



Green Bond Allocation and Impact Report

September | 2023



At Smurfit Kappa,
as one of the leading global
providers of sustainable
packaging, **we are proud to
create, protect and care.**

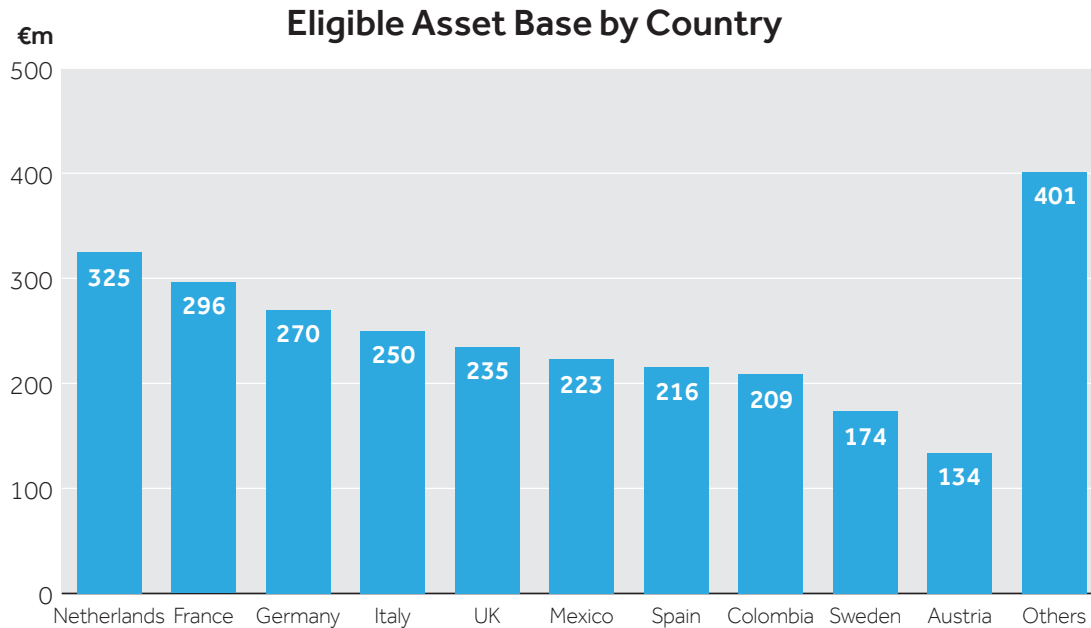


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Leading in Sustainability – Delivering for all Stakeholders



Don't take our word for it, take theirs: Some examples of our external recognitions



1



2.1%

reduction in water consumption in 2022

2



€26m

of investments in water treatment projects in 2022

3



World's
1st

paper mill to successfully trial hydrogen at Saillat in France

4



€994m

of investments in CO₂ reduction since 2005, including: Nettingsdorf (Austria) bio-boiler, Nuevo Laredo (Mexico) corrugated plant upgrade and Zülpich (Germany) move from coal to natural gas

5



43.9%

relative CO₂ emission reduction since 2005

6



24%

reduction of waste to landfill from our paper mills since 2013

2022

Revenue **€12.8bn;**

EBITDA **€2.4bn;**

Return on Capital Employed **21.8%**

Credit Ratings

Standard & Poor's BBB- (stable outlook)

Moody's Baa3 (stable outlook)

Fitch BBB- (positive outlook)

Executive Summary

Our purpose is to create innovative and sustainable paper-based packaging solutions for our customers, protect products in transit and precious resources for future generations while caring for each other, the environment and the planet.

In September 2021, we launched our Green Finance Framework in order to further integrate the circularity at the heart of our business model into our funding strategy, alongside our sustainability-linked €1,350 million Revolving Credit Facility and €330 million Securitisation Facilities.

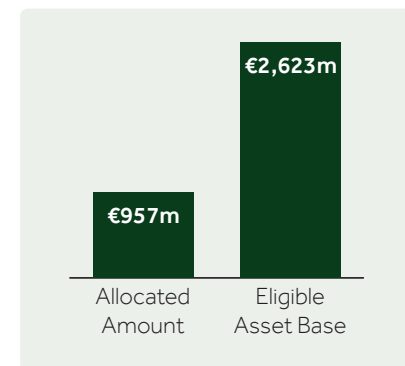
The allocations made under our Eligible Asset categories support UN Sustainable Development Goal 12 – ‘Responsible production and consumption’ and Goal 15 – ‘Life on land’, and the goals of the Paris Agreement. In September 2021, we issued our inaugural green bond of €1,000 million, which was allocated to refinancing our portfolio of Eligible Assets which totalled €2,733 million at 31 December 2022.



Significant Contribution

Allocated to Circular Economy Adapted Products, Production Technologies and Processes and/or Certified Eco-efficient Projects.

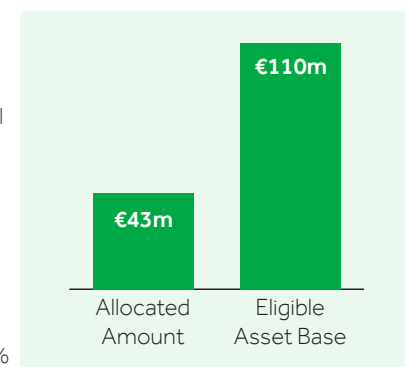
- ▶ 6.8m tonnes of primarily post-consumer waste recycled in 2022
- ▶ 76.2% recycled fibres in global production
- ▶ 100% recycled fibres from certified FSC, PEFC or SFI sustainable sources
- ▶ 4% reduction in waste to landfill versus 2020
- ▶ 8% reduction in water intake versus 2020
- ▶ 127 Mm³ wastewater treated in 2022



Limited Contribution

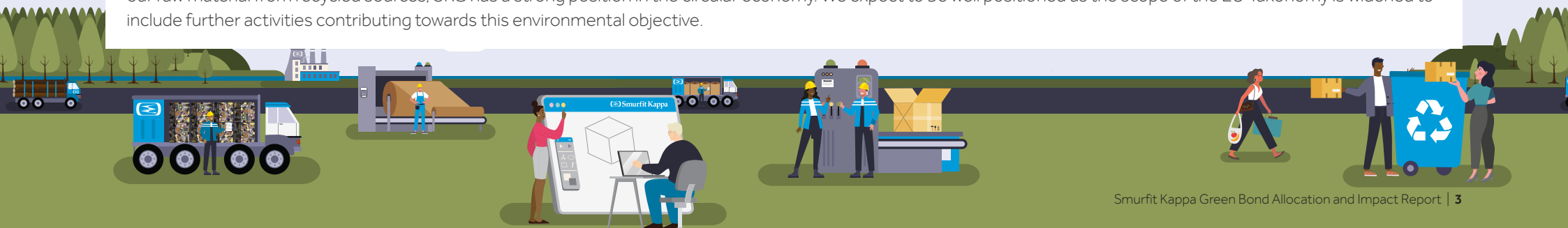
Allocated to Environmentally Sustainable Management of Living Natural Resources and Land Use.

- ▶ 100% of our forestry assets are FSC certified
- ▶ Our forests in Colombia are 100% FSC certified, of which over 30% are protected, natural forests supporting biodiversity
- ▶ 9.34 million tonnes of CO₂ is stored in our growing trees
- ▶ 100% of the wood used in production is from certified sustainably managed forests; 56% is from FSC or PEFC certified forests and 44% is from FSC Controlled Wood sources (risk-assessed through our FSC and PEFC Chain of Custody System and verified by a third party).



EU Taxonomy

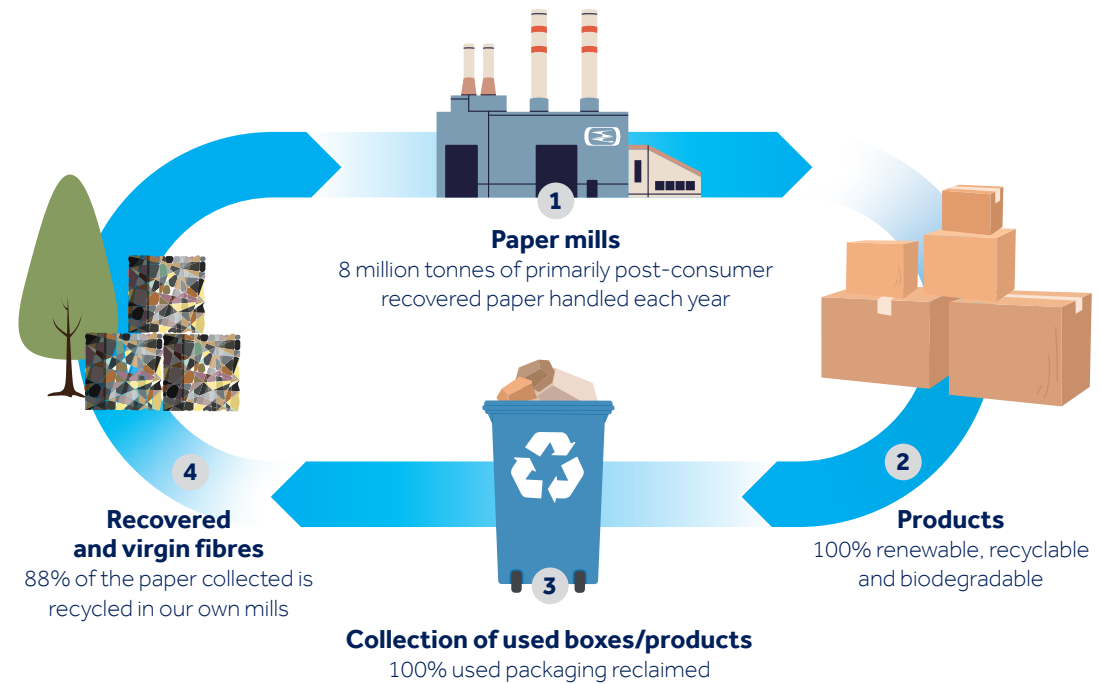
The current Taxonomy classification criteria does not yet cover the core business activities of the Group. In producing paper-based packaging solutions and having 76% of our raw material from recycled sources, SKG has a strong position in the circular economy. We expect to be well positioned as the scope of the EU Taxonomy is widened to include further activities contributing towards this environmental objective.



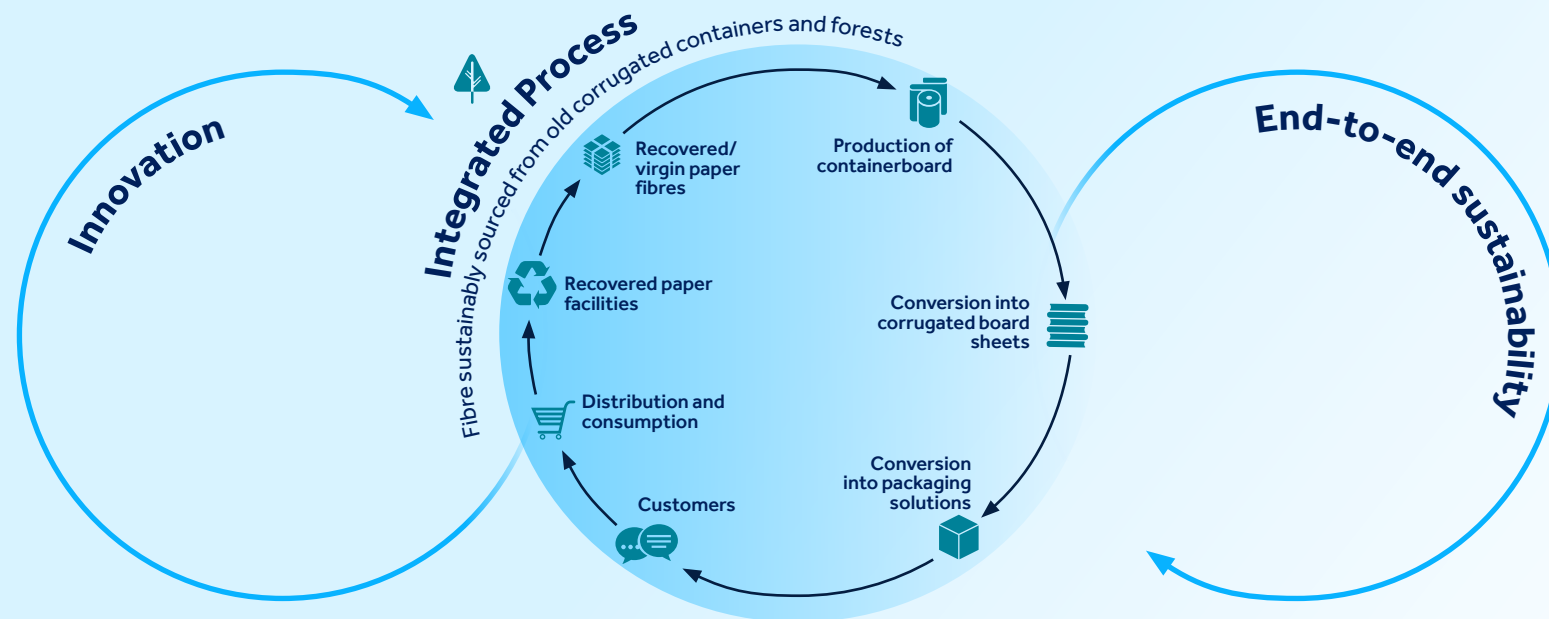
A Circular Business, Naturally

With our operations influencing the whole packaged goods value chain, we drive positive change from sustainable and responsible raw material sourcing to minimising operational impact and lowering our customers' environmental footprints.

A constituent of the FTSE 100, we operate through over 350 production sites located in 22 European countries, 13 countries in the Americas and one in Africa, and are listed on the London Stock Exchange and Euronext Dublin. With approximately 47,000 employees worldwide, we have the experience and expertise to create new opportunities for our customers, with our innovative packaging solutions providing the optimum choice in sustainable packaging supplies.



Our Circular Business Model



Our approach to circularity is not just about our product, but the complete process: how we source the raw materials, how we create our products, how they are used and what happens when they reach the end of use.

Sustainable Finance at Smurfit Kappa

In 2020, we incorporated five key ESG objectives into our financing through converting our €1,350 million multi-bank Revolving Credit Facility (“RCF”) into a sustainability-linked loan. The margin on our RCF is linked to the achievement of five key performance indicators (“KPIs”) on Climate Change, Forest, Water, Waste and Health & Safety. All five targets need to be achieved in order to attain maximum margin benefit. This initiative was extended to our two securitisation programmes in 2021.
















As part of this further integration of the sustainability ambitions at the core of our business model into our funding strategy, we developed the Smurfit Kappa Green Finance Framework (“the Framework”)¹ in 2021, with pre-issuance assurance carried out by ISS ESG². In September 2021, we issued our inaugural green bond under the Framework, the proceeds of which were used to refinance our Portfolio of Eligible Assets. The vast majority of our Eligible Assets comprise the productive assets related to reclamation, recycling, paper milling and packaging conversion, which received the highest level of contribution from ISS ESG – Significant Contribution.

1 sk_greenfinanceframework_2021.pdf (smurfitkappa.com)

2 skg-second-party-opinion.pdf (smurfitkappa.com)



Sustainability-linked RCF and Securitisation Programmes Facilities Total €1,680m

Margin linked to Annualised KPIs for the following Sustainability Targets

Climate Change		Net zero	Our ambition is to have at least net zero emissions by 2050 with a 55% reduction in relative CO ₂ emissions by 2030			
Forest		>95%	packaging solutions sold as Chain of Custody (CoC) certified to customers by 2025			
Water		60%	reduction in relative Chemical Oxygen Demand (COD) discharge by 2025			
Waste		30%	reduction in relative waste sent to landfill by 2025			
Health and Safety		at least 5%	reduction in Total Recordable Injury Rate (TRIR) annually			

Green Bond Portfolio | €1,000m

Using Eligible Assets from the following categories

Use of Proceeds	Contribution or Obstruction	Sustainable Development Goals
Circular economy adapted products, production technologies and processes and/or certified eco-efficient products Reclamation of used fibres Recycling of used fibres Paper milling Packaging conversion	Significant Contribution	
Environmental sustainable management of living natural resources and land use Forests and Products certified in accordance with FSC, PEFC, SFI	Limited Contribution	

ISS ESG Assessment is Based on a 5 Point Scale:

Significant Obstruction	Limited Obstruction	No Net Impact	Limited Contribution	Significant Contribution
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Green Bond Allocation Report

Green Bond Proceeds – Use of Proceeds

In this report, we present the allocation of the proceeds and the impacts achieved by our inaugural green bond. The reporting is based on eligible asset values as at 31 December 2022. We have used the portfolio approach, but also share specific case studies to highlight continuous investment in our own eligible assets, own sustainability initiatives and our initiatives and innovations designed to help our customers attain their sustainability objectives.

For our inaugural green bond, we allocated 100% of the proceeds to the refinancing of our eligible green asset base. Green assets qualify without a specific look back period provided that at the time of the issuance and throughout the life of the instrument they follow the eligibility criteria outlined below:

Circular economy adapted products, production technologies and processes and/or certified eco-efficient products

- ▶ **Assets and expenditures associated with the reclamation of used fibres.**
Eligible assets: audited balance sheet (net of depreciation) plant & equipment assets of our Recycling Depots.
- ▶ **Assets and expenditures associated with the recycling of used fibres.**
Eligible assets: audited balance sheet (net of depreciation) plant & equipment assets of our Recycling Plants.
- ▶ **Assets and expenditures associated with paper milling.**
Eligible assets are the audited balance sheet (net of depreciation) plant & equipment assets of our sustainably sourced Virgin and Recycling Paper Mills.
- ▶ **Assets and expenditures associated with packaging conversion.**
Eligible assets are the audited balance sheet (net of depreciation) plant & equipment assets of our Corrugated and Sacks Plants.

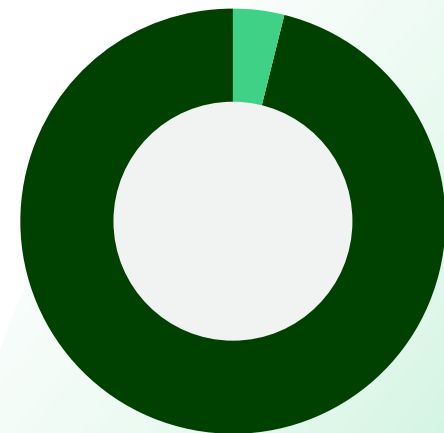
Plant & Equipment excludes: Spare parts and construction in progress as well as the plant & equipment assets of our head offices, Bag-in-Box plants (due to an element of plastic in production), sales and distribution offices.

Environmentally sustainable management of living natural resources and land use

- ▶ **Forests and Products certified in accordance with FSC, PEFC, SFI.**
Eligible assets: audited balance sheet FSC certified forestry assets.

Allocated Green Bond Categories

31 December 2022



96%

Circular Economy adapted products, production technologies and processes and/or certified eco-efficient products

4%

Environmentally sustainable management of living natural resources and land use

Use of Proceeds Allocation Table

Portfolio of Eligible Assets Asset values at 31 December 2022			Green Funding			
ICMA GBP/LMA Eligible Categories	Amount €m	Allocated Amount €m	ISIN	Issuance Date	Maturity Date	Amount €m
Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	2,623	957	XS2388182573	22 Sep 2021	22 Sep 2029	500
			XS2388183381	22 Sep 2021	22 Sep 2033	500
Environmentally sustainable management of living natural resources and land use	110	43				
Total Portfolio of Eligible Assets	2,733	1,000	Total Green Funding			1,000

	As at 31 Dec 2022
Percentage of Portfolio of Eligible Assets allocated to Green Finance Instruments net proceeds	37%
Amount of Portfolio of Eligible Assets Allocated (€m)	1,000
Percentage of Net Proceeds of Green Finance Instruments allocated to Portfolio of Eligible Assets	100%
New Eligible Green Assets added to the portfolio since 31 Dec 2019 (€m)*	1,242
New Eligible Green Assets added to the portfolio since 31 Dec 2019**	55%

Construction in progress is not included in the portfolio of Eligible Assets until it becomes operational.

* New Eligible Green Assets comprise additions to the Portfolio of Eligible Assets associated with the production of circular economy adapted products, production technologies and processes and/or certified eco-efficient products and reclassification from construction in progress to the Portfolio of Eligible Assets from 31 December 2019 to 31 December 2022.

** The percentage is calculated by reference to the Portfolio of Eligible Assets associated with the production of circular economy adapted products, production technologies and processes and/or certified eco-efficient products as at 31 December 2019.

Green Bond Proceeds Allocation – Governance

Smurfit Kappa seeks to provide industry-leading transparency and detail to our stakeholders of every aspect of our operations. Independently assured since 2009 using the Global Reporting Initiative, we have been reporting on our corporate sustainability progress since 2007 in our annual Sustainable Development Report (“SDR”)³.

Our SDR reports in line with the recommendations of the Taskforce for Climate Related Financial Disclosures and the Sustainable Accounting Standards Board criteria. Sustainability is embedded across our business and included in our senior management incentives and our cost of funding under our sustainability-linked revolving credit and securitisation facilities.

In September 2021, we launched our Green Finance Framework which follows the International Capital Market Association (“ICMA”) 2021 Green Bond Principles⁴ and the Loan Market Association (“LMA”) 2021 Green Loan Principles⁵.

Use of Proceeds	Process for Project Evaluation and Selection	Management of Proceeds	Reporting
<p>Eligibility Criteria:</p> <p>Assets and expenditures associated with the sustainable and responsible production of circular paper-based packaging products through circular processes, including:</p> <ul style="list-style-type: none"> ▶ Reclamation of used fibres ▶ Recycling of used fibres ▶ Paper milling ▶ Packaging conversion <p>Certified Sustainable Forests and Purchasing costs of responsibly sourced raw materials (such as wood, pulp, paper, recovered paper).</p> <p>Forests and Products certified in accordance with:</p> <ul style="list-style-type: none"> ▶ Forest Stewardship Council (FSC) standards ▶ Sustainable Forestry Initiative (SFI) ▶ Programme for the Endorsement of Forest Certification (PEFC) 	<p>Process implemented to ensure that only assets or expenditures (“Eligible Green Projects”) aligned with the eligibility criteria under our Green Finance Framework will be selected for Green Finance Instruments.</p> <p>Smurfit Kappa Green Finance Committee:</p> <p>Overseen by the Chief Financial Officer.</p> <p>Includes representatives from:</p> <ul style="list-style-type: none"> ▶ Treasury ▶ Finance ▶ Sustainability ▶ Corporate Planning <p>Jointly responsible for designating, reviewing and updating the Eligible Green Project Portfolio.</p> <p>The Green Finance Committee has approved the final allocation of Eligible Assets allocated to the Green Finance Instruments net proceeds and the impact report prepared using category specific KPIs.</p>	<p>The proceeds will be allocated and managed by the Smurfit Kappa Treasury department on a portfolio basis.</p> <p>Proceeds from Green Finance instruments will be allocated to the Eligible Green Project Portfolio, selected in accordance with the use of proceeds criteria and evaluation and selection process.</p> <p>Smurfit Kappa will strive, over time, to achieve a level of allocation for the Eligible Green Project Portfolio which matches or exceeds the balance of net proceeds from the outstanding Green Finance Instruments.</p> <p>If the net proceeds of the Green Finance Instruments temporarily exceed the value of the eligible Green Project Portfolio, such proceeds will be held in accordance with Smurfit Kappa’s normal liquidity management policy.</p>	<p>Smurfit Kappa commits to report annually on the allocation and impact of our Green Finance Instruments issued under our Green Finance Framework until maturity or full allocation.</p> <p>Smurfit Kappa commits to obtain a limited assurance third party audit of the management statement on the allocation of the Green Finance Instrument proceeds to the Eligible Green Project Portfolio.</p> <p>Smurfit Kappa commits to, where relevant, align our impact reporting with the latest standards and practices publicised by the ICMA such as the “Harmonised Framework for Impact Reporting”.</p>

³ <https://www.smurfitkappa.com>

⁴ <https://www.icmagroup.org>

⁵ <https://lma.eu.com>

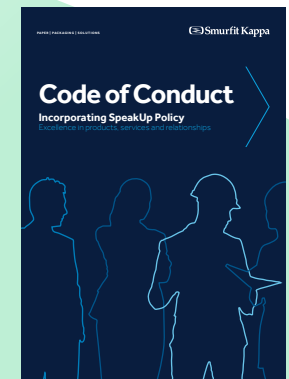
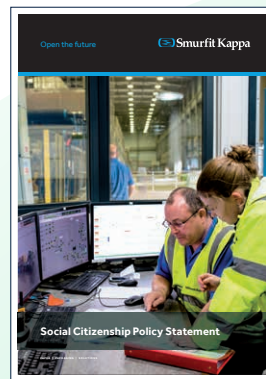
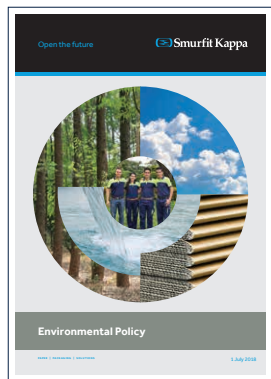
The eligible assets and expenditures relate to activities that are subject to continual improvement, as in the production of circular paper-based packaging products we take the following aspects of our fully circular approach into account:

- ▶ Monitoring and reducing water consumption in our manufacturing activities
- ▶ Decreasing the organic content of process water before it is returned to public water bodies
- ▶ Increasing onsite renewable energy generation
- ▶ Increasing energy efficiency in our manufacturing facilities
- ▶ Reducing waste (unwanted plastic, metals, glass, textiles, sand and other non-usable materials in recovered paper bales, for example) sent to landfill

Care is taken that all selected assets and expenditures comply with official national and international environmental and social standards, local laws and regulations to the extent feasible. Furthermore, our Sustainability Guidelines and Policies define minimum standards for the business processes, including those financed with the proceeds of Green Finance Instruments. Risk management measures are applied in our capital allocation decisions which are supported by company-wide planning, reporting and controlling systems.

In our Environmental Policy Statement and Sustainable Forestry Policy, we set out our commitment to ensuring that the human and natural environment with which we interact is protected both today and into the future. Smurfit Kappa is committed to managing our suppliers in accordance with our sustainability objectives, which is set out in our Sustainable Sourcing Policy and the Supplier Code of Conduct. We require our suppliers to comply (as a minimum) with relevant national and international environmental legislation concerning sustainability issues and seek to achieve best practice from suppliers through the promotion of continuous improvement programmes.

As set out in our Social Citizenship Policy Statement, we are committed to the application of the principles expressed in the United Nations Guiding Principles on Business and Human Rights and the Fundamental Principles and Rights at Work developed by the International Labour Organisation in all of the countries in which the Group has (or will have) a presence in respect of the following: freedom of association, child labour, forced labour and abuse, indigenous peoples, employee respect, diversity and non-discrimination, fair compensation, employee development, internal communication, and employee recognition. Suppliers (strategic) will also be requested to join the UN Global Compact initiative and requested to commit, in their Code of Business Conduct, to our principles in the areas of human rights, labour, environment and anti-corruption. All policies are available on our website, www.smurfitkappa.com.



Green Bond Impact Report

Based on the Approach of the Harmonised Framework for Impact Reporting – Portfolio Approach

Eligible Project Category	Signed Amount ^{a/}	Share of Total Portfolio Financing ^{b/}	Eligibility for Green Finance Instruments	Allocated Amount ^{c/}	Volume of used products collected from customers for recycling	% recycled fibres from certified sustainable sources	% recycled fibres in global production	%Reduction/ (Increase) in waste sent to landfill intensity ^{d/}		Annual volume of wastewater treated in 2022 ^{d/}	Reduction in water consumption ^{d/}		Reduction in Scope 1 and 2 fossil CO ₂ intensity ^{d/}		Forestry assets under FSC certified land management	Area of protected natural forest
	€ million	%	% of Signed Amount	€ million	ktonnes ar	%	%	Versus 2020	YoY	Mm ³	Versus 2020	YoY	Versus 2020	YoY	%	hectares
Circular economy adapted products, production technologies and processes and/or certified eco-efficient products	2,623	96%	100%	957	6,777	100%	76%	4%	(3%)	127	8%	2%	8%	2%		
Environmentally sustainable management of living natural resources and land use	110	4%	100%	43											100%	22,700
Total Eligible Green Asset Portfolio	2,733	100%	100%	1,000												

a/ Signed amount represents the amount eligible for green bond financing.

b/ This is the share of the total portfolio by eligible category.

c/ This represents the amount of green bond proceeds that has been allocated for disbursements to the portfolio by eligible category.

d/ As outlined in more detail in Appendix 2: Impact Metrics - Commitments and Calculation Methodology:

Waste-to-Landfill Intensity:

Our target is set against waste sent to landfill from our paper and board mills per produced tonne of paper. We focus on our paper and board mill system since 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 plastic, metals, glass, textiles, sand and other non-usable materials, for which we aim to find alternative use rather than sending to landfill. Our converting operations send paper clippings back to our mills, delivering high-quality recycled fibre. Recovered paper from our corrugating and converting operations comes with minimal auxiliary materials. We have achieved a 4% reduction in waste sent to landfill intensity since 2020. The year on year decline in 2022 was due to the increased production at our Cali mill, which has a higher waste to landfill intensity than our Group average, and also the fire at our SSK mill (UK) recovered paper yard, which resulted in an exceptional increase of waste sent to landfill. These were partially mitigated by the positive impact of the improved performance out of our Forney mill (US) and Zulpich mill (Germany). In 2022, we announced an almost US\$100 million investment in a sustainable biomass boiler for our Cali mill. This investment will generate a reduction of over 30% in waste-to-landfill for our Cali Mill once it becomes operational.

Water Processing and Consumption:

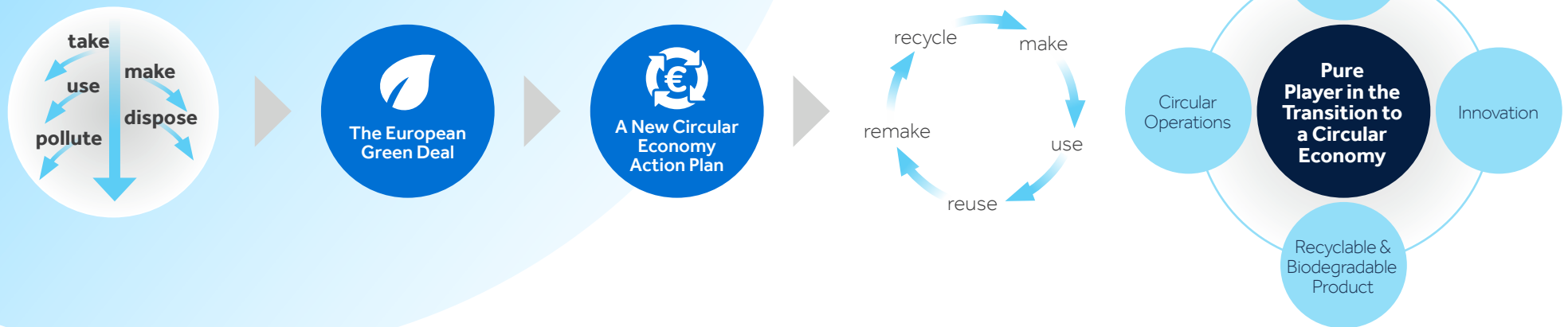
The data covers our paper and board mills discharging water produced through the process directly to water bodies. Mills that have their process water treated externally are not included. Of our eligible asset base, only paper and board production is taken into account as this contributes to 95% of all organic discharges and 98% of total water intake.

Fossil-Fuel Based CO₂ Emissions:

All CO₂ emissions from our paper and board mills relate to the production of paper and board. Of our eligible asset base, only paper and board production is taken into account in our Group targets, given its fossil CO₂ emissions are 80% compared with our converting operations and its subsequent contribution to fossil-fuel CO₂ emissions. Our reporting covers our operations from gate-to-gate.

Notes to Green Bond Impact Report

Smurfit Kappa Circular Business Model alignment with EU Ambitions



We believe that Global challenges need innovative solutions, with a focus on reducing waste and carbon emissions and thinking end-to-end. Products and packaging need to be more recyclable, truly recycled and made from renewable sources.

We are committed to sustainability and investing to evolve our business model with new advancing technologies to ensure that we design our products and develop our processes to be innovative, fit-for-purpose and circular by nature. We design sustainability into every stage of our products' life cycle and follow the guiding principles of waste prevention by closing loops at every stage.

We continuously invest and innovate to make our operations fully circular. Key to minimising waste is finding a use for our side product streams; whether doing so ourselves or in collaboration with regional partners and local communities. Already more than 50% of these side streams are recovered and recycled for reuse. Paper clippings from corrugating and converting operations are returned to our paper mills, while organic by-products such as wood bark and biogas from biological water

treatment are used as biofuel; some water treatment sludges become soil improvers and waste ash can be used in the cement industry.

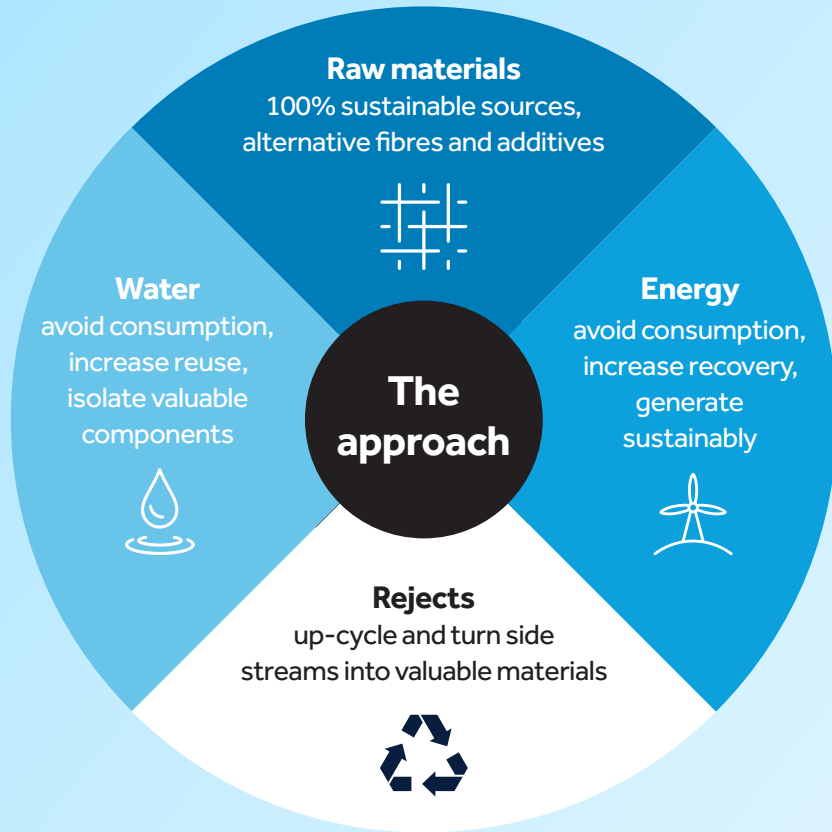
When it comes to the water we use, we are responsible stewards of this precious resource – recirculating our process waters several times, and investing in best practice water treatment before it is discharged back to the local water system.

We also continuously undertake investments to improve our energy efficiency, using more renewable energy to reduce impacts and lower costs – for example, in our paper mills we have achieved a 20.6% improvement in energy efficiency since 2005 and over 50% of the energy produced is now based on renewable energy.

Circular Aspects of our Products

Impact of our Products	Direct Impact	Indirect Impact
Impact 1 Refuse	 <p>Designing packaging solutions from mono-materials helps our customers to refuse packaging that is difficult to recycle, is therefore not recycled and that is not biodegradable.</p>	Supporting the packaging value chain to reduce packaging waste and uncontrolled litter. Delivering solutions to our customers that help meet the EU Single Use Plastics Directive requirements.
Impact 2 Reduce	 <p>Designing packaging solutions that help eliminate non-circular packaging materials with a higher environmental footprint. Ensuring that resource efficiencies are maximised and material waste is reduced by offering fit-for-purpose packaging solutions that optimise the use of packaging materials. Where possible, we produce lighter grammage papers which require less fibre.</p>	We intend to use renewable energy wherever it is economically feasible. This will involve additional use of biomass and scaling-up methods, which use our organic waste to generate energy. It will also involve investments that reduce CO ₂ emissions and increase energy efficiency.
Impact 3 Reuse	 <p>Ensuring that where reusing is economically, logistically, hygienically and environmentally unfavourable, our recyclable packaging solutions offer a more sustainable alternative with less environmental impact than using a reusable solution.</p>	Ensuring that we reuse resources in our production wherever possible. For example, using the organic by-product of our production process as biofuel, or reusing materials separated in the paper-making process. We also reuse water in our paper-making processes multiple times, before treating it for discharge.
Impact 4 Recycle	 <p>76% of the raw material we use consists of recycled fibres. All paper-based packaging we produce is recyclable.</p> <p>Recycling of our packaging product delivers new corrugated products with the same quality, whereas the majority of plastic packaging, for example, is downcycled.</p>	We continually find ways to recycle the metal, plastic, wood and other non-paper components separated from the recovered paper that is delivered to our mills.
Impact 5 Recover	 <p>Ensuring all paper-based packaging we manufacture can be recovered. For example, offering mono-material solutions that are easy to recover for our customers and consumers.</p>	Our corrugated plants recover paper clippings and send them back to paper production at our mills. We close loops and create circularity in our energy production through recovering the high-energy value of any by-products, such as black liquor and biogas, and circulating heat. We also seek synergies with our neighbours where possible.
Impact 6 Renew	 <p>We promote sustainable forest management in our own forests and plantations as well as throughout our supply chain, and demand deliveries of fibrous materials to be CoC certified by an internationally accepted forest management standard, FSC, PEFC or SFI.</p>	
Impact 7 Biodegrade	 <p>Paper is made of renewable raw materials, with up to 97% fibre and starch; the rest being fillers and ashes, such as calcium carbonate. Renewable materials biodegrade naturally and at the end-of-life are converted to natural materials, such as CO₂ and water.</p>	

Circular Aspects of our Approach to Production



Our Circular Approach to Waste

6.8 million tonnes

of predominantly post-consumer waste streams (old boxes) recycled as our key raw material to make new boxes

4% reduction

in waste to landfill intensity since 2020

100% renewable

Leading integrated corrugated packaging producer with 100% renewable, recyclable and biodegradable products

Project Examples:



Continuous Improvement in Recycling Waste

Argentina

Coronel Suárez Mill in Argentina has a culture of continuous improvement, and in the past year it has focused on two highly successful waste reduction and recycling programmes.

The bales of recovered paper that the mill processes contain many unwanted materials, mostly plastics, which are sent to landfill three times a week – 200km away. The repulping process also means that all rejected materials come with a high water content. When Superintendent of Maintenance, Javier Guarnieri and Mill Manager, Sergio Torres learned that at another nearby mill an out

of order pneumatic screw press was being consigned to plastic waste, they saw an opportunity to bring this back into operation and joined Environmental Manager, Marina Povo and Environmental Coordinator, Pamela Rey to the team. Using this press, water is squeezed out of the plastic waste, vastly reducing the weight of the waste sent to landfill. In the next five years, Colonel Suárez plans to repurpose plastic for energy recovery, but for now, this intervention has reduced waste to landfill by 20% or 760 tonnes in just one year, saving an estimated 44 tonnes of CO₂ in avoided transportation.

"We have to be resourceful about sending waste to landfill because it's so far away and expensive, and not sustainable for us," says Pamela. "We're always looking for alternative ways to reduce it."

In another initiative, the team researched how they could divert metal and plastic ink and chemical drums from landfill. Having found a market for the drums, their target was 5% – but within months they recycled 20%, around 10 tonnes. This has saved the site €15.7k in charges and avoided around 9 tonnes of oil being needed to make new drums.

The mill is now aiming for a 25% recycling target, and towards this is in the process of reviewing its waste permit from the local authority.

Transforming Waste into Reusable Material

Italy

Verzuolo paper mill in Piedmont, Italy, can process 1,000 tonnes of waste paper every day, but with the recovered paper come other materials that we can't use. Some 4-5% of its 'reject' – things like the plastic windows in envelopes and metal bindings on folders. In most European countries, some plastic material can be burned for energy, but not in Italy. Instead, rejects go to landfill – at an environmental cost of €190 per tonne for Verzuolo. Raffaele Marinucci, Engineering Director at Verzuolo, is leading a research project to change this. He saw a new flotation tank technology that could efficiently separate plastics from rubber waste such as used tyres and made a business case to invest in it. With this new technology at Verzuolo, rejects are shredded and then pulped and flushed in a giant water tank. Water makes up 50% of the total volume, and low-density plastics 20%, with 3% being ferrous metals. These materials are now separated out and sold on for reuse via brokers – the plastics can be melted and moulded into many different products, such as pallets.

What was the motivation for this project? For Raffaele it was simple: "The waste reject comes with an extremely high cost and a large environmental footprint. When we buy waste paper we also buy rubbish, so we must consider the full cost, including disposal of the waste. We also anticipate there will soon be legislation to ban sending waste to landfill. We had to think out of the box to find a sustainable solution."

So far, the project has reached a recovery rate of 25% of the potential reusable waste. With some fine tuning, the new technology should soon be able to remove 19,000 tonnes of reusable materials from the waste stream each year and reduce the mill's waste sent to landfill by 7.5%. All for an investment of €4.5m – plus the time, effort and passion of Raffaele and his team.

Our Circular Approach to Water Stewardship

36.9% reduction

reduction in Chemical Oxygen Demand since 2005

8% reduction

of our water usage since 2020

Project Examples:



Approximately
90%
efficiency in COD
reduction at all four
water treatment
plants

Investing in Cleaner Water in the Americas

As part of the Group's ambitious target to reduce COD in our water discharge, we have made significant investments in best-practice water treatment in the Americas region. Water is a medium that helps us to form paper from pulp – a mass of fibres. We return some 90% of the water back to nature after water treatment. The rest of the water evaporates from the process and some is bound in the product.

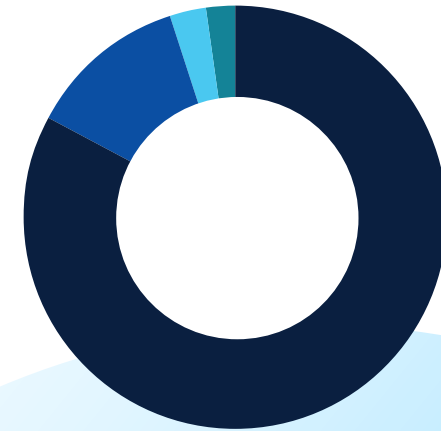
Most of the time, we return the water we use back to the same water body we take it from. Therefore it is important for us that we manage the water quality of our discharge. We do this by treating the water in the water treatment plants and we work to constantly

improve the discharge parameter with COD being the most important. Since 2018, we have invested in building water treatment plants at our Barbosa, Barranquilla (Colombia), Cerro Gordo (Mexico) and Uberaba (Brazil) mills. All new treatment plants are now running, delivering towards the Group target of 60% reduction of COD by 2025 in comparison with the baseline year 2005.

The COD reduction efficiency at the water treatment plants is currently at 95% in Barbosa, 87% in Barranquilla, 92% In Cerro Gordo and 97% in Uberaba.

Water Sources

All Operations



- Surface **83.47%**
- Ground **11.92%**
- Grid **3.04%**
- Other **1.57%**



Our Circular Approach to Reducing Fossil CO₂ Emissions

Project Examples:

In 2022 we announced an almost US\$100 million investment in bioenergy at our Cali paper mill which will help us to reduce our Scope 1 and Scope 2 CO₂ emissions by approximately 6%. The ambitious project is the latest example of the circularity that permeates every aspect of the company's operations. Smurfit Kappa has successfully implemented biomass boilers at several other locations including the Nervión, Piteå and Sangüesa paper mills in Europe.

The boiler, which will be constructed at our paper mill in Yumbo, Colombia, will replace the fossil fuels currently used with different

types of organic waste to generate cleaner energy. The organic waste will be comprised of pine and eucalyptus bark from the company's own forestry plantations, waste from its wood treatment plant, and ashes and sludge generated during the paper-manufacturing process.

When the new boiler is operational, the mill will significantly reduce the site's fossil fuel usage and deliver significant cost savings.

The new boiler is expected to be operational by the end of 2024.

In 2022, the HYFLEXPOWER consortium and Smurfit Kappa announced the successful completion of the first stage of the HYFLEXPOWER project, an innovative research project on renewable energy. This project located at the Smurfit Kappa Saillat paper mill in France, is the first in the world to introduce an integrated hydrogen gas turbine demonstrator.

The highly innovative project involves significant collaboration across several industries, academic bodies and research institutes, including ENGIE Solutions, Siemens Energy, Centrax, Arttic, German Aerospace Center (DLR), and four European universities.

The hydrogen pilot was successfully trialled with a mix of 30% hydrogen and 70% natural gas. The aim of the HYFLEXPOWER project is to clearly demonstrate that renewable

energy can be converted to hydrogen and serve as a flexible means of storing energy which can then be used to power an industrial turbine.

The project officially marks the implementation of the world's very first industrial-scale power-to-X-to-power demonstrator with an advanced hydrogen turbine. In 2023, trials will continue to increase the hydrogen ratio up to 100%.



8% reduction

in fossil CO₂ emissions intensity since 2020.

In 2022, we invested USD23.5 million to upgrade our Nuevo Laredo sheet plant in Mexico to become a fully integrated corrugated plant. The investment includes a state-of-the-art corrugator and extension of the building. The new machine, will have the two-pronged benefits of reducing CO₂ emissions by up to 40% and doubling production capacity.

The Nuevo Laredo plant is located in the Tamaulipas region in North eastern Mexico where Smurfit Kappa has strong partnerships in the industrial, electrical appliances and electronics sectors. The region represents 3.3% of the country's GDP and is home to over 200 companies which manufacture products for the US.

The investment will make significant inroads in the plant's ambitious sustainability targets. Its CO₂ emissions will be reduced by up to 40% due to significantly less transportation between Smurfit Kappa's Nuevo Laredo and San Antonio plants.

Science-approved



Our emission targets have been approved by the SBTi as being in line with the goals of the Paris Agreement.

Forest Stewardship

100%

of Smurfit Kappa forestry assets FSC/PEFC certified



A third of our Colombian forest land is dedicated to protecting forest sustainability, helping maintain the area's rich biodiversity and preserving watersheds, habitats and ecosystems.

To maintain forest biodiversity and sustainability, our principles for our commercial plantations that represent two thirds of our land use 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 programmes to preserve and enhance soil productivity.

Over 30%

of our forests in Colombia are protected, natural forests supporting biodiversity

9.34 million tonnes

of CO₂ stored in our growing trees

Forest Growth and Carbon Sequestration

Colombia

Every year the trees in our plantations sequester carbon from the atmosphere and store it in the growing stock.

Our plantations in Colombia have been established on land that has been in low-productivity use. Since the start of our forestry operations in Colombia, we have established sustainably managed tree stock which has increased the CO₂ sequestration capacity and carbon stock to a total current storage of over 9 million tonnes of CO₂ equivalents (eq). In 2022, the biomass on our plantations sequestered in total a little over one million tonnes of CO₂ eq from the atmosphere, a figure similar to the CO₂ eq in the wood we harvested. In total we have stored 9.34 million tonnes of CO₂ eq from the atmosphere in our growing trees inventory which remains at this level year on year.

To calculate this, we use a methodology, developed in collaboration with the Ministry of Agriculture and Rural Development (MADR), National Centre of Coffee Research (CENICAFE), and several forestry companies to quantify the growth and carbon sequestration capabilities of commercial pines and eucalyptus species grown under tropical conditions.

Europe

The forested land area in Europe has been in a steady growth since 1950's. The land area has grown during this time by some 30% and between 2005-2015 by 44,000km² (FAO), an equivalent of over 1,500 football fields. Smurfit Kappa owns some 500ha of forest in Europe, and we source a large proportion of our timber used at our virgin paper mills from forest owners whose forest holdings are located in boreal or hemiboreal forests.

Sustainable forest management benefits carbon sequestration and carbon storage in boreal forests. According to a recent study*, the carbon storage in intensively managed boreal forests grows faster than in those that are less managed. The study shows that the carbon sinks in the sustainably managed forests in Nordic Countries grew by 35% during 1990-2017, where as in other, less managed boreal forests it remained about the same. This means that supporting sustainable forest management is a means to mitigate climate change.



* Höberg P. et al. Sustainable boreal forest management – challenges and opportunities for climate change mitigation.

Assurance report of the independent auditor

To: the Board of Directors of Smurfit Kappa Group plc and its green bond holders

Our conclusion

We have reviewed the 'Use of Proceeds Allocation Table' of Smurfit Kappa Group plc (hereafter: 'Smurfit Kappa') for the year ended 31 December 2022. A review is aimed at obtaining a limited level of assurance.

Based on the procedures performed nothing has come to our attention that causes us to believe that the 'Use of Proceeds Allocation Table' is not prepared, in all material respects, in accordance with the reporting criteria as disclosed on page 7 of the report.

Basis for our conclusion

We performed our review in accordance with Dutch law, including Dutch Standard 3000A 'Assurance-opdrachten anders dan opdrachten tot controle of beoordeling van historische financiële informatie (attest-opdrachten) (assurance engagements other than audits or reviews of historical financial information (attestation engagements))'. This engagement is aimed to obtain limited assurance. Our responsibilities in this regard are further described in the 'Auditor's responsibilities' section of our report.

We are independent of Smurfit Kappa in accordance with the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence). Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics). We believe the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Reporting Criteria

The 'Use of Proceeds Allocation Table' needs to be read and understood together with the reporting criteria. Smurfit Kappa is solely responsible for selecting and applying these reporting criteria, taking into account applicable law and regulations related to reporting.

The reporting criteria used for the preparation of the 'Use of Proceeds Allocation Table' are the Eligibility Criteria as disclosed on page 6 of this report. The Eligibility Criteria used for the preparation of the Use of Proceeds are the Eligibility Criteria as described in the Green Finance Framework of Smurfit Kappa.

Materiality

Based on our professional judgement we determined materiality levels for each relevant part of the Report / the sustainability indicators and for the sustainability information as a whole. When evaluating our materiality levels, we have taken into account quantitative and qualitative considerations as well as the relevance of information for both stakeholders and the company.

The Board of Directors Responsibilities

The Board of Directors is responsible for the preparation of the 'Use of Proceeds Allocation Table' as included in this Report in accordance with the Eligibility Criteria. It is important to view the Use of Proceeds data in the context of these criteria.

Furthermore, the Board of Directors is responsible for such internal control as it determines is necessary to enable the preparation of the 'Use of Proceeds Allocation Table' that is free from material misstatement, whether due to fraud or error.

Auditor's responsibilities

Our responsibility is to plan and perform our review in a manner that allows us to obtain sufficient and appropriate assurance evidence for our conclusion.

Procedures performed to obtain a limited level of assurance are aimed to determine the plausibility of information and vary in nature and timing, and are less in extent, compared to a reasonable assurance engagement. The level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

We apply the 'Nadere Voorschriften Kwaliteitssystemen' (NVKS, Regulations for Quality management systems) and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have exercised professional judgement and have maintained professional skepticism throughout the review, in accordance with the Dutch Standard 3000A, ethical requirements and independence requirements.

Our review included among others:

- ▶ Performing an analysis of the external environment and obtaining an understanding of relevant societal themes and issues, and the characteristics of the company;
- ▶ Evaluating the appropriateness of the reporting criteria used, their consistent application and related disclosures in the 'Use of Proceeds Allocation Table'. This includes the evaluation of the results of stakeholder dialogue and the reasonableness of estimates made by the Board of Directors;
- ▶ Obtaining an understanding of the reporting processes for the 'Use of Proceeds Allocation Table', including obtaining a general understanding of internal control relevant to our review;

- ▶ Identifying areas of the 'Use of Proceeds Allocation Table' where a material misstatement, whether due to fraud or error, are most likely to occur, designing and performing assurance procedures responsive to these areas, and obtaining assurance information that is sufficient and appropriate to provide a basis for our conclusion. These procedures included, amongst others:
 - Interviewing management and relevant staff at corporate level responsible for the strategy, policy and results;
 - Interviewing relevant staff responsible for providing the information for, carrying out internal control procedures over, and consolidating the data in the 'Use of Proceeds Allocation Table';
 - Obtaining assurance information that the 'Use of Proceeds Allocation Table' reconciles with underlying records of the company;
 - Reviewing, on a limited test basis, relevant internal and external documentation;
 - Performing an analytical review of the data and trends.
- ▶ Evaluating the consistency of the 'Use of Proceeds Allocation Table' with the information in the report which is not included in the scope of our review;
- ▶ Evaluating the presentation, structure and content of the 'Use of Proceeds Allocation Table';
- ▶ Considering whether the 'Use of Proceeds Allocation Table' as a whole, including the disclosures, reflects the purpose of the reporting criteria used.

Amstelveen, 14 September 2023
KPMG Accountants N.V.

D.A.C.A.J. Landesz Campen RA

Glossary

Carbon dioxide equivalent CO₂-eq: A measure used to compare the emissions from various greenhouse gases based upon their climate change potential (CCP). The CO₂-eq carbon dioxide equivalent for other emissions is derived by multiplying the amount of the emission by the associated CCP factor.

COD: Chemical Oxygen Demand (COD) is the most commonly used test to measure the amount of organic compounds in water (unit: mg O₂ /litre). The result indicates the level of all organic compounds that can be oxidised by a strong oxidising agent.

FSC: The Forestry Stewardship Council (FSC) is an independent, non-governmental organisation established to promote the responsible management of the world's forests through independent third-party certification.

FSC Controlled: Wood sources, risk-assessed through our FSC and PEFC CoC system and verified by a third party.

Fossil CO₂: Carbon dioxide emitted when burning fossil fuels for the production of paper. The calculation is based on international guidelines from the carbon content of each fuel (WRI/WBCSD GHG protocol).

Net zero: To achieve net zero emissions, we work towards achieving a state in which the activities at our paper and board mills in our gate-to-gate value chain result in no net impact on the climate from greenhouse gas emissions. The key effort for Smurfit Kappa is to move from fossil-based fuels to carbon neutral fuels and improve its energy efficiency.

Non-controversial origin: Virgin wood or wood fibre which has been verified as having a low probability of including wood from any of the following categories, in line with FSC and PEFC schemes: a) Illegally harvested wood. b) Wood harvested in violation of traditional and civil rights. c) Wood harvested in forests in which high conservation values are threatened by management activities. d) Wood harvested in forests being converted from natural and semi-natural forests to plantations or non-forest use. e) Wood from forests in which genetically modified trees are planted.

Non-hazardous wastes landfill: Part of the non-hazardous wastes that are disposed of in either internal or external landfill in accordance with national legislation.

Non-hazardous wastes recovery: Part of non-hazardous wastes that are reused or recycled or composted or used in agriculture or incinerated with energy recovery. The incineration facility is classified as a recovery operation if the efficiency of the plant complies with the definition laid down in Annex II of the Directive 2008/98/EC on waste

NO_x: Mix of nitrogen oxides (NO and NO₂) calculated as NO₂ (nitrogen dioxide) coming from combustion of fuels. They can contribute to the acidification of soil and water. NO_x emissions are measured mainly by the mills. Where NO_x is not measured (converting plants), emissions are calculated from fuel consumption using the emission factors listed in the Ecoinvent database version 2.1. Ecoinvent is a life cycle inventory database for energy systems, materials, transports and chemicals.

PEFC: Programme for the Endorsement of Forest Certification. PEFC is an independent, non-governmental organisation that promotes sustainably managed forests through independent third-party certification.

Recovery: Recovery refers to extracting selected materials for a specific use. In the paper industry, this means recovery of fibres in recycled paper or the recovery of energy value in the final stage of the material life cycle.

Recycling: Converting material into new materials and products. In the paper industry, this refers to converting recycled fibres back to paper and finding new uses for other raw materials produced alongside recovered paper instead of sending them to landfill.

Reduction: This can either mean finding the most materially efficient ways to use raw materials or replacing a more harmful raw material with a less harmful one and thus reducing its harmful impact.

Renewing: Using renewable raw materials in a sustainable manner and maintaining the natural ability of the material to be renewed.

Reuse: Reuse is the action or practice of using something again, whether for its original purpose (conventional reuse) or to fulfil a different function (creative reuse or repurposing) without changing its form in between.

SDGs: The Sustainable Development Goals (SDGs) define global sustainable development priorities and aspirations for 2030 and seek to mobilise global efforts around a common set of goals and targets. The SDGs call for worldwide actions among governments, business and civil society to end poverty and create a life of dignity and opportunity for all, within the boundaries of the planet.

SFI: SFI Inc. (Sustainable Forest Initiative) is an independent, non-profit organisation dedicated to promoting sustainable forest management. Companies are certified Chain of Custody according to the SFI standard through independent third-party certification.

Total non-hazardous wastes: Sum of all non-hazardous waste whatever its destination. Each category of non-hazardous wastes is defined and reported.

Virgin fibre: Pulp obtained through a chemical process used to remove lignin from wood. As a result, the fibre can be used to produce paper. The lignin residue and other organic compounds are subsequently collected and used in the formation of black liquor.

Wastes: Wastes are classified as non-hazardous wastes or hazardous wastes, and are reported separately. Wood wastes and corrugated board shavings are excluded. All amounts of wastes are reported in mass as disposed.

Impact Metrics – Commitments and Calculation Methodology

Waste:

Commitment #1:

Decrease the waste sent to landfill by 30% per tonne of product produced by our mill system compared with 2013 levels by 2025.

- ▶ This priority area covers non-hazardous waste (recovered and landfilled) and hazardous waste generated from Smurfit Kappa's manufacturing processes.
- ▶ Our target is set against waste sent to landfill from our paper and board mills per produced tonne of paper. We focus on our paper and board mill system since 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 plastic, metals, glass, textiles, sand and other non-usable materials.
- ▶ Our converting operations send paper clippings back to our mills, delivering high-quality recycled fibre. Recovered paper from our corrugating and converting operations comes with minimal auxiliary materials, decreasing waste from the recycled fibre pulping process, further evidencing our circular approach to production.
- ▶ The amount of hazardous waste produced in our production processes is very low and depends on local activities such as construction or change of light bulbs on site. Therefore, we have no set target for hazardous waste.

Water:

Commitment #1:

Reduce the organic content of water returned to the environment from our mill plants (COD) by 60% compared with 2005 levels by 2025.

Commitment #2:

Perform environmental-impact assessments of the water use of our paper mills (where relevant) and develop water usage measurements.

Commitment #3:

At least 1% relative reduction annually of water intake by our global paper and board mill system with 2020 as reference year.

- ▶ This priority area covers the water intake and discharge to and from our processes. The data covers all Smurfit Kappa paper and board mills discharging water produced through the process directly to water bodies. Mills that have their process water treated externally are not included.
- ▶ Of our eligible asset base, only paper and board production is taken into account as this contributes to 95% of all organic discharges and 98% of total water intake.
- ▶ As a processor and not a consumer of water, we focus our efforts on further improving the quality of water we discharge, and understanding the risks associated with water availability and use in the areas where we operate. Our target is set against COD in water which is an indicator of the organic content in water.



Climate Change:

Commitment #1:

A 55% relative reduction in Scope 1 and 2 fossil-fuel based CO₂ emissions in our mill system compared with 2005 levels by 2030. Reach at least net zero by 2050.

Commitment #2:

Collaboration with customers to determine carbon footprints of the packaging life.

- ▶ This priority area covers energy use, climate change and greenhouse gas emissions.
- ▶ Our reporting covers our operations from gate-to-gate.
- ▶ All CO₂ emissions from our paper and board mills relate to the production of paper and board. Only paper and board production is taken into account in our Group targets, given its fossil CO₂ emissions are 80% compared with our converting operations and its subsequent contribution to fossil fuel CO₂ emissions.



Forest:

Commitment #1:

All fibre produced and purchased is CoC certified under FSC, PEFC or SFI.

Commitment #2:

At least 95% of our packaging is certified as CoC certified under FSC, PEFC or SFI.

Commitment #3:

All production sites use FSC, PEFC and/or SFI CoC standards.

- ▶ All production sites use FSC, PEFC and/or SFI CoC standards.
- ▶ This strategic priority covers forest management, biodiversity, fibre sourcing and the communication of how we use sustainable fibres through certified CoC.
- ▶ Our reporting encompasses all of our own operations and products.



We create, protect and care

Discover more about what motivates us all to create solutions that protect what we all care about.

smurfitkappa.com/purpose



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