvements where feasible.


CASE STUDY

Reduced annual emissions by over 1,000 tonnes

## Creating a roadmap for decarbonization

Our Roermond paper mill in the Netherlands is on its way to significant carbon emissions reduction.

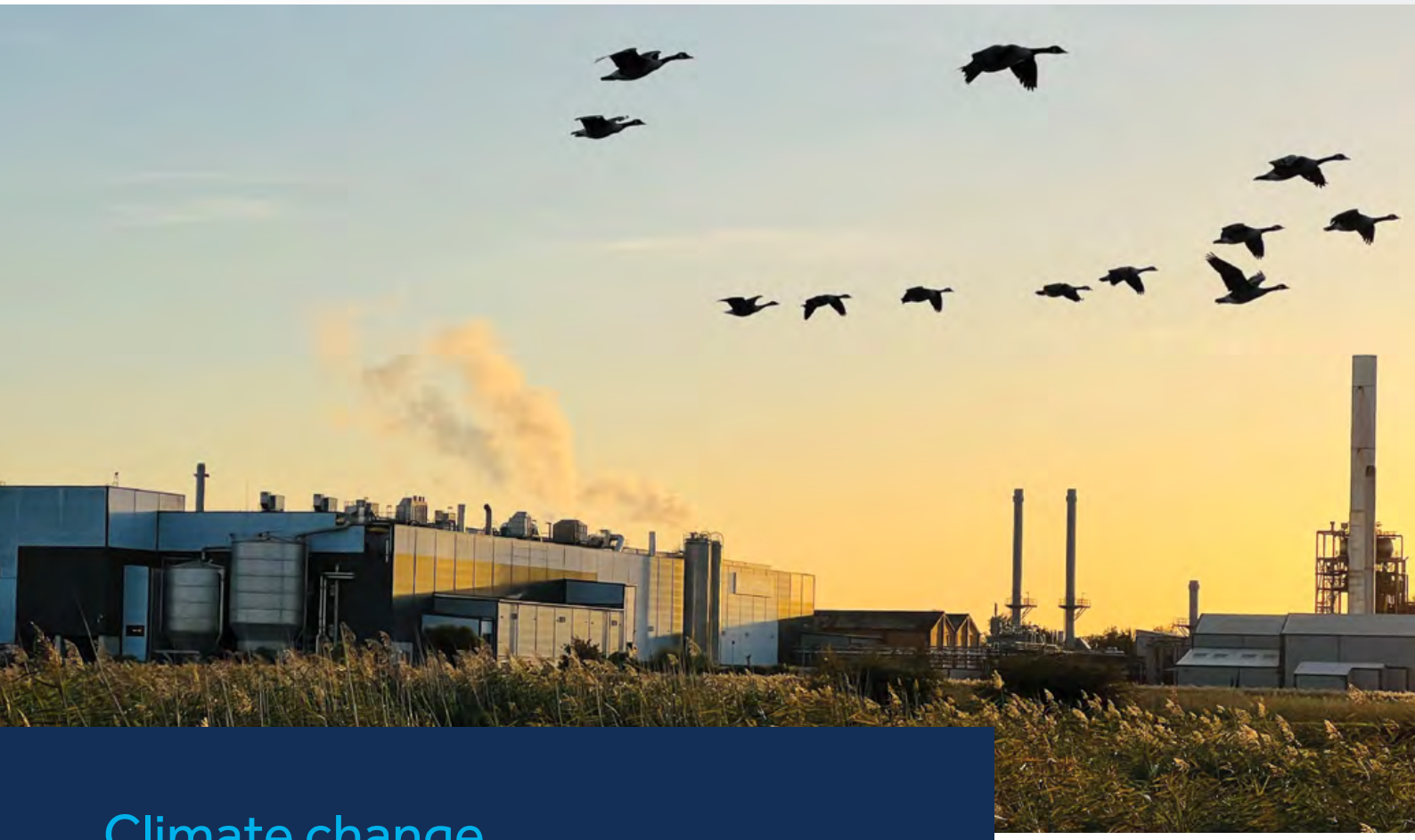
The Roermond plant produces 660,000 tonnes of paper annually, all from recycled fiber. With a new press and plans for electrification, the plant serves as an industry example of sustainable processes.

The plant team worked with Voith to redesign its press, creating a high-performance shoe press that reduces the steam it needs to dry paper. Reducing steam usage by 7,500 tonnes yearly significantly reduced the mill's carbon emissions by over 1,000 tonnes. Roermond is the first mill in the industry to apply this type of shoe press design, and the technology could be adopted by more of our mills in order to further reduce emissions.

Plans are also in the process to electrify mill processes in order to reduce $CO_2$ emissions further. Scheduled for completion in early 2027, these plans include:

- increasing the grid connection to 72 MW;
- adjusting onsite infrastructure, which is now in the pre-engineering phase; and
- building and implementing two electric boilers, now in pre-engineering as well.

The mill works with the national grid to try and optimize grid energy use, with the mill scaling its grid energy usage up or down to support the grid's needs.



# Climate change

Paper manufacturing is energy intensive, with a risk of carbon leakage if emission policies are not consistently applied. We believe that combatting climate change will only be achieved by a global effort, across societal stakeholders.

The challenge of achieving the Paris Agreement and the UN 2030 SDGs will require strong and concerted action to deliver on the levels of commitments across all sections of society. The need to decarbonize is heightened further by the demands and expectations of our customers. We align our climate change strategy with the UN 2030 SDGs 7 (Affordable and Clean Energy), 12 (Responsible Consumption and Production) and 13 (Climate Action), which are related to climate change.

One of the key areas where we can manage our impact on climate change, is through climate change mitigation activities, which focus primarily on reducing $CO_2$ emissions. This can be achieved by using energy more efficiently, generating energy in a more efficient way, by investing in renewable energy, and considering and trialing new and emerging technologies.

Reducing energy use and moving to lower carbon, renewable sources of energy are core elements of our climate change strategy. The strength of our approach is demonstrated through our actions today, our independently assured climate performance (for both legacy companies), and our ambition of working towards a net zero future, supported by our Net Zero Transition Plan. We also focus on increasing the efficiency of our own production systems, lowering our customers' carbon footprints and decreasing $CO_2$ emissions in our supply chain, through actions such as transport optimization.

Smurfit Westrock is working towards a net zero future and while we believe we can play an important role, we also believe that delivering on a net zero future will rely on new and evolving technologies as well as supportive regulation.

Both legacy companies had set interim targets on reducing their emissions in line with the Paris agreement which were also validated by the SBTi. In line with the efficient resource-use hierarchy, we only use wood biomass, for which no higher value-added purpose exists, as fuel and we also use residual products of wood, such as black liquor, to generate energy.

This section of the report should be read in conjunction with our TCFD disclosure which can be found on pages 133-141 of this report.

CASE STUDY

# Reducing GHG emissions through investments in solar energy

Renewable energy deals paved the way for the construction of two new solar energy farms.

WestRock signed two major renewable energy deals in 2023. Working with Schneider Electric, it developed two virtual power purchase agreements (VPPAs) to support the construction and operation of two solar power projects in Texas, U.S. by ENGIE North America. The 15-year contracts not only add a significant amount of clean energy to the U.S. power grid, but they also supply Smurfit Westrock with renewable energy credits ('RECs'), lowering our total GHG emissions. Both projects are now up and running.

Bernard Creek Solar Farm in Southern Texas (Wharton County)

- 230 MW facility
- Over a half million solar modules on over 1,600 acres
- Estimated annual output of approximately 500,000 MWhs of renewable electricity as contracted by WestRock for receiving RECs

Chillingham Solar Farm in Central Texas (Bell County)

- 350 MW facility
- Over 800,000 solar modules on over 2,600 acres
- Estimated annual output of approximately 200,000 MWhs of renewable electricity as contracted by WestRock for receiving RECs

VPPAs are often seen as win-win arrangements because they benefit those involved in multiple ways. Smurfit Westrock can receive a significant amount of RECs, the developer is able to finance a new clean energy project, and the project provides jobs, boosting the local economy. The new project also adds power to the power grid, lowering the chances of blackouts and keeping down energy costs for consumers in some areas.

# Our Net Zero Transition Plan

The actions associated with Our Net Zero Transition Plan may differ across geographies and specific sites but the plan itself is intended to provide an overview of how we are approaching decarbonization in our business.

## Our Ambition, Strategy and Accountability

Smurfit Westrock is working towards a net zero future, addressing demand-side reductions and supply-side efficiencies, and working with our suppliers to reduce Scope 3 emissions.

The strength of our approach is demonstrated through the actions of both legacy companies

- History of GHG reduction
- Continued strategy of decarbonization
- SBTi approval of interim targets for both legacy companies
- Collaboration across the value chain
- Trialing emerging technology

Smurfit Westrock is working towards a net zero future, and while we believe we can play an important role, we also believe that delivering on a net zero future will rely on new and evolving technologies as well as supportive regulation.

## Our Approach - Timelines

**Short-term:** Acting now, using latest technology in key processes (where feasible), progressive improvement, and renewable electricity procurement.

**Medium-term:** Strategic investment projects to replace high emitting assets, progressive improvement, availing of best available technology in key processes (where feasible), and collaboration across the value chain.

**Long-term:** Through collaborative projects and partnerships, executing controlled trials of new and emerging technology to understand the feasibility and cost of implementation beyond 2030.

These plans are expected to be financed by a combination of operational and capital expenditures and supported by the Company's Green Finance Framework.

## Across Emissions

### Scope 1 and 2 Emissions

**Investing in fossil $CO_2$ reductions such as:**

- Shifting to low or zero carbon fuels including $CO_2$ neutral energy sources:
  - Use of biofuels; and/or
  - Electrification supported by the greening of electricity supply.
- Research and development into new and emerging technologies with controlled trials:
  - Hydrogen, geo-thermal and heat pump technology.

**Greening of electricity supply such as:**

- Procuring low or no carbon electricity where feasible;
- Renewable power purchase agreements; and
- Onsite renewable energy generation.

**Reducing energy use such as:**

- Adopting best available technology in key process areas (where feasible) to improve quality and productivity, in addition to reducing energy usage.

**Investing in efficient energy-generation such as:**

- Highly efficient Combined Heat and Power (CHP) systems*; and
- Improving the efficiency of our existing equipment.

### Scope 3 Emissions

**Supplier engagement such as:**

- Sustainable and Responsible Sourcing programs;
- Engaging suppliers on decarbonization strategies; and
- Use of third-party Scope 3 and supply chain data collection.

**Customer engagement such as:**

- Better Planet Packaging program delivering lower $CO_2$ solutions for customers through:
  - materials design;
  - packing automation;
  - packaging design; and
  - supply chain optimization.

**Exploring transport strategies such as:**

- Modal shift: $CO_2$ reduction by shifting transport from road to lower emission transport models;
- Operational efficiency: $CO_2$ reduction by optimizing transport operations, sources, and destinations; and
- Fuel efficiency: $CO_2$ reduction by leveraging new technology, alternative fuels, and engine efficiency.

**Reduce solid waste to landfill:**

- Managing and reducing waste to decrease landfill GHG emissions.

Supported by our end-to-end approach to circularity.

## Residual Emissions

While the Company is focused on its direct impact on emissions reductions across its value chain, with significant scope well into the future, we acknowledge that we may reach a point in the future where we have residual emissions which we cannot eliminate. In the event that this occurs, the Company would consider neutralizing these emissions through appropriate and credible solutions.

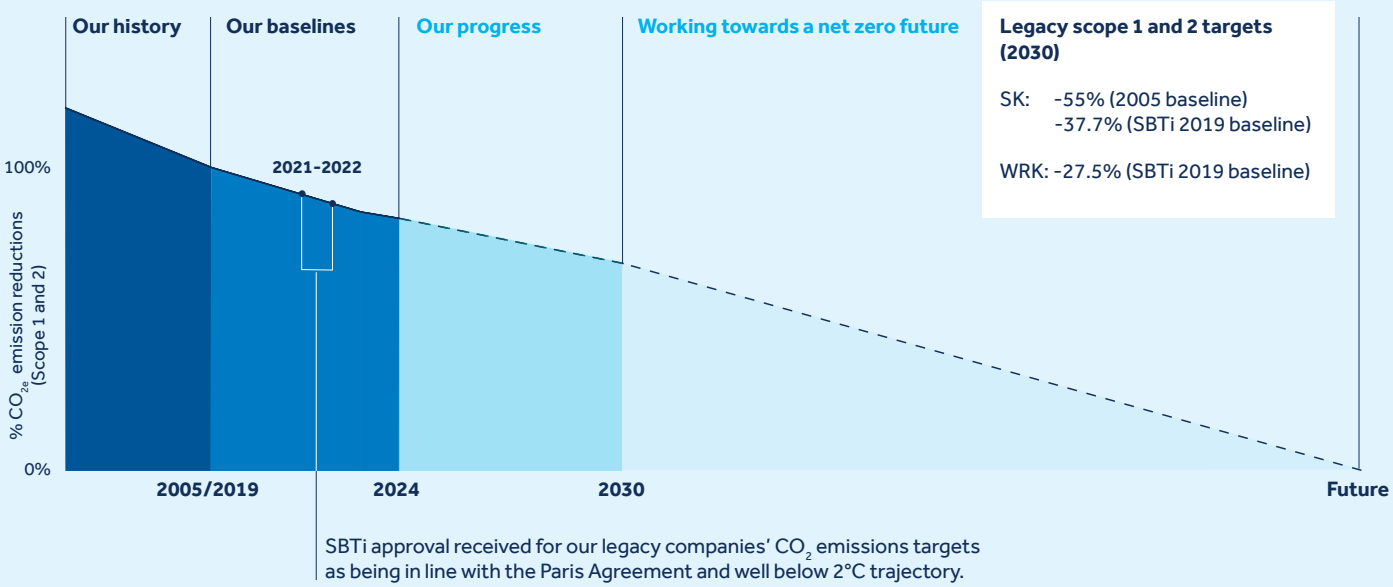
*Note: The hydrogen trials in our Saillat paper mill could facilitate the move from current energy efficiency outcomes to low or no carbon outcomes via the retrofitting of existing CHP assets.

# Our Net Zero Transition Plan continued

| Scope | Time horizon* | Actions that help demonstrate our approach |
|---|---|---|
| Scope 1 and 2 | Short-term | • Continuously improving our operations through the implementation of best practices such as: pipe insulation, LED lights, process monitoring, data use, reuse of residual steam, biogas usage from water treatment plants, and energy efficiency enhancements.<br>• Using Digital Twin technology in our Townsend Hook paper mill to help reduce steam consumption by approximately 5%.<br>• Nettingsdorf biomass investment of €134 million completed in 2020 with a run rate of 40,000 tonnes on emissions reduction.<br>• Completed installation in 2021 of an 8.4-meter state-of-the-art kraft linerboard machine in Florence (U.S.), replacing three older, narrow-width paper machines and reducing the thermal energy intensity by 18%.<br>• Invested €11.5 million in our Zülpich paper mill. A major redesign of the multi-fuel boiler, providing a more sustainable fuel source for generating steam and electricity and reducing $CO_2$ emissions by 55,000 tonnes.<br>• A major upgrade of the Tres Barras paper mill in Brazil, completed in 2021, resulted in a 20% increase in production while reducing Scope 1 and 2 emissions per tonne by approximately 12%.<br>• Installation of 12,000 solar panels adjacent to the Sangüesa paper mill in Spain which is estimated will reduce $CO_2$ emissions by over 3,200 tonnes per annum.<br>• In 2021, greenfield mill in Monterrey, Mexico, achieved its full run-rate steam and electricity usage levels in its first year of operation.<br>• Start-up of a new, state-of-the-art water treatment plant at Belgrade paper mill in Serbia in 2023. This $5 million investment, the first of its kind in the country, is designed to purify water to the highest applicable standards, reduces electricity usage, and cuts $CO_2$ emissions.<br>• Optimizing starch use in our Hoya mill, in Germany, which requires less steam and energy to dry.<br>• Water treatment plant investments in Colombia and Brazil which will help improve our COD (water) and capitalise on biogas from plants ($CO_2$).<br>• Entered into two VPPAs that have an estimated annual output of approximately 700,000 MWhs of renewable electricity as contracted by WestRock for receiving RECs<br>• Strategic projects to deliver on our decarbonization strategy including the investment of almost $100 million in a sustainable biomass boiler in our paper mill in Cali, Colombia which is expected to reduce our global Scope 1 and Scope 2 $CO_2e$ emissions by over 100,000 tonnes and is planned to be operational by the end of 2025. |
| | Medium-term | • Controlled trialing of new/emerging technology and feasibility of large-scale implementation:<br>– Collaborative heat pump project in Morava paper mill (Czech Republic); and<br>– Collaborative research with a consortium in areas of dryer web and black liquor concentration energy efficiency and decarbonization. |
| | Longer-term | • Proactive identification and controlled trialing of new/emerging technology today:<br>– In 2023 the HYFLEXPOWER consortium and Smurfit Kappa successfully completed the second stage of the HYFLEXPOWER hydrogen project, the first in the world for a paper mill and a truly collaborative project including suppliers, academia and government support.<br>– Collaborating with the Alliance for Pulp & Paper Technology Innovation (APPTI) consortium to advance manufacturing technologies that promote energy-efficient and sustainable practices. This group has a subcommittee working towards net zero carbon emissions by 2050 through public-private partnerships and innovative research.<br>– Research on carbon capture and sequestration or utilization; and<br>– Geo-thermal technology being explored in our paper mills in the Netherlands and Germany. |
| Scope 3 | Short-term | • Customers: We have many examples where a collaborative approach has delivered a lower carbon, circular solution. For example, by working together with a customer in Switzerland, we reduced the $CO_2$ emissions in transport by switching from road to rail delivery. This reduced the transport emissions by approximately 600 tonnes of $CO_2$ for one customer site alone.<br>• Customers: Developing products such as Top-Clip, Click-to-Lock, Cluster-Clip, EnduraGrip which can help our customers deliver on their sustainability goals.<br>• Engagement with Suppliers: As part of Smurfit Kappa's Sustainable and Responsible Sourcing program we consider our suppliers' energy reduction programs and participation in certification standards as well as collecting climate data direct from suppliers through third party, supply-chain systems.<br>• Investments in research capabilities to improve the recyclability of our products. |
| | Medium-term | • Progressing our Scope 3 inventory assessment, supported by GHG training.<br>• Considering SBTi commitments, including forest land and agriculture ('FLAG') targets.<br>• Trialed electric delivery vehicles in Germany and the Netherlands.<br>• Continued focus on innovation and collaboration with our suppliers and customers to offer right-weighted, fit-for-purpose packaging solutions that minimize inefficiency and waste. |

* Time-horizons are defined by when we believe they could be scaled, so we are actively exploring and trialling them now, but their scalability could be now (short-term), 3-10 years (medium-term) or 10-30 years (long-term).


# Our Net Zero Transition Plan continued




**Legacy scope 1 and 2 targets (2030)**

SK: -55% (2005 baseline)
-37.7% (SBTi 2019 baseline)

WRK: -27.5% (SBTi 2019 baseline)

SBTi approval received for our legacy companies' $CO_2$ emissions targets as being in line with the Paris Agreement and well below 2°C trajectory.

## Pre-2019*

- Setting and achieving legacy targets.
- Continued improvement in operations.
- Investments to increase biofuels consumption.

## 2020*

- Completion of €134 million new recovery boiler in Nettingsdorf (Austria).

## 2021*

- Opening of the new Monterrey mill in Mexico.

## 2022*

- Successfully trialed hydrogen project at the Saillat paper mill in France, a world first for a paper mill.
- Announced an investment of almost $100 million in a sustainable biomass boiler in our Cali mill (Colombia).
- Completed the Zülpich energy project, an €11.5 million investment reducing $CO_2$ emissions annually by 55,000 tonnes.
- Invested $23.5 million to upgrade the Nuevo Laredo plant in Mexico, reducing site $CO_2$ emissions by up to 40% and doubling production capacity.

## 2023*

- Investment in our Hoya paper mill and board manufacturing plant (Germany) delivering approximately 5,500 tonnes of $CO_2$ emissions reduction per annum.
- Entered into two solar VPPAs in Texas (U.S.).
- Inaugurated the Company's first box plant in Africa (Morocco), which included 1,500 solar panels.

## 2024*

- First VPPA project reaches commercialization (U.S.).
- Inauguration of €6 million solar project in Sangüesa, Spain.

## 2025

- Second VPPA project reaches full commercialization (U.S.).
- Expected startup of new biomass boiler at the paper mill in Cali, Colombia, which is estimated to reduce our global Scope 1 and Scope 2 $CO_2$ emissions by over 100,000 tonnes.

## 2025-2030

- Projects identified to implement until 2030 in order to help achieve our new $CO_2e$ emissions reduction target (target expected to be published by end of 2025).

## Beyond 2030

- Scaling new and emerging technologies, as they become available. Our Net Zero Transition Plan will also depend on government action and the development of new technologies.
- Consideration of residual carbon neutralizing solutions to deliver on a net zero future.

*The examples here reflect, a combination of the activities of both legacy companies.

# Forest

Natural, fibrous materials are our main raw material, of which approximately 56% is recycled fiber and approximately 44% from responsibly managed virgin sources. All of our fiber is responsibly sourced, through CoC-certified supply chains, including our recycled fiber. We produce our packaging solutions to meet our customers' performance requirements, which means using recycled fiber, virgin fiber, or a combination of both in our packaging design.

Our virgin fiber raw material is renewable, recyclable, recycled, and biodegradable. We need virgin fiber for its performance properties in certain packaging applications, such as those that require moisture resistance or readiness for food contact.

Wood fibers can be recycled at least 8 times and up to 25 times (according to a 2021 study by the Technische Universität Graz, Austria). Once it completes its recyclable lifespan it needs to be replaced by fresh, virgin wood fiber to produce quality packaging. By practicing and promoting sustainable forestry, we support the future supply of sustainable virgin fiber and deliver a host of environmental and social benefits. The virgin fiber we source is at a minimum from non-controversial sources.

To further report on our commitment to protecting ecosystems and biodiversity, we have committed to adopting the TNFD recommendations as an early adopter and plan to report for the financial year 2026.

## Our commitment to sustainable fiber

Products delivered to our customers must meet the commitments we make in our Smurfit Westrock and legacy policy statements: Forestry Policy, Code of Conduct ('the Code'), and Social Citizenship and Respect. The Code can be found at: smurfitwestrock.com and the other policies are available at our legacy websites smurfitkappa.com and westrock.com.

We source virgin fiber from well-managed forests and we do not accept virgin fiber sourced from a controversial origin. All materials are delivered through third-party-verified, CoC-certified supply chains. We accept ATFS, FSC, PEFC, and SFI-certified wood and recycled fiber according to the CoC requirements implemented at our mills and plants. We have created one of the industry's largest independently audited systems for tracking and confirming that the wood used in our operations is harvested in ways that comply with laws, respect human rights, and are consistent with the protection and conservation of natural resources.

CASE STUDY

# Protecting biodiversity in partnership with The Nature Conservancy

The Nature Conservancy ('TNC') partnership supports our commitment to sustainable forest management, water quality, and environmental stewardship.

Since 2017, WestRock supported several TNC initiatives across the U.S. in Georgia, South Carolina and Virginia, including restoring longleaf pine forests, preserving native wildlife habitat, conserving freshwater, and implementing sustainable timber practices supporting local economies. In 2024, the investments helped manage and protect approximately 70,000 acres of land, engaged 1,700 landowners, and planted more than 195,000 trees across the Southeastern United States.

In the state of Virginia, TNC continued to build a base of protected lands to promote groundcover restoration, rare species recovery, and forest management. In addition to planting longleaf pine seedlings, the TNC also developed a conservation partnership and student intern program with Virginia State University.

In Georgia, TNC conducted a wide range of conservation, restoration and land management activities on the Chattahoochee Fall Line near Fort Benning military base. TNC protected over 1,000 acres of land and planted longleaf pine seedlings. It also provided land stewardship information and resources to over a thousand regional stakeholders through field days, presentations, field tours, and exhibits.

In South Carolina, TNC made significant advances with forest conservation strategies centered on the Sewee Longleaf Conservation Cooperative, a 1.7 million-acre native longleaf pine ecosystem anchored by the Francis Marion National Forest. In addition to conservation efforts, the TNC also engaged with and trained dozens of private forestland owners.

Following the combination, Smurfit Westrock continues collaborating with TNC.

# Chain of Custody: a trail for sustainable fiber

CoC-certified packaging can only be delivered when systems and raw material are certified. Together they provide chain of custody certified packaging. Our paper-based manufacturing sites are CoC-certified, supporting responsibly sourced wood fiber and providing certified products when requested by customers. In some locations this is the default but in other regions it will depend on certified raw material availability, cost and customer demand. Smurfit Westrock has the systems in place to deliver for our customer needs.

Our definition of sustainable forest management is focused on optimizing the forest's benefits: supplying wood fiber for our business, providing jobs and income for communities, and maintaining healthy forest ecosystems that support biodiversity, protect water bodies, and supply non-wood forest products.

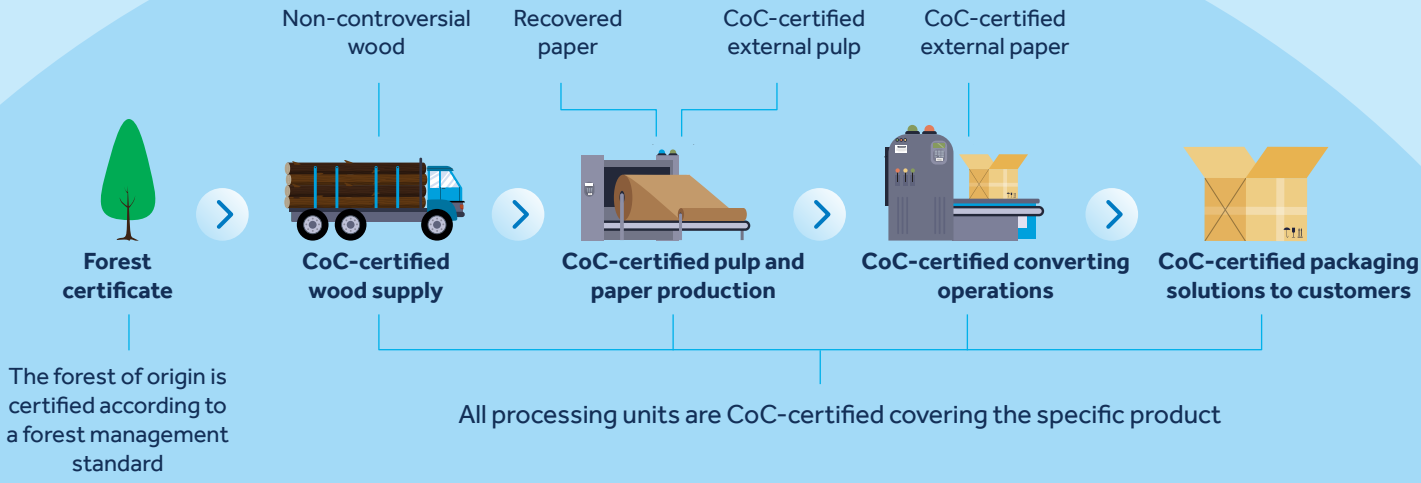
For certified material, the forest owners commit to manage their forests and plantations according to sustainable forest-management criteria. They obtain a certification after an independent, third-party audit and follow a regular audit scheme where their practices are evaluated against defined forest-management criteria.

Forest certification related CoC management systems start from the harvest of the trees. Each operation and entity processing the material has its own CoC system, which covers storage and use of the material, production and shipping of products, documentation of material and product flows, and communication to customers through invoices and delivery notes.

Each product carrying a forest-certification-scheme, on-product label carries a licence number that can be further traced back to the producer, and the raw material's country of origin. A portion of fiber used in CoC-certified products may come from non-certified forest but must comply with minimum standards of sustainable forest management. Extensive assessments, mitigation actions, and/or avoidance measures are utilized to confirm the fiber originates from non-controversial sources. Smurfit Westrock requires this portion to comply with the Due Dilligence System ('DDS') requirements and/or FSC Controlled Wood standard.

If the chain of CoC-certified supply chain breaks, e.g. one of the operations in the supply chain is not CoC-certified, or the materials used don't meet CoC-requirements, a product cannot be certified.

## The Chain of Custody model for certified packaging



Our paper mill system is

# 100%

CoC-certified according to FSC, PEFC and/or SFI

We regard these certification schemes as the best available means to conserve forests and their biodiversity. Sustainable forest management certification schemes require us to regularly monitor the protection of ecosystems and biodiversity. This is monitored annually at our sites through forest certification audits and auditing by independent third parties.

Our objective is to increase certified wood supplies, however, this is limited by low availability of certified wood at competitive prices in some of the regions where we can economically source our wood supplies. Forests are essential to biodiversity, act as natural filters for fresh water, sequester carbon, and improve air quality. We support private landowners who practice responsible land management practices, integrating the growing and harvesting of trees with the protection and conservation of:

- soil, air and water quality;
- biological diversity;
- wildlife and aquatic habitats;
- forests with high conservation value; and
- recreational and aesthetic properties.

In the U.S., we work with forest landowners to encourage the adoption of recognized forest management standards through our landowner outreach program. The program provides education on land management practices that promote long-term forest productivity and protect biodiversity. Smurfit Westrock maintains two Independently Managed Group ('IMG') certificates through the ATFS.

The administrative effort to achieve certified CoC status often makes it economically unfeasible for small forest holders to certify their forest holdings, further limiting the availability of certified wood supplies. However, efforts to increase FSC certified wood volumes have shown positive impacts in Spain, where we support forest owners, all smallholders, in achieving the FSC certification of their forests. In Sweden, certified volumes could also be increased through finding better agreements with forest owners in the region.

### Chain of Custody

Smurfit Westrock does not source fiber from high deforestation risk areas, including High Conservation Value ('HCV') areas. Through supply chain transparency, we confirm our sustainability commitments and fiber origins. We use robust monitoring and third-party auditing of our wood and fiber supply chain. The best practice to deliver our commitments is through CoC certification. Our paper mill system is CoC certified under FSC and PEFC and/or SFI.

Smurfit Westrock has implemented a DDS that further confirms that all of the related Company sustainability and sustainable fiber sourcing policies are implemented at the local and central purchasing levels. The wood fiber risk assessment procedure, together with the wood fiber risk assessment platform, facilitates greater teamwork and standardizes local purchasing processes. The implementation of the DDS has been third-party verified, and the verification process consists of both company and onsite gap assessments. The audit reports are being used to further strengthen our related policies/procedures and the implementation of our sustainable fiber sourcing policy requirements.

## Forest and plantation management

All of Smurfit Westrock's own forest plantations are based in Brazil, Colombia, France, and Spain, of which Brazil and Colombia represent over 99%. All our plantations are certified, either to FSC and/or PEFC standards.

### Brazil

Smurfit Westrock owns forests and plantations, of approximately 54,400 hectares in the states of Santa Catarina and Paraná in Brazil. The plantations we own in Brazil are certified to the FSC (since 2017) and PEFC* (since 2005). Our plantations supply our paper mill in Tres Barras and are located more than 1,000 miles from the Amazon Forest region of Northern Brazil. Smurfit Westrock does not source virgin fiber from the Amazon Forest region or from any other area of native forests in the country.

Our 54,400 ha of forests and plantations in Brazil include:

- 29,300 ha of commercial plantations;
- 23,000 ha of protected natural forest (legal reserve, nature reserve, and permanent preservation); and
- 2,100 ha for infrastructure.

In our commercial plantations, 57% is pine, 37% eucalyptus, 4% is being replanted, and 2% is dedicated to research.

* Our Brazilian plantations have been certified to the Brazilian CERFLOR standard since 2005 which was endorsed by PEFC in 2011.

### Colombia

Almost all the virgin wood fiber our Colombian mills need is supplied by 67,500 ha of certified forests and plantations, which we own and manage. We use nature conservation programs with the best sustainable development principles, promoting responsible use of natural resources along with economic development and social inclusiveness in collaboration with NGOs and other third-party organizations. We also conform to comprehensive legal, technical, and environmental regulations, which are subject to annual review.

Our 67,500 ha of forests and plantations in Colombia include:

- 41,700 ha of commercial plantations, of which a small part is partnerships with private landowners;
- 22,700 ha of protected natural forest; and
- 3,100 ha for infrastructure.

In our commercial plantations, 57% of the land is pine, 38% eucalyptus, 3% is being replanted, and 2% is dedicated to research. Our Colombian forest management programs have been certified by the FSC since 2003.

### France, Spain and U.S.

In Europe, we offer forest management services through our wood supply companies in Spain and France, where we own and manage approximately 500 hectares of forest. In both, we follow local best practices for forest management, as certified by PEFC. Our wood-handling operations are CoC certified to FSC and PEFC standards.

Our fiber sourcing operations in the U.S. offer a landowner assistance program as part of their wood sourcing services to the forest owners. This service is certified through the ATFS standard, endorsed by the PEFC.

## Biodiversity and ecosystem conservation

Fiber for paper is efficiently produced on our commercial plantations. We use carefully selected areas for plantations, avoiding valuable ecosystems and protected forest areas. 43% of our Brazilian and a third of our Colombian forest lands are dedicated to protecting forest sustainability, helping maintain the area's rich biodiversity and preserving watersheds, habitats, and ecosystems. The rest of our land areas are commercial plantations. To maintain forest biodiversity and sustainability, our goals are to:

- conserve them by protecting and promoting species diversity, sustaining ecosystems, and protecting water sources and habitats;
- identify appropriate species and practices that increase plantation yields whilst protecting the environment; and
- develop research programs to preserve and enhance soil productivity.

Our research over more than 60 years into the propagation and cultivation of eucalyptus and loblolly pine has increased the productivity of our Brazilian forestlands, enabling us to produce more fiber per hectare. We monitor the fauna and flora of all our Brazilian forests closely and have identified the presence of a wide variety of animal and plant species, including 41 at-risk species.

In Colombia we use our own research center, as well as working with third-party institutions. Since 2009, we have worked with four local universities – Cauca, Nacional, Valle, and Quindío – studying the flora and fauna populations in and around our forests.

The objective of Smurfit Westrock Colombia Natural Forest Studies is to understand the biodiversity in different ecosystems within our natural forests and its evolution over time. In Phase 1 of the studies, we established a group of 13 units, totaling 7,990 ha and representing three hillsides of the Andean Mountains, four water basins, and four Holdridge Life Zones. The classification of the units also considers the degree of intervention by humans.

At the end of 2024, we finalized the inventory of the 13th and last forest unit. Each inventory is carried out onsite, identifying species (flora and fauna) which will then be classified as 'Threatened' or 'Non-threatened' following the IUCN, CITES, and Colombia Ministry of Environment and Sustainable Development classifications. If any of the three classifications indicate that the species are threatened, they will be so designated. See adjacent table for the 2024 results for threatened species.

We have commenced with the planning of Phase 2 of the

**Biodiversity**
Threatened species recorded on Smurfit Westrock Colombia Forestry Division's properties, 2024

| Group | Total | Critical Risk | Endangered | Vulnerable |
|---|---|---|---|---|
| Birds | 18 | 0 | 6 | 12 |
| Flora | 18 | 1 | 10 | 7 |
| Mammals | 10 | 1 | 3 | 6 |
| Amphibian | 1 | 0 | 0 | 1 |
| Total | 47 | 2 | 19 | 26 |

Natural Forest Studies and aim to begin the second phase during 2025. Phase 2 maintains the established methodology, and we will repeat the inventories on each of 13 forest units. In time, we will have multiple inventories per forest unit, which will enable analysis and comparison of changes in these units.

The Natural Forest Studies has already established that the Andean Bear, believed to have completely disappeared from the region, has found a living habitat in our natural forests, for more details see our case studies in this section.

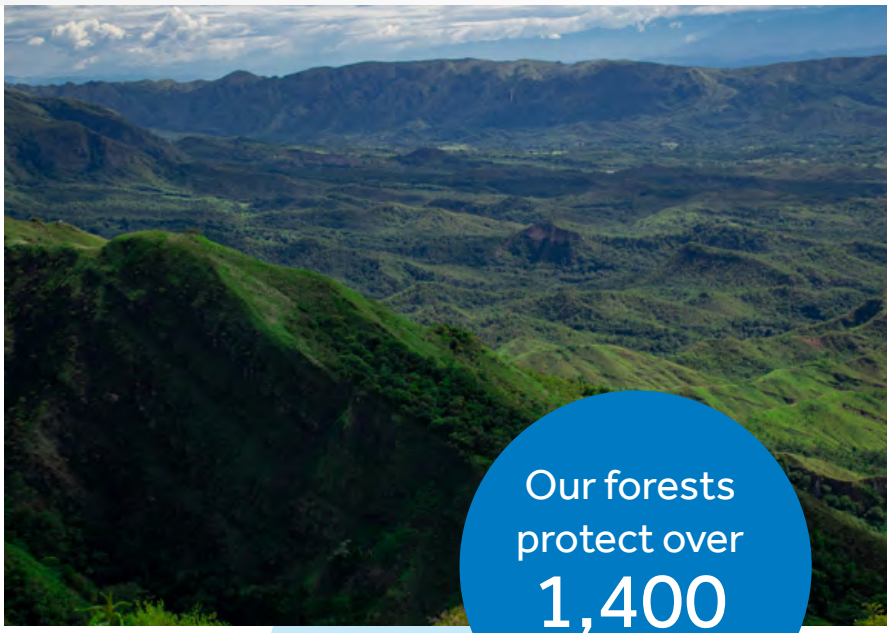
Our Colombian forest operations have a Forest Health Program that focuses on scientific research and the application of integrated pest management, with emphasis on biological control of commercial forest plantations. The Company has committed to integrated pest management and to keep plantations and forests healthy. The program uses natural enemies of the pests, such as friendly insects that protect forests by eating harmful insects. In addition, we study tree regeneration for the commercial forest plantations. A specific study focuses on the Podocarpus family of pines, the only national pine species in Colombia. For eucalyptus trees, research studies have supported the nursery in developing trees specifically for commercial plantations, ones that will thrive in more challenging climatic conditions.

In addition to our ongoing research, we collaborate with our communities to establish synergies and support the health of Colombian forests. One example of this is our collaboration with the local coffee farmers; coproduction of coffee in our forest plantations establishes natural support for commercial habitats and pest control. In Tres Barras, Brazil, the Forest Honey Program supports the local community, generates income, and preserves biodiversity by allowing local farmers to use the Company's native forests for beekeeping; those forests represent 43% of our land holdings in the country.

# Working with local Indigenous communities

## Communities in Colombia

Smurfit Westrock is a proud member of every community in which it operates, abiding by local laws and striving for best practice in everything we do. Carton de Colombia, now part of Smurfit Westrock, began operating in Colombia in 1944




CASE STUDY

## Recognition for supporting biodiversity in South America

Colombia's National Center for Water and Biodiversity ('CNAB') recognizes Smurfit Westrock as its largest data publisher.

To connect researchers and increase the sharing of data and information on biodiversity, the Colombian Biodiversity Information System ('SiB Colombia') and the CNAB formed a strategic alliance in 2020. This alliance created the National Network of Open Data on Biodiversity, where researchers could record their environmental data allowing others to access it freely to support research, education, and decision-making when it comes to environmental management.

In its first awards ceremony, the national network recognized Smurfit Westrock in the category of Largest Data Publisher from the Industrial Sector. According to Dairo Escobar, Coordinator of Biodiversity Data Mobilization at CNAB, the awards ceremony highlights the contribution that the business sector makes to the generation of biodiversity data. Between 2020 and 2024, 52 companies in Colombia published more than 4 million points of data in the SiB Colombia.

"Within our forest heritage, we protect, study and conserve 22,700 hectares of natural forests that are home to over 1,400 species of flora and fauna, 47 of them classified in some category of threat of extinction. Taking advantage of our role, together with local universities, we have carried out the biological characterization of 13 units within these forests, generating a baseline of knowledge to monitor the future maintenance and improvement of these natural spaces," commented Nicolás Pombo, Forestry Director at Smurfit Westrock.

At a global level, Smurfit Kappa was one of the first companies that adopted the recommendations of the TNFD, a global initiative that provides a framework for organizations to manage and disclose risks associated with nature. This adoption has been endorsed by Smurfit Westrock and it consolidates the Company's commitment to biodiversity, respect for the environment, and the wellbeing of the communities in which it operates.

CASE STUDY

# Protecting biodiversity in Colombia through partnership

## Our alliance with the WWF in Colombia helps protect natural forests home to over 1,400 species.

In collaboration with WWF Colombia, one of the world's foremost conservation organizations, Smurfit Westrock protects and restores Colombian forests and ecosystems. This alliance underlines our shared commitment to sustainability and the preservation of biodiversity.

More than half of Colombia is covered by forests, and Smurfit Westrock owns 67,500 hectares of forest and plantations in the country. About a third of that area is protected natural forestland devoted to conservation, which is home to over 1,400 species of flora and fauna (47 of these are threatened species).

Since 2009, Smurfit Kappa Colombia has partnered on several influential projects. Our collaboration began with the Legal Timber Pact, a critical initiative launched alongside the Ministry of Environment and local authorities to combat illegal wood production in Colombia. In 2020, Smurfit Kappa Colombia strengthened the alliance to more thoroughly tackle deforestation and forest degradation.

This joint effort aims to restore and expand natural forests while promoting sustainable practices across the forestry industry. Together, we are increasing surveillance to address illegal logging and working to support Colombian national parks and conservation programs.

Our partnership also focuses on empowering communities, promoting biodiversity, and developing innovative solutions to protect people, wildlife, and ecosystems.

"At WWF, we have been working for harmony between people and nature in Colombia for three decades," says Sandra Valenzuela, COO of WWF Colombia. "These joint efforts will strengthen restoration and promote sustainable practices in forests, while keeping communities as a central focus."

This partnership is an example of our commitment to achieving the highest standards in environmental and sustainability practices. Together with WWF Colombia, we remain focused on long-term solutions to protect our forests and the planet.

where it now has a number of operations including forestry, containerboard mills, corrugated and sack plants and recovered fiber operations. The Company began lawfully acquiring farms over 50 years ago from legitimate property titleholders and now owns and manages 67,500 hectares of forestry, including natural forests in Colombia. Smurfit Westrock in Colombia currently employs approximately 6,800 people and also supports a number of indirect jobs. The Colombian operations actively support, on a continuous basis, the development of sustainable local communities through education, income generation, job creation, environmental management and by being a good corporate citizen. Our forest management activities in Colombia are independently audited each year and must demonstrate compliance with the 10 FSC principles which set out the essential elements of environmentally appropriate, socially beneficial and economically viable forest management. FSC principle 3 relates to the respect of indigenous peoples' rights among them the free, prior and informed consent. The last FSC forest management certification audit was conducted by an independent third-party auditor in July 2024 with no major observations arising from any of the 10 principles. These forests have now been certified for over 20 years, starting in 2003.

## Engaging in the communities

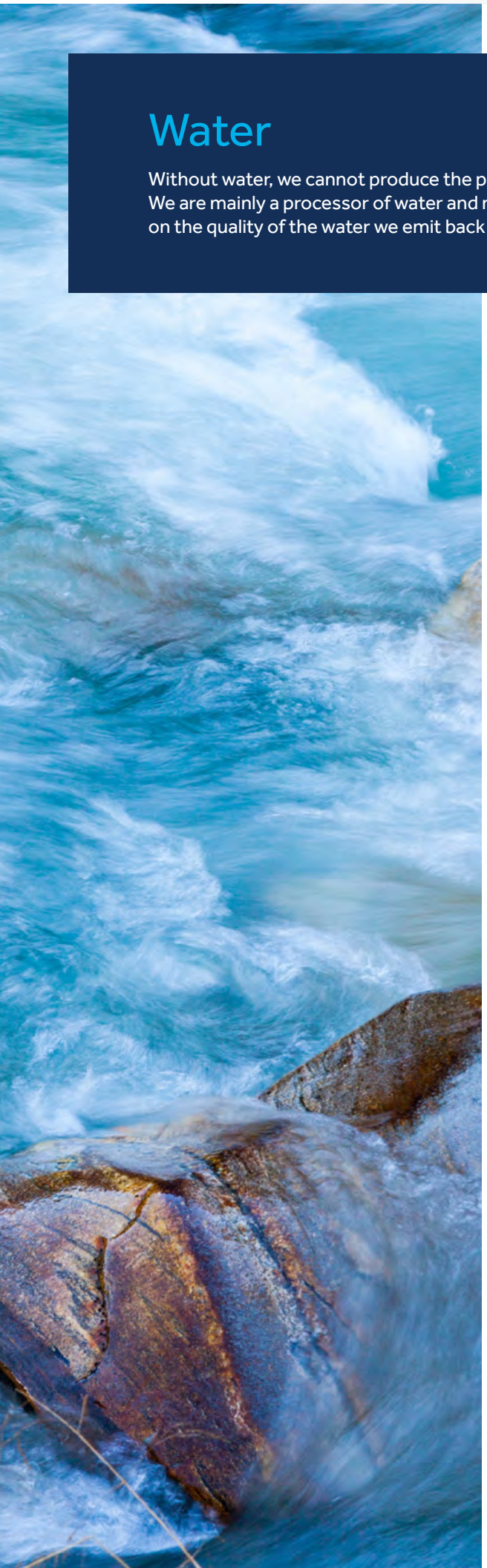
The Company has been involved in many voluntary community-oriented programs which benefit the many communities that we coexist with in Colombia. In the Smurfit Kappa 2022 Sustainable Development Report we provided many examples of the collaboration, training, education, support and work we completed with the local indigenous communities, much of which remains ongoing. These included initiatives with: the Yanaconas indigenous community in the Cauca municipality; the local Nasa ethnic Cerro Tijeres Reservation in the Suarez municipality; the Kurak Chak in the Cauca region; and the Nuestra Señora Candelaria de la Montaña indigenous reserve, which is part of the Emberá Chami ethnic community, located in the Riosucio municipality (see page 54 of the 2022 Sustainable Development Report). In addition, in Colombia and throughout the other countries in which we operate, we are involved in many initiatives in our communities, giving to others through volunteering our time, effort and expertise, as well as through financial donations. Some examples of these are outlined in our Open Communities brochure which is available on our website www.smurfitwestrock.com/sustainability. FSC forest management certification requires active collaboration with the communities where we have forestry operations. In total, Smurfit Westrock, and Smurfit Kappa before it, have invested approximately $10 million locally in Colombia in the last three years on sustainable agricultural and forestry production, maintenance of public roads, infrastructure development, economic reactivation, and other planned local development initiatives which benefit local communities. In the last five years, Smurfit Westrock, and Smurfit Kappa before it, have also invested over $55 million in the upkeep of our forests.

## Peaceful, respectful, and collaborative coexistence

There are many communities, including social and peasant communities (campesinos), Afro-Colombian, various indigenous communities, that live and work in the areas in which we operate in Colombia as noted above. We are very proud of the over 50 years of continuous work seeking coexistence and ongoing collaboration with communities in the region. As a result, the events which started in July 2021 with the unlawful invasions of the Smurfit Kappa land in the area and significant damage to the forestry, including natural protected forests, were entirely unexpected. We continue to report any such unlawful acts to the local authorities.

The Company's operations must also be viewed in the context of the wider political and social situation in the Cauca and Valle del Cauca regions. The 2024 Armed Conflict Location & Event Data conflict Index ranks Colombia tenth in its rankings of the most dangerous and violent countries in the world, with an index level of "Extreme". Against this backdrop we are investing in our communities to promote education and wellbeing and creating employment opportunities both in urban and rural communities. The lives, health, safety, integrity and respect of all our employees and neighboring communities are fundamental values of Smurfit Westrock, and therefore we continue to seek an end to such unlawful invasions, and a return to peaceful coexistence with all local communities.

Smurfit Kappa had openly sought engagement with the Misak community since the first invasions in July 2021. In late 2022, members of Misak, Nasa and peasants' groups agreed to take part in an independently mediated dialogue process. The process remains ongoing with an agreed agenda. In addition, there were also various other meetings and conversations with relevant stakeholders at national and international level from communities, Smurfit Kappa and government officials which were also attended by members of these indigenous and campesino groups. We believe that these meetings and the ongoing engagement have been positive and constructive, and we hope that collaborative initiatives can be established which are agreeable to all stakeholders. We continue to strive for respectful and collaborative coexistence to be restored in the region within the framework of the law and respect for the constitution and the UN declaration of the Rights of Indigenous People and other diverse communities. We maintain our commitment to contribute positively to the local sustainable development of the neighboring communities, through agendas based on the shared vision of territory, the strengthening of participatory processes, planning and territorial management development with local actors, including diverse communities, through our forestry activity and social initiatives.



# Water

Without water, we cannot produce the paper we need for our packaging solutions. We are mainly a processor of water and not a significant net consumer. We focus on the quality of the water we emit back into the water system.

Smurfit Westrock is mainly a processor of water, as illustrated in the diagram on page 47. Almost all of the water we processed was used by our 62 paper and board mills, and the remainder was used predominantly by the 459 converting plants.

The majority of the water we use is returned to nature and the rest either evaporates or is bound to products or residuals. We also reuse water several times, after which it is processed in water treatment facilities and returned to the environment.

Water treatment forms an important part of our approach to the bioeconomy. We use bacteria to clean the water, and the biogas made during that process fuels some of our onsite CHP plants. Water-cleaning sludges can be used for other water treatment processes or in agriculture. We also support forests in maintaining nature's water cycles through promoting certified sustainable forest management. For example, preserving water bodies linked to commercial forests is an indicator of sustainable forest management, while allocating protected forest land, as we do in Colombia and Brazil, further supports natural water ecosystems (see Forest section on pages 38-45).

## Committed to Sustainable Water Stewardship

We assess water-related risks at our paper mills through a program of water risk assessments using geo-location through the Aqueduct tool. In addition, Smurfit Kappa historically combined the results obtained from an Aqueduct assessment with the Weather Research and Forecasting Model ('WRF') and used this result in a site specific water risk assessment developed to align with the recommendations of the TCFD. The water risk assessments focused on four main types of risks:

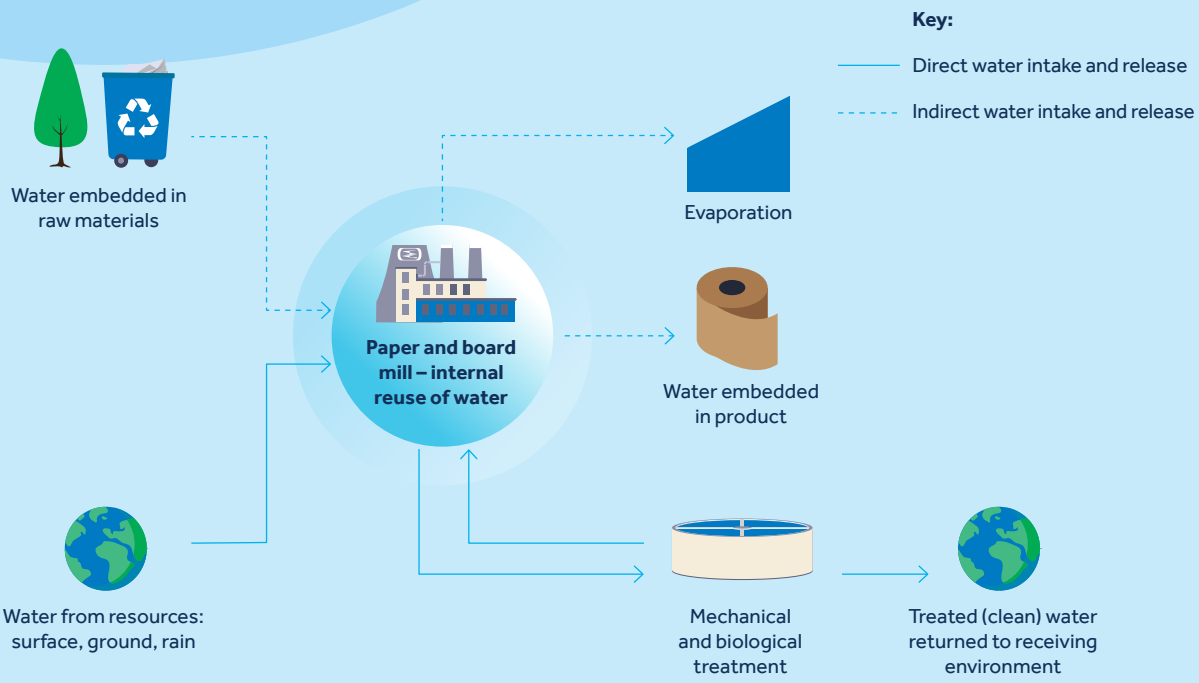
- physical risk, including local water scarcity and mill equipment;
- operational risk;
- regulatory risk; and
- reputational risk.

The geo-location based risk mapping will be followed by individual risk assessments at our sites. This site specific method was extended to certain North American, legacy WestRock sites in January 2025 and will be further extended to cover all sites.

To align with TCFD disclosure recommendations, basin risk is also assessed for future climate scenarios. The scenarios' dataset is based on a combination of the most relevant climate scenarios (representative concentration pathways – 'RCP') and socio-economic scenarios (shared socioeconomic pathways – 'SSP').

Our paper mills have water use reduction plans in place for facilities located in such watersheds where scarcity could be a challenge.

# Water in the paper mill




CASE STUDY

## Many of our facilities across the world are innovating to reduce the use of fresh water and use it more efficiently.

These reductions are the results of consistent efforts by dedicated water management teams, the use of water saving technologies, daily tracking of water usage, frequent inspections, and project specific activities.

Our mill in West Point, Virginia (U.S.) is situated in an area where layers of impermeable soil prevent rainwater from seeping into the ground to replenish the aquifers in the area. Because of this, the quantity of water the mill can use is limited.

As a result of the mill's culture of good water stewardship, over the past several years it has reduced the amount of water it uses by more than 4 million gallons a day.

Monterrey (Mexico) is a drought-prone area known for occasional water shortages. Our recycled mill in Monterrey overcame these unique local challenges by partnering with the local municipality to use its treated wastewater, known as gray water, instead of fresh water. This arrangement helps both Monterrey and the mill.

Our mill in Morai (India) is unable to discharge locally into the river, and it is located far from the municipal wastewater treatment facility. Therefore, the mill restricts and minimizes water use at all process inputs. Flow meters in various locations track usage and then highlight areas where there are water reduction opportunities. This helps prevent the mill from generating more wastewater than it can treat and reuse, and it minimizes the amount of fresh water it brings in from the river.

Our products need to meet hygiene standards, and our papermaking technologies require good quality water. Together with our neighbors and stakeholders, we have a common interest in good water stewardship, and we will use these findings to build water stewardship strategies for individual sites. To manage possible changes in our mill environments, we look for the assessments to be repeated every five years.

Our paper mills engage with their stakeholders in multiple ways. 14 of our paper mills: Battle Creek, Dallas, Forney, Hopewell, Solvay and St. Paul (U.S.); Los Reyes, two mills in Monterrey, San Luis Potosi and San Pablo (Mexico); Nervión (Spain); Nettingsdorf (Austria); and SSK (UK), discharge their water into the local municipal water treatment system. Morava mill (Czech Republic) shares its water treatment plant with the local municipality.

Our established collaborations with municipalities benefit participants as the water discharge from paper mills helps to balance the nutrition needs of municipal water treatment, and thus reduces the need for additional water treatment nutrients by the municipality. Depending on location, we participate in water-body management and cross-industry collaboration. For example, our Roermond

CASE STUDY

## Water conservation in action across Latin America

### Making water a priority with major mill enhancements and strategic partnerships.

Across many of our operations in Latin America, we are undertaking innovative projects to conserve water, protect ecosystems, and support local communities. These initiatives showcase our dedication to water conservation across the region.

**Argentina**

A $2.8 million investment modernized the Coronel Suárez Mill's water treatment plant with advanced anaerobic treatment technology. This significantly improves the quality of water discharged into surrounding water bodies.

**Brazil**

At our Uberaba mill in Brazil we have implemented anaerobic treatment technology with a $4.1 million investment. This advancement enhances the quality of effluents and contributes to the protection of the surrounding waterways. Our Tres Barras mill is set to unveil a subaquatic diffuser for treated wastewater, a cutting-edge $2 million project. This precision technology will improve dispersion and significantly enhance water quality downstream.

**Colombia**

The Cali mill's enhancements include a new evaporation line and pulp plant upgrades, reducing water use year-on-year by 24% per tonne of paper in 2024. Implementing a spill system and oxidizer also cut COD (chemical oxygen demand) levels year-on-year by almost 29% per tonne of paper in 2024.

**Partnerships**

Smurfit Westrock contributes to strengthening local organizations that manage this water resource in rural areas, supporting the administration of community aqueducts in different municipalities. The Company promotes the economic balance of these systems, supporting access to available water resources, continuity of service, and protection of water sources, in compliance with national regulations.

Sustainability is also reaching new heights through PROMAB, our partnership with São Paulo University's forest hydrology team. This program monitors water use and conservation across managed forestry areas, leveraging data to refine techniques that balance timber production with water resource preservation. PROMAB supports our forestry operations in staying aligned with conservation goals.

CASE STUDY

## State of the art water treatment plant in Serbia

### The Belgrade paper mill was recognized by the Serbian prime minister for leading by example.

Smurfit Kappa acquired the Belgrade paper mill in 2019. An important aspect of becoming part of Smurfit Kappa was for the mill to meet the Company's sustainability standards.

In addition, the country of Serbia introduced water pollution legislation mandating all industrial water users to invest in water treatment by 2025. Smurfit Kappa answered with a €5 million investment in a state-of-the-art water treatment plant for the Belgrade mill.

The paper mill in Belgrade opened its new water treatment plant in September of 2023, a couple of years ahead of Serbia's mandate. Serbia Prime Minister Ana Brnabić spoke at the mill's opening ceremony. "Today is an important day for environmental protection in Belgrade and throughout Serbia. This is a day that represents a turning point for the sustainable development of our country. Smurfit Kappa did this two years ahead of schedule by building the first industrial biological plant. This is an example of how all businesses in Serbia should join the policy of sustainable development."

Reduced water consumption by 90%

The plant purifies water to the highest standards before returning it to the environment. The water runs through a settler, then it's run through anaerobic treatment, and finally, it receives another aerobic treatment before being released back into the river.

As well as returning clean water to the environment, engineers also optimized the mill's water usage, further reducing water consumption by approximately 90%.

paper mill (Netherlands) receives the phosphorus it needs for water treatment from a neighboring baby food plant where it is a byproduct of their processes. Since 2018, Smurfit Kappa has been a signatory of the CEO Water Mandate, and, Smurfit Westrock is now a signatory.

### Focus on Better Water Use and Water Quality

For the vast majority of our operations, availability of fresh water is not a concern for the forseeable future. Nevertheless, we believe that a responsible approach to water is crucial.

Smurfit Westrock strives to continuously improve its water management, with a current focus on improved water use and water quality. Improved water efficiency is good business as well as sustainable business. We monitor our operations closely, looking for opportunities to improve our efficiency. Therefore, we implement best practices in our mills' water treatment, where feasible.

Consumed approximately **14** million tons of recovered fiber in 2024

# Waste

Efficiency of material usage is vital for the bioeconomy and circular economy. We continually find alternative ways to reuse, recycle and recover to avoid the linear economy where products end their life cycle at landfill.

We focus on the end-of-life management of our products. We are a significant actor in the circular economy as one of the largest consumers of recovered fiber in North America, Europe as well as many of our countries in Latin America.

Our packaging solutions help prevent waste, especially in food products' supply chains, by protecting products from damage or spoilage. At the end of its life, paper-based packaging becomes a valuable raw material. Paper-based packaging has some of the highest recycling rates of packaging materials, supported by advanced recycling systems.

Smurfit Westrock also participates in its product end-of-life management. Our 63 recycling depots collect recovered paper and paper-based packaging, returning it back to our paper mills where the fiber will be recycled. It is in our interest that the products are recycled back into the papermaking process. In addition, our packaging reduces its own impact by being 'right-weighted', using the minimum material necessary. We strive to offer sustainable packaging solutions to all our customers. Read more about the circular aspects of our products on page 98.

The end of life of our products is part of our material sourcing strategy, we collect or buy used boxes to make new ones. Our key raw material is fiber, and approximately 56% of our products are made from recycled fiber and 44% from virgin fiber.

A large part of the non-hazardous waste we generate is due to the fact that we are a significant player in the paper recycling business. The recovered paper bales sent to us by recycling companies often contain unwanted plastics, metals, glass, textiles, sand, and other non-usable materials; a part of this has to be sent to landfill. To reduce landfill, we look for circular solutions for our own waste as much as possible.

Our converting operations send paper clippings back to our mills, delivering high-quality recycled fiber. Recovered paper from our corrugating and converting operations comes with minimal auxiliary materials, decreasing waste from the recycled fiber pulping process and further evidencing our circular approach to production.

Our production waste streams and collaboration with other industries to use our side streams are described in the diagram on page 52.

CASE STUDY

# Turning residues into a community resource in Brazil

## The Tres Barras mill composts its residues, which support local farmers.

Since composting residues is a common practice in Brazil, our mill in Tres Barras composts its pulp and paper mill sludge ('PPMS') and then donates the mixture to local farmers as a nutrient-rich soil amendment.

PPMS is an organic matter that can be used to improve the soil's ability to retain moisture and nutrients, resist erosion, and naturally repel animals and pests. The mixture of waste is composted in open yards at the mill for five to six months. Hydraulic excavators periodically turn the compost piles to aerate them, and workers monitor the moisture, temperature, and microbes in the compost until it is ready. Accredited laboratories certify the quality of the final product, an organic soil amendment that can recover and regenerate farmland, in line with the requirements set by the Ministry of Agriculture.

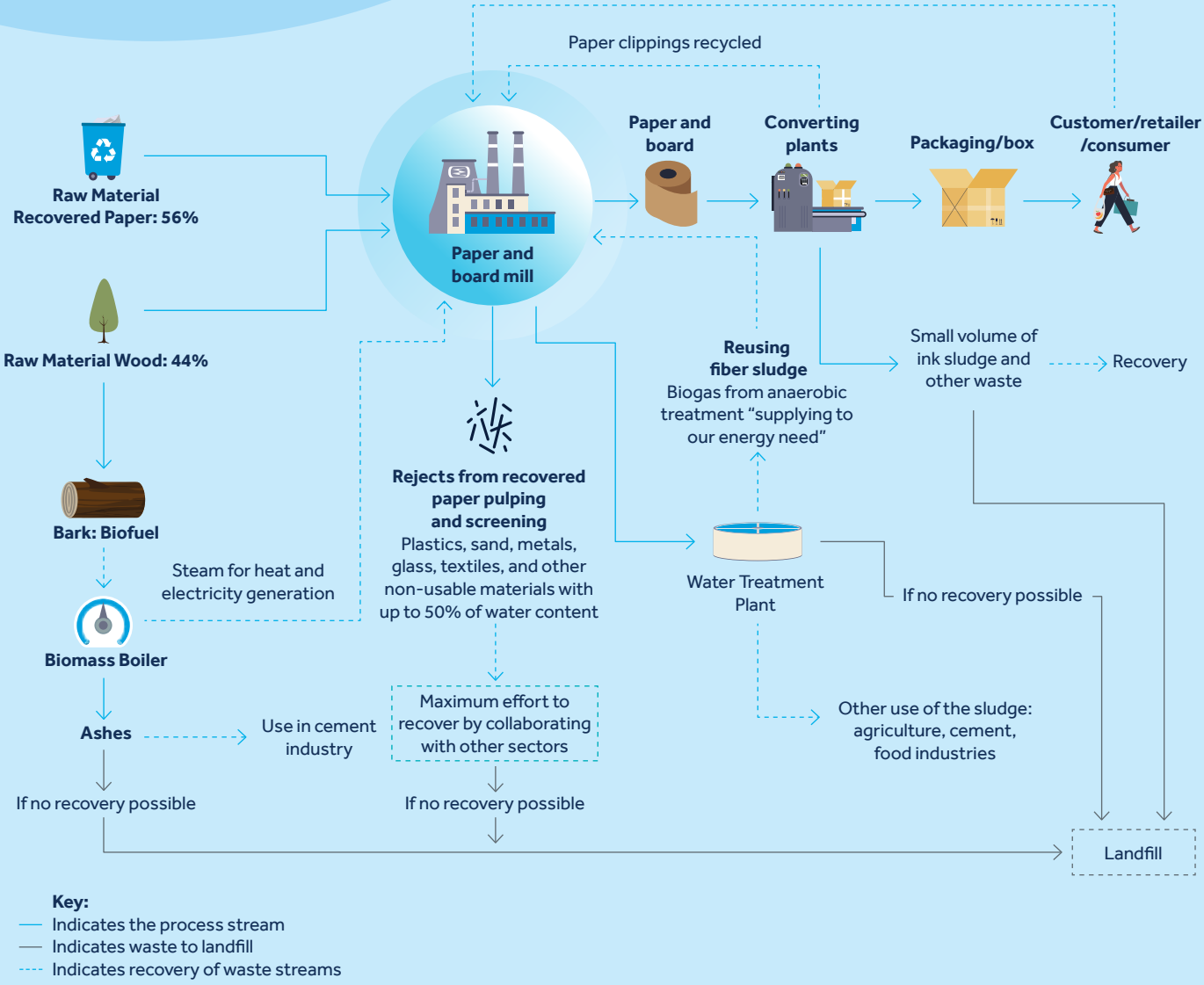
The Tres Barras mill works with a government agency to give away the soil amendment to local farmers, donating more than 50,000 tons of organic compost to over 220 farms so far. Not only does this compound help increase the quality and quantity of what farmers produce, but it also allows them to grow crops that can then be labeled 'organic' and pesticide-free. The farmers can charge more for organic crops, while keeping their soil and the environment around them healthier.

"This collaboration was great for us. In addition to improving the quality of our soil, it increased our income by reducing the cost of fertilizers and pesticide," said Pedro Oliveira, a farmer in the compost program since 2017.

Supporting farmers is important for Brazilians as 70% of the food they eat comes from family farmers and not big agribusinesses that export most of their crops. Nonprofits in Brazil work to aid these farmers through various programs, and those organizations greatly benefit from corporate partners that choose to support the community.

The Tres Barras mill's cafeteria now purchases more than 50% of its vegetables directly from the family farmers in the Farm Program. The cafeteria at the mill serves over 700 employees.

# Production waste streams




## Work Against Litter

Littering and the need to reduce packaging waste continue to be a focus across the regions in which we operate.

Our industry's products are some of the world's most recycled packaging materials, this, along with our main raw material's biodegradability, position us well to work with stakeholders toward reducing packaging waste and litter.

When the paper-based material does not enter in the recycling loop it is typically combusted and a relatively small portion, in Europe approximately 9%, ends in landfill.

## Work Towards Optimized Use of Raw Materials

We continually collaborate with other industries to use our side streams, this includes agriculture, cement, and pharmaceutical industries. Both legacy companies joined the 4evergreen initiative that aims to support product design for recyclability and calls for the development of improved collection systems and recycling infrastructures. The 4evergreen initiative brings together the whole paper-based packaging value chain from suppliers to packaging customers, such as fast-moving consumer goods businesses, to find solutions to current and future challenges.

CASE STUDY

## Reducing landfill waste with cutting-edge technology

### Rejected waste can now be recycled at the Verzuolo paper mill in Italy.

A groundbreaking approach is transforming the way waste is managed at the Verzuolo paper mill in Piedmont, Italy. In processing approximately a thousand metric tonnes of recovered paper daily, about 4-5% of the material, such as plastic windows from envelopes or metal bindings from folders, ends up rejected because it is unusable. With limited disposal options in Italy and a significant cost per tonne for landfill, this rejected material posed both an environmental and financial challenge.

Verzuolo's innovative solution, led by General Manager Raffaele Marinucci, was inspired by advanced flotation tank technology capable of separating out low-density plastics which could then be recycled. Marinucci spearheaded a €4.5 million investment to bring this system to the mill.

The state-of-the-art setup now shreds and flushes rejected materials into a water tank where they are separated by density. Plastics, ferrous metals, and other reusable materials are extracted, sold through brokers, and given new life.

To date, the project has achieved a recovery rate of 25% of reusable materials with the potential to recover 19,000 metric tonnes annually. This will lead to a 75% reduction in landfill waste from the mill, significantly lowering its environmental footprint and operating costs.

This is more than just a win for Verzuolo, it's a great example of sustainable manufacturing and a testament to what's possible when innovation meets environmental responsibility.

CASE STUDY

## Efficiently managing waste in Fernandina Beach, U.S.

### Our mill on the coast of Florida focuses on recycling and beneficial reuse.

The 230-acre Fernandina Beach paper mill is our largest linerboard producer in the North American Corrugated Mill division, producing approximately 2,650 tons of paper a day. With two recovery boilers and multiple waste partnerships, it reuses or recycles over half of the waste it creates (51% in 2024).

The mill partnered with a nearby composting facility that will accept residuals left from wastewater treatment, as well as bark ash, lime residuals, flume dirt and woodyard scraps.

The compost from this facility is then sold to customers in farming and agriculture, commercial landscaping, the bagged soils market, and commercial construction, as well as the Federal Department of Transportation for approved topsoil applications and individual customers.

The mill's recycling and beneficial reuse of waste deliver a more sustainable outcome and cost savings.

Sending over 100,000 tons of waste to the composting facility in Callahan, Florida saved the mill approximately $5.5 million in disposal costs over the last three years and kept that waste out of landfill.

Additionally, the mill markets coal fly ash for cement manufacturing. This process saved the mill over $200,000 in landfill costs over the last three years, as well as reduced landfill waste.

# Progress in 2024: Smurfit Kappa

Due to the mid-year combination, consolidated data is not available for Smurfit Westrock to report. In this section, the data reported is for the full calendar year, 2024, and for Smurfit Kappa sites only. Please note: all comparisons are on a calendar year basis. Smurfit Kappa reports units based on the metric system and legacy policies and practices remain in place while we develop new Smurfit Westrock policies.

## Climate change

In 2024, Smurfit Kappa reported a 44.3% reduction in its scope 1 and 2 fossil-fuel based $CO_2$ emissions per tonne of paper produced for its paper and board mills against a 2005 baseline. This compares to Smurfit Kappa's 55% reduction target by 2030 for paper and board mills only.

In 2024, Smurfit Kappa's progress against its SBTi scope 1 and 2 target was a reduction of 15.9% against its 2019 baseline. This compares to its 37.7% intensity reduction target by 2030 for all operations and scopes 1 and 2.

The 44.3% reduction of relative $CO_2$ emissions compares to a 43.7% reduction in 2023 against the same baseline (2005). The main contributors to the year-on-year improvement were:

- The Belgrade mill (Serbia) decreased its emissions by 9.4%, due to a higher use of natural gas compared to brown coal; and
- The closure of the Alfa d'Avignon mill (France).

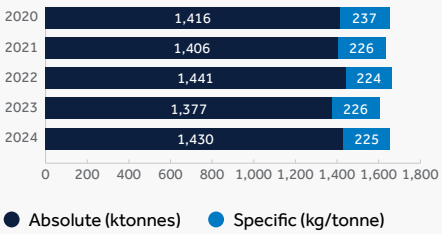
### Renewable Energy

In 2024, Smurfit Kappa paper and board mills used 51% biofuels (47.5% for all operations), compared with 35% in 2005.

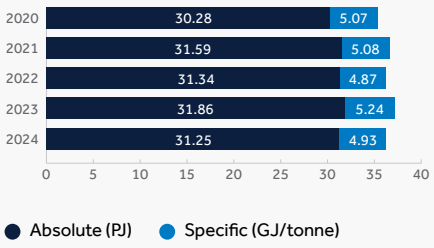
### Working With its Customers

In 2024, Smurfit Kappa's suite of tools, including Innobook, Pack Expert, Paper to Box and SupplySmart were used over 168,000 times. Its InnoTools suite of design software shows customers the estimated carbon footprint for each packaging unit and tracks its development over time. The impact of the legacy company's $CO_2$ emission reductions are reflected in its InnoTools and also in the $CO_2$ footprints of its customers.

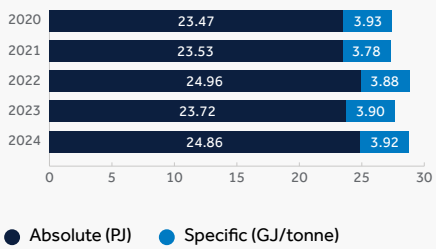
**Direct Fossil (Scope 1) $CO_2$ Emissions:** European Mills



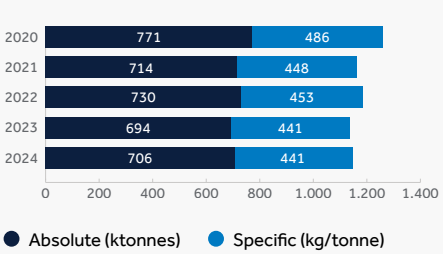

**Biofuels: European Mills**



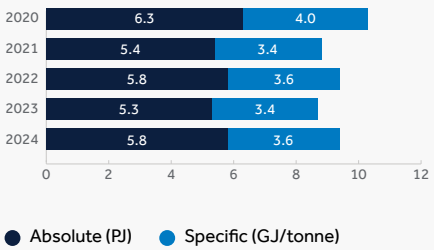

**Fossil Fuels: European Mills**



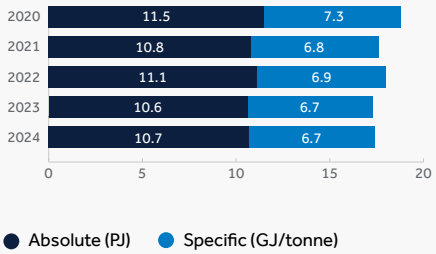

**Direct Fossil (Scope 1) $CO_2$ Emissions:** The Americas Mills




**Biofuels: The Americas Mills**




**Fossil Fuels: The Americas Mills**



## Scope 3 Emissions

Specific to Upstream and Downstream Transportation and Distribution:

In 2024, Smurfit Kappa transport emission reporting covered all its operating countries. The total transported volume was estimated to be 30.2 million tonnes. This equates to 662,319 tonnes of $CO_2$ equivalent using the Global Logistics Emissions Council ('GLEC') framework. Of this, the upstream value chain represents 500,826 tonnes of $CO_2$ equivalent, and the downstream transport represents 161,493 tonnes of $CO_2$ equivalent.

The transportation of corrugated packaging is mainly by road over shorter distances. For all remaining transport Smurfit Kappa operated a modal mix of 3.7% rail, 7.6% water and 88.7% road-based transportation in 2024. The modal mix is calculated based on shipped volume per mode. Including corrugated transport, the total modal mix is at 2.8% rail, 5.8% water and 91.4% road-based transportation.

Scope Statement

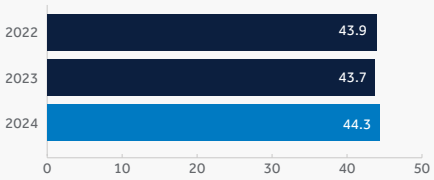
The current scope is structured in the following main flows:

1. Transport of wood and wood chips to paper mills.
2. Transport of recovered paper to paper mills.
3. Transport of market pulp and external wood to paper mills.
4. Transport of paper reels and solid board sheets from internal paper mills to internal or external corrugated plants.
5. Transport of paper reels from external paper mills to corrugated plants.
6. Corrugated boxes from corrugated plants to Smurfit Kappa customers.

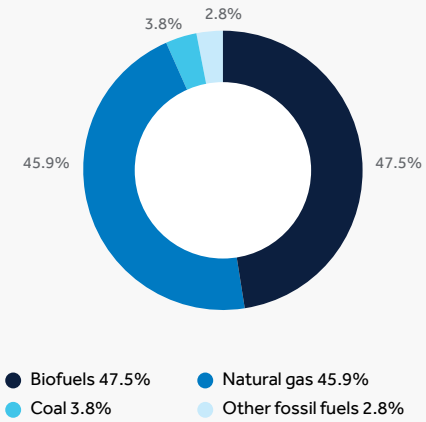
The total transported volume by Smurfit Kappa in 2024, was estimated to be 30 million tonnes and does not include the following categories:

- Goods flows: All material and goods flows beyond the main flows expressed above are out of scope, like transport of raw chemicals, starch, or any other commodity supplies. The magnitude of these remaining raw materials will be estimated going forward.
- Warehousing: Any external warehousing operation is currently out of scope for the legacy company's operations in North and South America. The scope for external European warehouses is calculated at 1.9 million tonnes of paper transport from paper mills to corrugated plants where external warehouse activity applies. This amounts to 29% of Flow 4* and 8% of the reported volume.

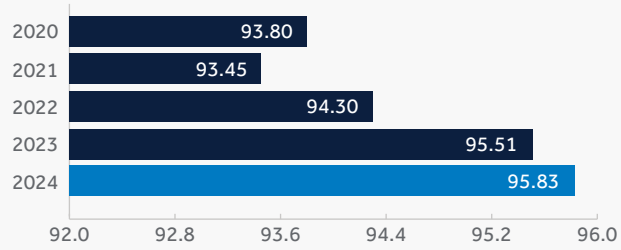
**$CO_2$ Emission Reduction** (%) (2005 baseline)



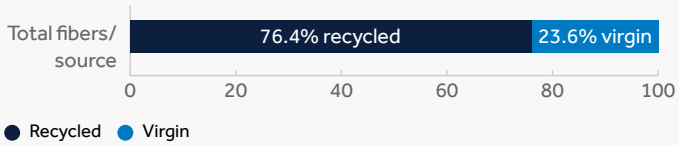

**Direct Fuel Consumption: All operations** (%)



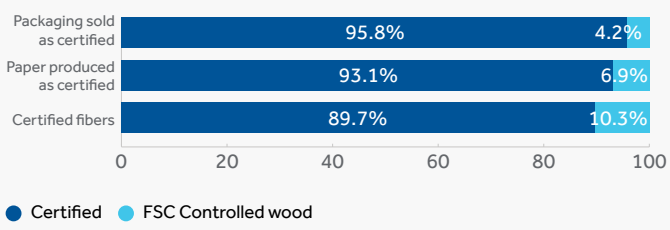

**Share of Packaging Products Sold as CoC Certified 2020-2024** (%)




**Fiber split** (%)




**Smurfit Kappa Certified Raw Materials, 2024** (%)



In 2025, Smurfit Westrock will develop its Scope 3 inventory approach and align both legacy companies so we can disclose the combined Company number in the future. Smurfit Westrock is developing its approach to its suppliers by engaging with them to evaluate their maturity on the topic of climate change. For suppliers that are more advanced in their scope 3 reporting, Smurfit Westrock are also evaluating how to include their primary data into its Scope 3 reporting and have invested in third party systems to support this.

# Forest

In 2024, all of the wood Smurfit Kappa used to produce virgin paper or pulp came, at a minimum, from sustainable non-controversial origins:

- In 2024, 59% of this wood was from sustainably managed forests certified under the FSC, PEFC and/or SFI standards.
- The remaining 41% was from FSC-controlled wood sources, risk-assessed through its FSC and PEFC CoC system and verified by a third party.
- 15% of the wood used at the Smurfit Kappa mills originated from its own forests and plantations in Colombia, which are FSC-certified.

Smurfit Kappa's complete paper mill system has been CoC-certified under FSC and PEFC standards in Europe since 2010, and under FSC, PEFC and/or SFI standards in the Americas since 2015.

In 2024, 93% of its paper was produced as CoC-certified, according to FSC, PEFC or SFI standards. The remaining 7% were from non-controversial fibers in accordance with FSC Controlled Wood standard, and managed through the mills' CoC-certified risk assessment systems.

Smurfit Kappa had a target to deliver over 95% of its packaging solutions as CoC-certified to its customers by 2025 which was achieved in 2023. In 2024, it achieved 95.8%.

# Water

## Water Quality

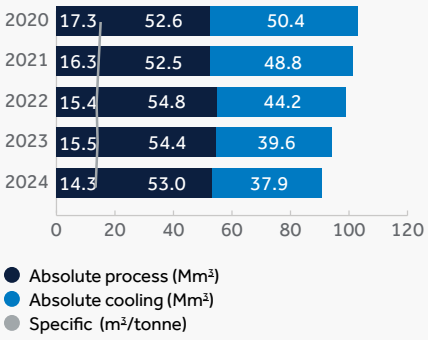
In 2024, there was significant year-on-year progress in Smurfit Kappa's Chemical Oxygen Demand ('COD') target. Against a 2005 baseline, in 2024, the COD content of processed water returned to the environment from the paper and board mills decreased by 56.0% relative to production, this compares to 35.7% in 2023 against the same baseline. The main contributors to the year-on-year improvement were:

- the performance of the water treatment plant in Belgrade (Serbia), which stabilized after running for a full year;
- the benefit of investments in its Cali mill (Colombia) and the optimization of the water reuse at the mill; and
- the closure of the Alfa d'Avignon (France) mill.

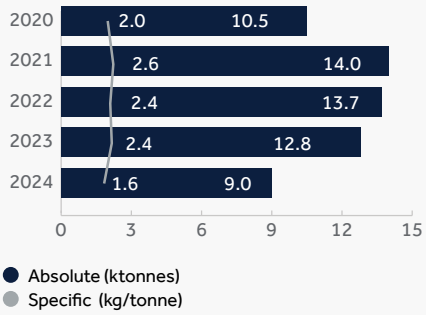
## Water Use

In 2024, the water intake of all Smurfit Kappa operations was 128.9 million $m^3$. The average water intake by its paper and board mills decreased to 15.9 $m^3$ per tonne of paper produced, from 16.9 $m^3$ in 2023 which equates to a 5.8% reduction year-on-year. The key contributors to the target in 2024 were reductions in the Cali mill in Colombia, the Verzuolo mill in Italy and the Piteå mill in Sweden.

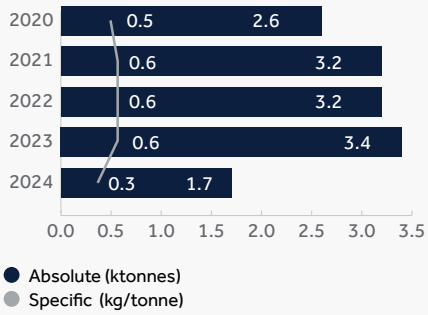
### Water Released: European Mills



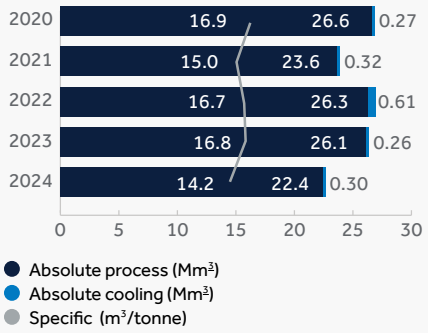

### Process Water Discharges* COD: European Mills



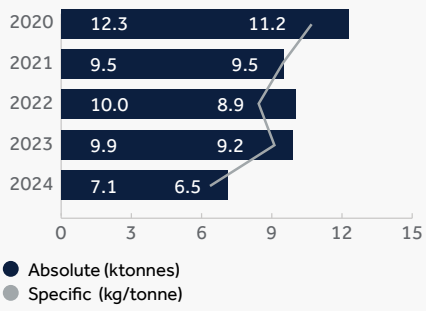

### Process Water Discharges* BOD: European Mills



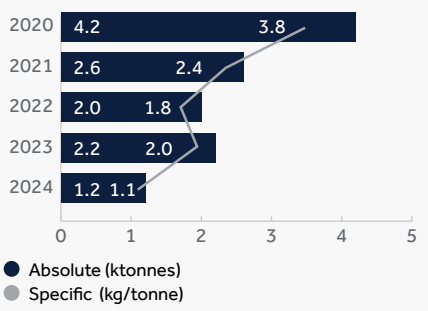

### Water Released: The Americas Mills



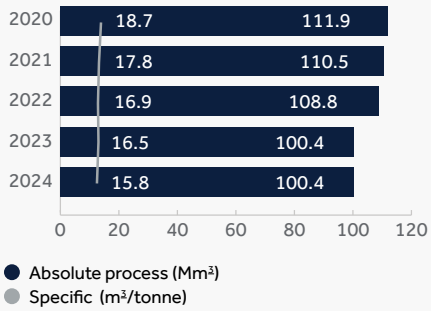

### Process Water Discharges* COD: The Americas Mills



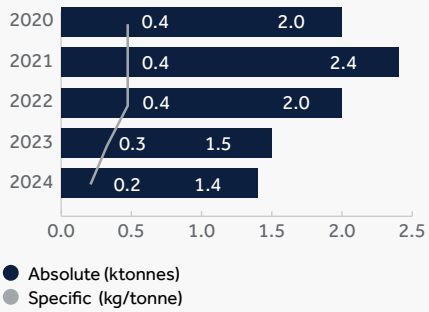

### Process Water Discharges* BOD: The Americas Mills



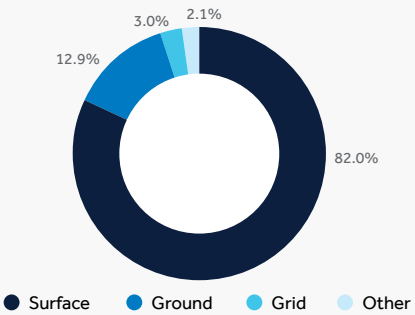

### Water Intake: European Mills



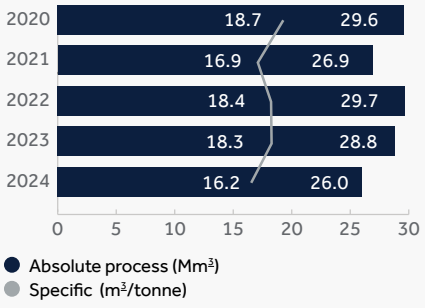

### Process Water Discharges* TSS: European Mills



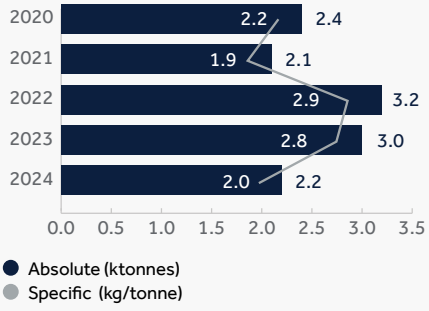

### Water Sources All Operations



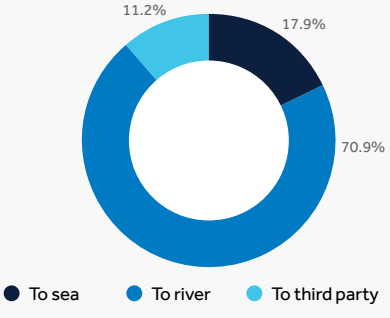

### Water Intake: The Americas Mills




### Process Water Discharges* TSS: The Americas Mills




### Water Discharge All Operations %




*Figures of mills releasing to the environment (mills that release water to the external water treatment plants are not reported).

# Waste

In 2024, there was significant progress in the Smurfit Kappa non-hazardous waste sent to landfill (from its paper and board mills). Most waste was reject material from the recovered paper pulping and screening process.

Other sources included sludge from its water treatment facilities, calcium carbonate residue from lime kilns and ash from biomass boilers.

In 2024, Smurfit Kappa reached a reduction of 48.5% of waste sent to landfill (35.8% in 2023) from its paper mills per tonne of paper produced since 2013.

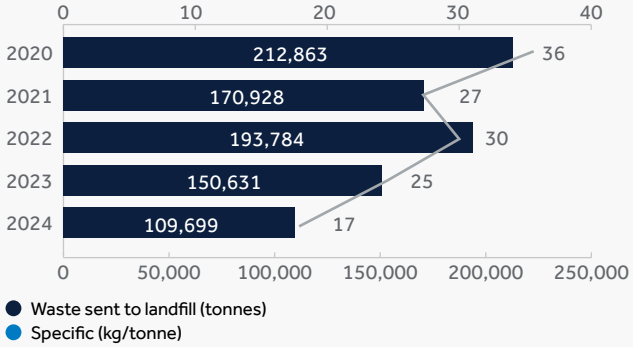
The main contributors to the reduction of waste sent to landfill were:

- the installation of the lime kiln at its Nervión paper mill in Spain; and
- the overall mill improvement project at its Cerro Gordo paper mill in Mexico leading to less sludge generated at the water treatment plant.

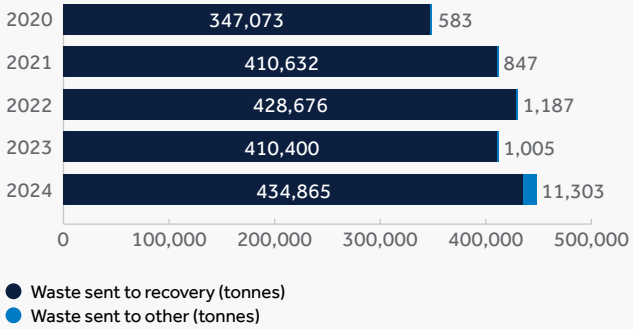
In 2024, approximately 1.5% of the waste was classified as hazardous, mostly coming from maintenance and ink sludge from printing and converting operations. Per operation, the amount was small. The Smurfit Kappa hazardous waste assessment showed the key issue was classifying waste correctly as standards and local definitions vary. It is believed that the calculation is conservatively reported for 2024.

The hazardous waste figure increased from 12,604 tonnes in 2023 to 13,369 tonnes in 2024. The annual amount varies due to maintenance, product additives and hazardous waste tanks taking over a year to fill.

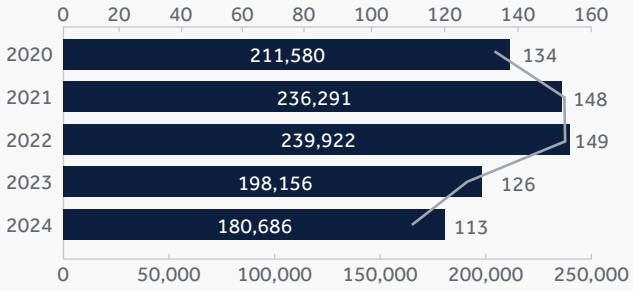
**Non-hazardous Waste: European Mills**



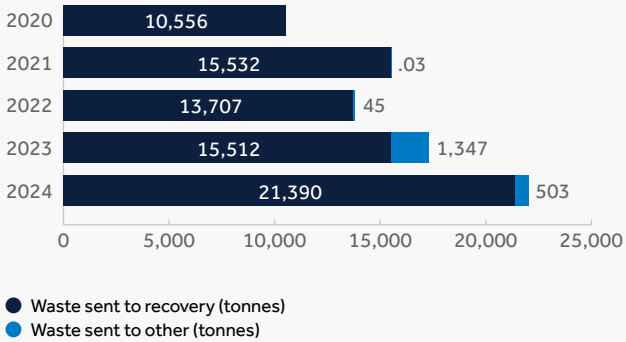

**Non-hazardous Waste: European Mills**




**Non-hazardous Waste: The Americas Mills**




**Non-hazardous Waste: The Americas Mills**



# Progress in 2024: WestRock

Due to the mid-year combination, consolidated data is not available for Smurfit Westrock to report. In this section, the data reported is for the full calendar year, 2024, and for WestRock sites only.

Please note: all comparisons are for Fiscal Year ('FY') 2019 versus Calendar Year ('CY') 2024 unless otherwise stated. Fiscal year data for prior comparative periods is presented based on WestRock's fiscal year period from October 1 - September 30. FY19 data in this section has not been restated to reflect recent acquisitions and divestitures with the exception of GHGs. WestRock reports using a combination of metric and U.S. Common units and legacy policies and practices remain in place while we develop new Smurfit Westrock policies.

## Climate change

In this section, WestRock's reports its progress in 2024 on its greenhouse gas ('GHG') emissions targets. WestRock's scope 1 and 2 targets were to reduce GHG emissions by 27.5% by 2030 from a 2019 baseline. Its Scope 3 target was to reduce GHG emissions by 27.5% from a 2019 baseline by 2030 for five categories: purchased goods and services, capital goods, fuel-and-energy-related activities, upstream and downstream transportation and distribution, and end of life treatment of sold products ('Scope 3 Categories').

In 2024, WestRock achieved a 15.0% absolute reduction in Scopes 1 and 2 (market-based) GHG emissions and a 17.1% reduction in Scope 3 emissions compared to 2019.

Some of the key strategies that contributed to these GHG reductions included:

- energy efficiency projects;
- low-carbon fuels investments;
- electric grid decarbonization;
- renewable power purchase agreements; and
- manufacturing asset rationalizations.

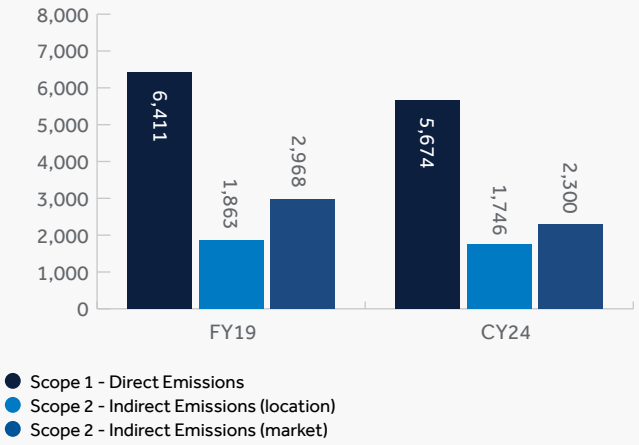
### Scope 3

WestRock calculated its Scope 3 emission inventory to align with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. WestRock reviewed this calculation and determined the categories it deemed relevant to its operations. These categories included purchased goods and services, capital goods, fuel and energy activities, upstream and downstream transportation and distribution, processing of sold products, and end of life treatment of sold products.

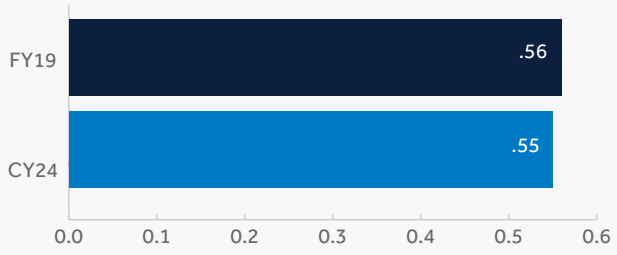
Progress toward Scopes 1 and 2 (market-based) SBT (FY19 baseline)

**15.0%** absolute reduction

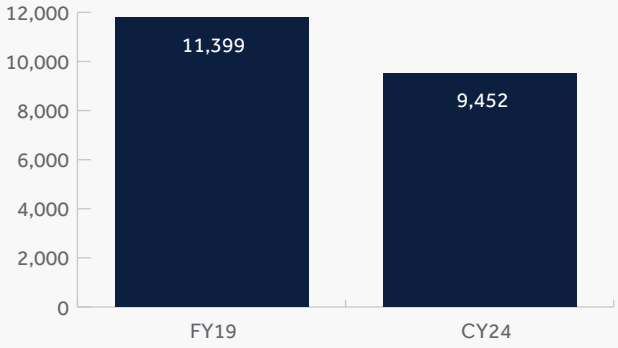
**Total GHG Emissions Scope 1 & Scope 2** - All Manufacturing Locations (ktonnes $CO_2e$)




**Mill Scope 1 & 2 $CO_2e$ Emissions Intensity — All WestRock Mills** (Metric Tonnes $CO_2e$/Tons of Production)




**Scope 3 - Relevent Categories - All Manufacturing Locations** (ktonnes $CO_2e$)



In 2024, WestRock achieved a 17.1% reduction in relevant Scope 3 category emissions against a 2019 baseline and a 14.8% reduction for the same period in the five categories that are part of its science-based target.

## Energy Efficiency

In 2024, biomass was WestRock's most important energy source, which is renewable and sourced from responsibly managed forests. In 2024, WestRock's integrated mills generated approximately 60% of their own energy needs with renewable biomass. Most of these facilities generated the steam and power needed for their manufacturing processes using CHP cogeneration systems, a thermodynamically efficient system that generates electricity and useful thermal energy from one integrated process.

In 2024, the majority of its recycled paperboard mills purchased electricity and powered their manufacturing processes by making their own steam using natural gas-fired boilers. WestRock converting operations purchased electricity and natural gas for their required energy and heat.

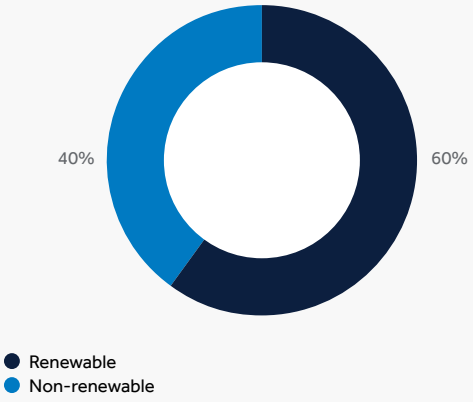
## Establishment of Virtual Power Purchase Agreements

WestRock entered into two VPPAs with ENGIE North America in 2023. The agreements supported ENGIE solar projects in Wharton County and Bell County, Texas for an annual estimated 700,000 MWhs of renewable electricity as contracted by WestRock for receiving RECs.

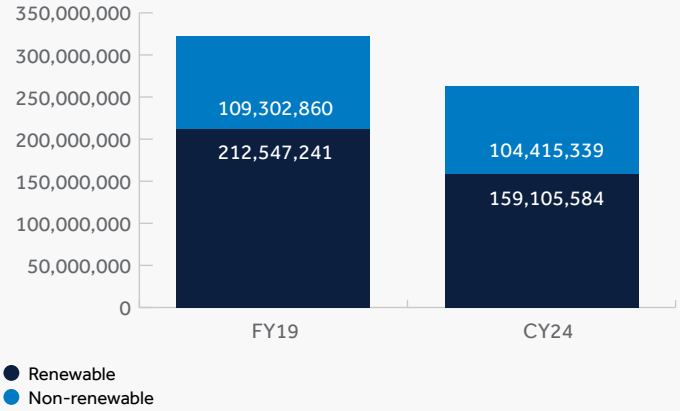
## Other Air Emissions

Compared to its 2023 fiscal year report, emissions of $NO_x$ from its paper mills decreased by 6.5% in 2024 due primarily to mill rationalizations. The rationalization efforts, as well as improvements in fuel quality and enhanced pollution control device efficiency, also helped WestRock decrease its paper mills' absolute $SO_2$ emissions by approximately 23.3% in 2024. Compared to 2019 baseline, $NO_x$ and $SO_2$ emissions decreased by approximately 18.3% and 41.1% in 2024, respectively.

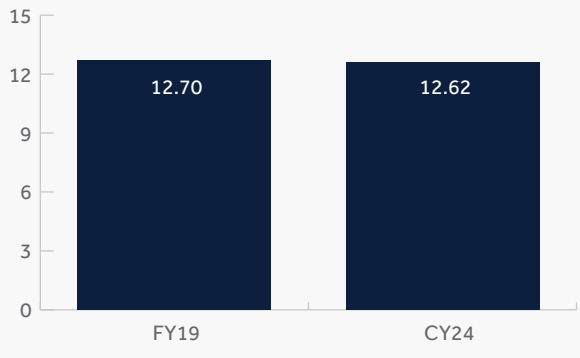
**CY24 Energy Mix - All Manufacturing Locations**



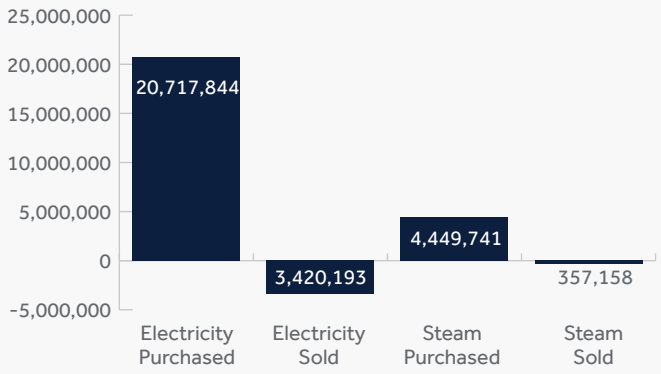

**Total MMBtu - All Manufacturing Locations**




**Purchased Fuel Efficiency — All WestRock Mills**
(MMBtu/Tons of Production)




**CY24 Total Electricity, Steam & Heat Purchases & Sales - All Manufacturing Locations** (MMBtu)



# Forest

In 2024, WestRock mills used either virgin wood fiber, recycled fiber or a combination of the two. WestRock's fiber certification systems have provided evidence that the paper and packaging products it makes contain fiber from well-managed forests.

In 2024:

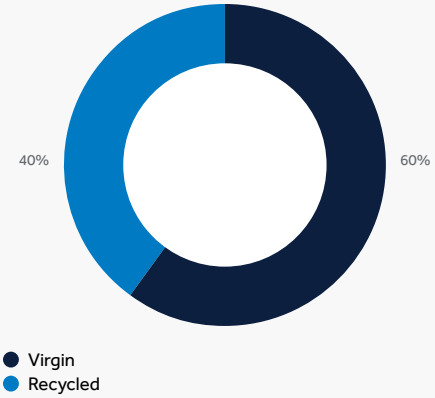
- all of the wood used at WestRock's paper mills came, at a minimum, from sustainable non-controversial sources; and
- 60% of the total mills fibrous raw material was from virgin sources with the balance of 40% coming from recycled fiber.

Within the mill systems the split of fiber mix varied.
In 2024:

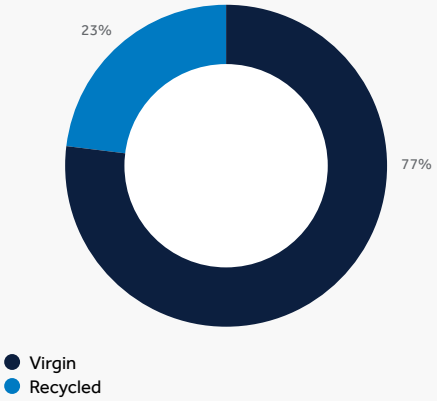
- 77% of the WestRock Consumer Mills fibrous raw material was from virgin sources with the balance of 23% coming from recycled fiber; and
- 55% of the WestRock Corrugated Mills fibrous raw material was from virgin sources with the balance of 45% coming from recycled fiber.

## CY24 Fiber Mix

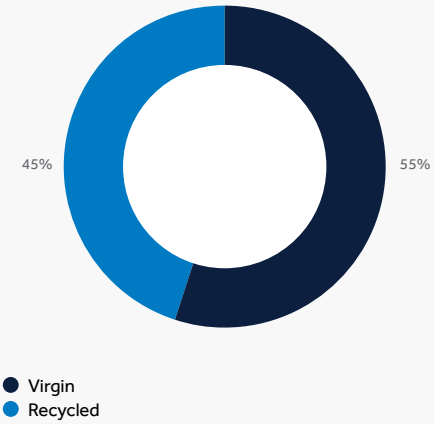
### All WestRock Mills




### Consumer Mills




### Corrugated Mills



# Water

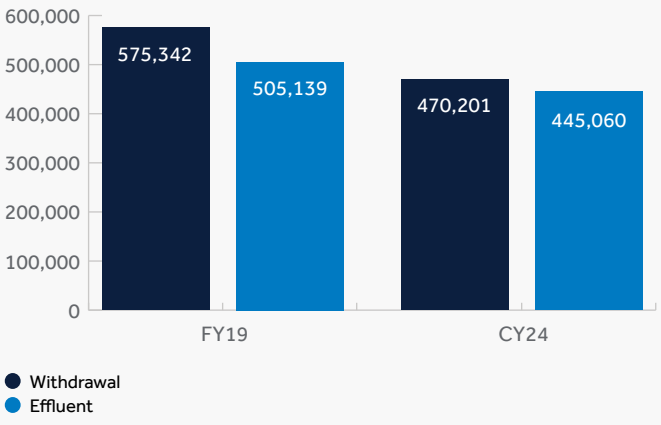
In 2024, to advance its sustainability commitments and meet environmental compliance requirements, WestRock focused on making sure the water it used was suitable to return to the environment.

In 2024, the water withdrawn from the environment was recycled several times within the mills. It was then treated and returned to the environment, lost to evaporation, or imparted to the final products and manufacturing residuals. Certain WestRock mills bought water from third parties.

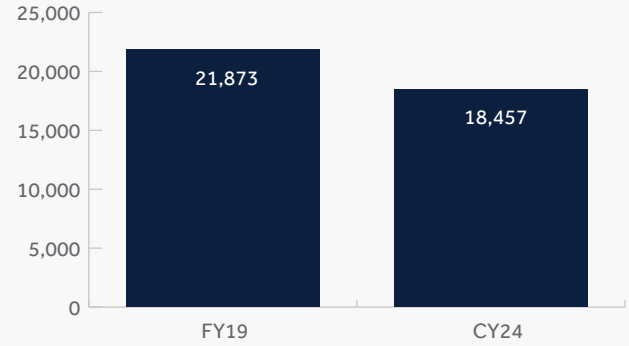
## Water Use

In 2024, WestRock had water-reduction plans in place for facilities located in strategic watersheds. WestRock had a sustainability target to reduce water intake from its paper mills by 15% by 2030, against a 2019 baseline. In 2024, WestRock met its target by reducing total intake by 18.3% against a 2019 baseline. Year-on-year, the total water intake of all mills decreased by 10.5% in comparison to fiscal year 2023. Its mill footprint rationalization efforts were the key contributor to its progress against this water intake target. WestRock paper mills that discharged directly to the environment had permits with limits on biochemical oxygen demand ('BOD') and total suspended solids ('TSS'). These mills used effective wastewater treatment systems to reduce these parameters. In 2024, these mills reduced BOD discharges by nearly 15.6%, and TSS reduced by 5.4% against a 2019 baseline.

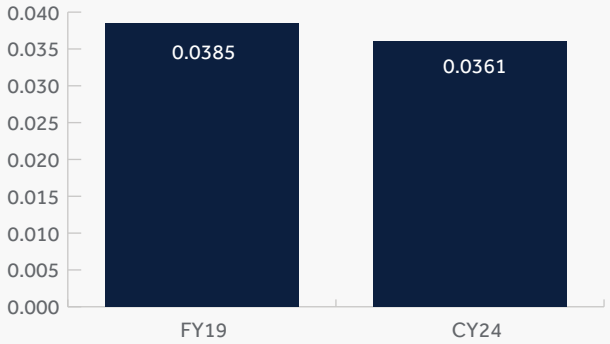
**Mill Water Use - Withdrawal and Effluents**
(Megaliters)



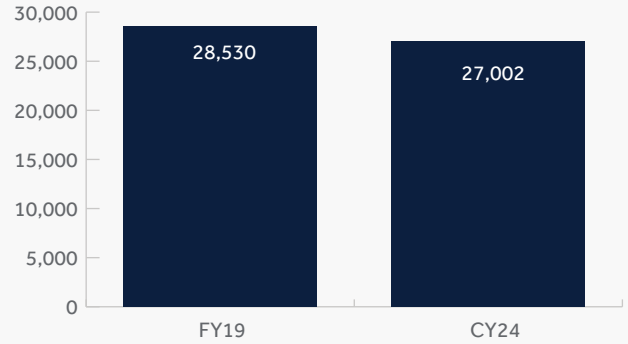

**Total Mill Biological Oxygen Demand (BOD)**
(1,000 lbs)



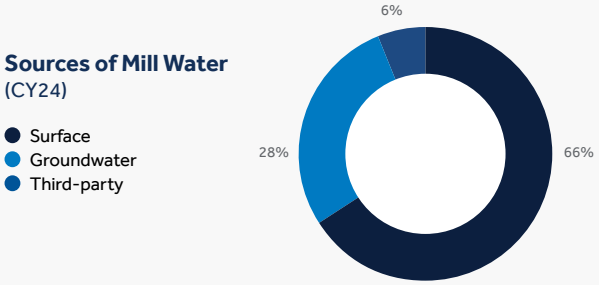

**Mill Water Withdrawal Intensity**
(Megaliters/Ton)




**Total Mill Suspended Solids (TSS) Discharged**
(1,000 lbs)




**Sources of Mill Water**
(CY24)



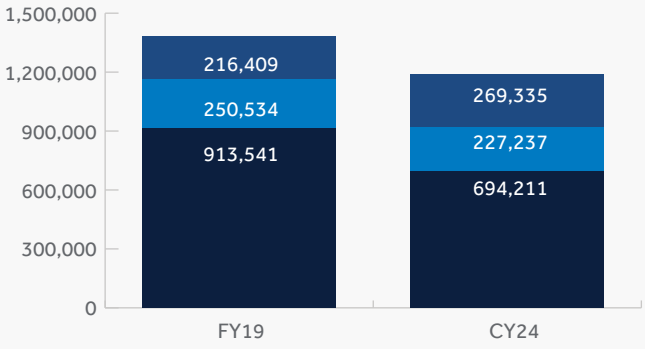
# Waste

In 2024, WestRock focused on minimizing waste from its own manufacturing operations and finding safe, environmentally responsible ways to recycle waste materials. Several of the byproducts generated by its paper mills were beneficially reused maximizing these opportunities enabling WestRock to capture both business and sustainability benefits.

In 2024, WestRock reduced waste sent to landfill by 24.0% against a 2019 baseline.

In 2024, WestRock increased the beneficial use of waste generated at the mills by 24.5% against a 2019 baseline.

**Mill Waste Generation** (tons)




**CY24 Waste - All Mills**