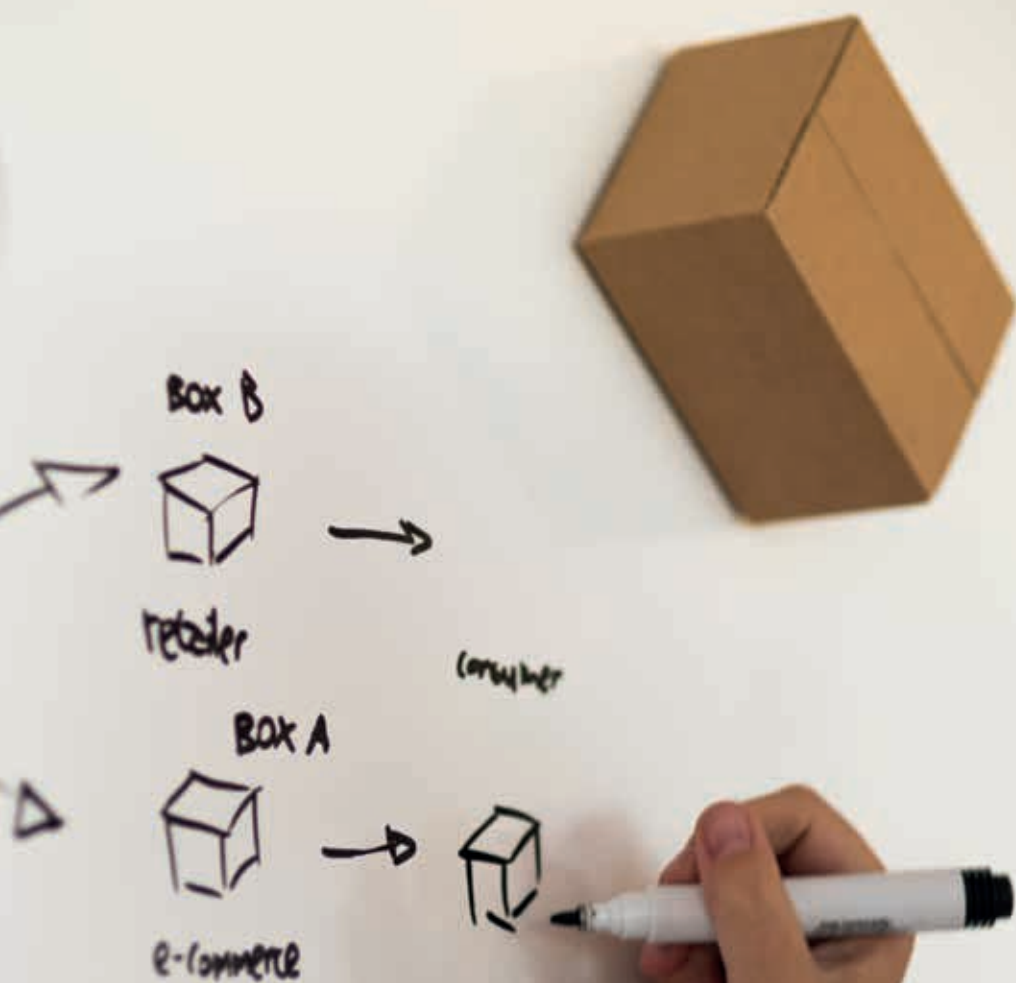


Sustainability that is innovative, inclusive and circular

Sustainable Development Report 2016



Overview

Our vision and operations

Our five strategic sustainability priorities

We are a global company whose work creates value for our customers, employees, investors, suppliers and the communities in which we operate.

Forest

At the end of 2016 we sold 90.1% of our packaging as certified by FSC® or PEFC™ standards.



Climate change

We have reduced fossil CO₂ emissions per produced tonne of paper by 22.9% since 2005.



Water

We have reduced 31.9% of the chemical oxygen demand (COD) in the water discharge per produced tonne of paper since 2005.



Waste

We have reduced waste sent to landfill per produced tonne by 13.3% since 2013.



People

We employ 45,000 men and women in 34 countries in Europe and the Americas. Safety and Health is a core value to SK, and we have reduced the Lost-Time Accident (LTA) frequency rate by 10% in 2016.



Our business in numbers

49

Recovered fibre/wood procurement facilities

103,000

hectares of forest plantation

36

Paper and board mills

€196m

income and other taxes

249

Converting plants

36%

€166m of dividends on a net profit of €458m

33

Other production plants

>300

strategic and important suppliers worldwide

60%

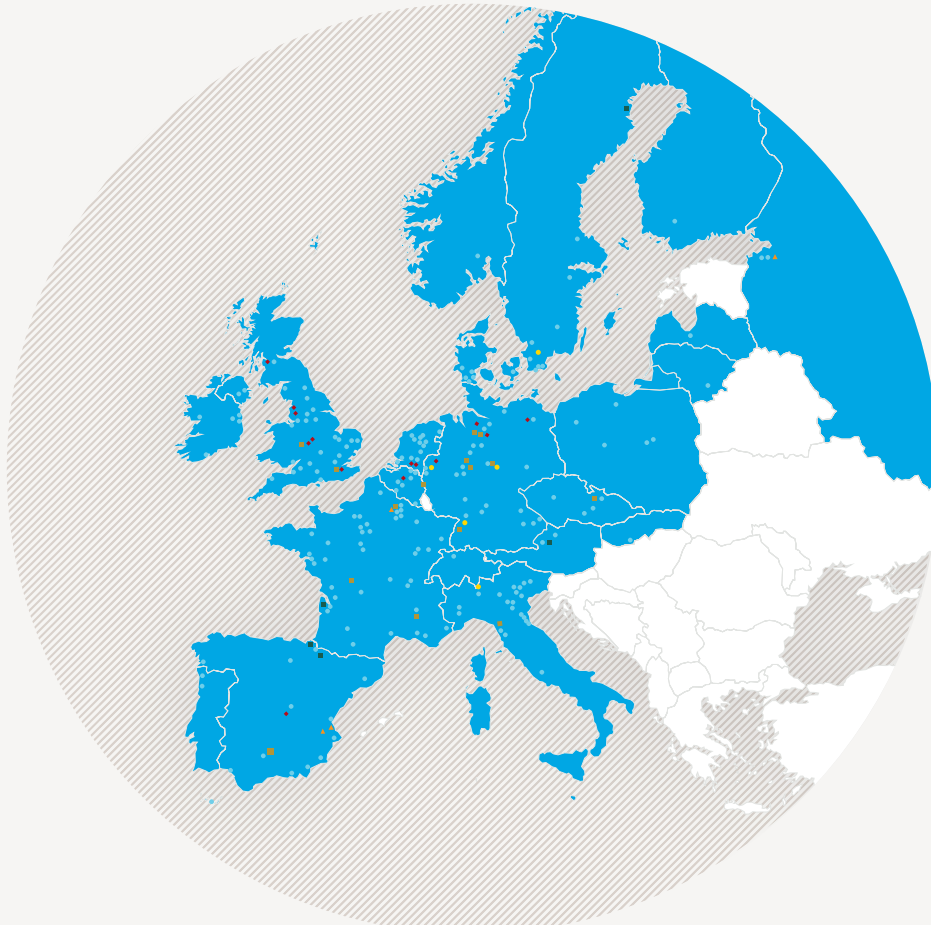
of customers in the FMCG segments

45,000

people employed worldwide

Our Group operations

Smurfit Kappa ('SKG'), a FTSE 100 company, is one of the leading providers of paper-based packaging solutions in the world, with approximately 45,000 employees in 367 production sites across 34 countries and with revenue of €8.2 billion in 2016. We are located in 21 countries in Europe, and 13 in the Americas. We are the only large-scale pan-regional player in Latin America.



Our global sales

Sales Europe

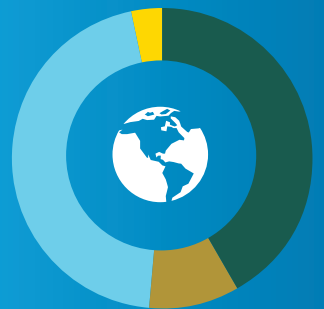
Volumes (Million Tonnes)



Kraftliner	1.6
Recycled Containerboard	3.0
Other Paper & Board	0.8
Corrugated	4.4
Solidboard Packaging	0.1

Sales The Americas

Volumes (Million Tonnes)



Containerboard	1.3
Other Paper & Board	0.3
Corrugated	1.4
Other Paper-based Packaging	0.1

Group Operations

Virgin Mills	Paper Sacks
Recycled Mills	Bag-in-box
Corrugated	Recovered Fibre
Cartons	Forestry

Overview
Our Vision and operations

As one of the world's largest paper-based packaging businesses, Smurfit Kappa maintains a relentless commitment to sustainable business that underlies everything we do.

We use sustainability as a lens through which to focus our innovation, our strategy and our processes. The transparency and detail we offer our stakeholders is industry leading.

For many years we have focused on designing our operations around a circular economy model – a truly closed-loop system in which the productivity of the resources we use is maximised and waste, including CO₂ emissions, generated through our products is minimised. Simultaneously, we endeavour to promote sustainable use of renewable raw materials, to reduce the use of and to replace non-renewable raw materials with renewable ones where feasible and ultimately to reuse resources we take out.

Our innovative, right-weighted, recyclable packaging delivers real savings in cost and carbon for our customers and for consumers. It is an approach that has delivered consistent business growth and long-term partnerships with some of the world's most respected brands as well as with local customers.

But current technology means paper cannot be recycled indefinitely; new wood fibre must be introduced into the system, creating an impact for which we must take responsibility. True closed-loop thinking starts in the forest, which is why we are unique among our peers in committing to

100% sustainably sourced new fibre from forests where biodiversity and human rights are assured to the highest globally recognised standards.

Our customers have unrivalled visibility of the environmental impact of the products they buy from us, helping them in turn to realise their own sustainability strategies and better manage their impact.

This is how we do business. It is what drives our success, our competitive energy, our appetite for fresh challenges. Every day, we prove how our way of working contributes to a better world and a brighter future.

That is why we are proud to say that running through our people, our processes and our products, we have **Sustainability in every fibre.**

From the production line through to the consumer, packaging can make a difference: through new ideas, it has the potential to shape the way you do business.

For more information visit:
openthefuture.info

Sustainability in every fibre

We drive innovation and sustainability for long-term success

This report contains an overview of our 2016 performance, a focus on our strategic direction, and a review of the businesses underpinning our strategy.



This picture shows how our forests and plantations blend naturally into the Colombian landscape.

Our vision and operations

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Our approach to sustainable business

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Our year in highlights

Vision into action: what we are doing



Business

Listings in investor rating systems

As well as being listed in the FTSE 100, Smurfit Kappa was listed by the FTSE4Good, Euronext Vigeo Europe 120, Ethibel and STOXX® Global ESG Leaders investor rating systems recognising sustainability achievements.

Ecovadis Gold

The Group achieved the golden status in Ecovadis sustainability benchmark for the third year running.

Winning in awards

In recognition of its cutting-edge and sustainable packaging solutions in among others, electronics, transit and food and drink, Smurfit Kappa has won five 2017 WorldStar Awards, one of the world's most prestigious packaging honours. We also received five Red Dot Awards 2017 for excellent design.

Acquisitions

Sound Packaging, Arizona, USA
Corrugated Professionals, Arizona, USA
Empire Packaging, California, USA
Scope Packaging, California, USA
Saxon Packaging, Suffolk, UK

Forest

Promoting sustainable forests

Our target is to ensure a transparent supply chain to sustainably sourced fibres through Chain of Custody certified production and purchase of the papers used in our products, communicating this to consumers through product labelling.

Achievement

At the end of 2016 we reached our target to deliver 90% of our packaging solutions as Chain of Custody certified. This allows our customers' packaging to be labelled as certified.

Improved internal audits

Following the implementation of a companywide certified Chain of Custody management system, our aim is to increase the effectiveness of these audits.

Achievement

We instituted a more robust, and standardised FSC/PEFC internal audit process by introducing the new digital "Audit Control Tool".

Climate change

Progress with our CO₂ emission reduction target

We are on track to achieve our 2020 target of reducing 25% of the fossil CO₂ emissions per tonne of produced paper, compared to the 2005 base line.

Achievement

By the end of 2016 we achieved 22.9% reduction in our specific paper production fossil CO₂ emissions.



Investments in more efficient energy production

We make investments throughout our paper mill network to increase the efficiency of energy production and use.

Achievements

New Combined Heat and Power plants have been built at our Ania (Italy) and Barbosa (Colombia) mills and an improved paper production system was created through the newly rebuilt paper machine at Townsend Hook (UK).





Water

Progress with mill water risk assessments

As part of our commitment to understand the risks related to water, we have a programme to assess the water risks of individual mills.

Achievement

Five more sites have been audited, during 2016, so 11 of our 36 paper mills have a provable 'well managed risk' outcome.

Participation in water working groups

We want to understand and promote better water management throughout our industry and beyond by collaborating within different working groups.

Achievement

We are now members of the WBCSD Water Re-Use working group.



Waste

Approaching our 2020 waste reduction target

We set ourselves a new target in 2015 to reduce waste sent to landfill by 30% per tonne of paper compared with the 2013 baseline.

Achievement

In 2016 we achieved a reduction of 13.3% compared to 2013.

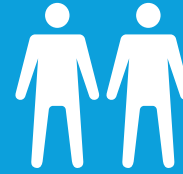


Circular economy

We continually search for opportunities to decrease waste sent to landfill, and find alternative uses for residual materials from our production processes.

Achievement

Five of our 36 paper mills do not send waste to landfill. Many paper mills now have initiatives to supply our residual material as input materials to other industries.



People

MyVoice – Employee engagement

The engagement of our 45,000 employees is of utmost importance to us. Our first ever company-wide employee engagement survey 'MyVoice' was launched to listen to our employees and aiming to make Smurfit Kappa an even better place to work. The next MyVoice survey will be conducted in 2017.

Achievement

Over 1,200 actions taken across the Group in response of the MyVoice survey.

Health and Safety

We are committed to promoting and ensuring safe environments and wellbeing for all our employees. We have a structured and systematic approach to Health and Safety, through which we aim to continuously improve our performance in this area.

Achievement

Compared to 2015, the Group has recorded a reduction in LTA frequency of 10%. 189 operations reported zero LTAs in 2016.

Social investments in local communities

We continue to engage with, and actively support, local communities through our Smurfit Kappa Foundation and local operations.

Achievement

Smurfit Kappa and its related foundations donated over €5 million in 2016, with noteworthy projects in Italy, Mexico and Colombia, among others.

Overview

A letter from our Group Chief Executive Officer

Welcome to Smurfit Kappa's 10th annual Sustainable Development Report

Once again, 2016 was a year of significant change both for our Company and for corporate sustainability. We joined the FTSE 100, the Paris Agreement on Climate Change was ratified and we saw the UN 2030 Agenda for Sustainable development taken up by a growing community of businesses around the world.



Summary

- We celebrate 10 years of sustainability progress
- We reached the target of selling over 90% of our packaging solutions Chain of Custody certified
- We are on track for 2020 CO₂ and Chemical Oxygen Demand targets
- Smurfit Kappa is included in the STOXX® Global ESG Leaders index as well as FTSE4Good, Euronext Vigeo 120 Europe and Ethibel sustainable investment register
- In Health and Safety, Lost-Time Accidents frequency decreased by 10%

As Smurfit Kappa's CEO, I am determined that our Company will play its part in creating a sustainable future by building a profitable business based on sustainable principles. Profitability is the engine that propels a company forward, and it is clearly linked to the prosperity of customers, employees and communities around the world. The profitable companies of the future will be the ones that align business goals with the needs of the world around them.

A 10-year milestone

Since Smurfit Kappa first started trading more than 80 years ago, sustainability principles have been an important part of our business model. And over the past ten years, we have made sustainability an explicit element of our business strategy. For us this makes perfect sense – we see it as a key differentiator for our Company, and directly linked to our profitability.

Our objective today is to be a globally admired business, dynamically delivering secure and superior returns for all stakeholders. As a customer-oriented, market-led company, customer satisfaction, personal development of employees and respect for local communities and the environment go hand-in-hand with our goal of creating value for shareholders.

With a presence in 34 countries, across 367 production sites and with 45,000 employees in Europe and the Americas, we can have positive impacts throughout the packaged goods value chain. Our sustainability vision is to lead in transforming the paper-based packaging industry in five key ways:

- Promoting healthy and sustainable forests
- Contributing to curb climate change
- Securing water availability
- Reducing waste to a minimum
- Engaging with people and communities.

Our priorities include sustainable sourcing of raw materials, minimising operational impact and helping customers and consumers shrink their environmental footprints. As we mark 10 years of progress in corporate sustainability, this report sums up how we performed in each of these areas in 2016.

Our progress in 2016

A highlight this year was achieving our sustainable forestry goal that over 90% of packaging supplied to customers would be Chain of Custody certified at the end of 2016. This provides customers with assurance and traceability and helps them meet their own sustainability and environmental targets, while enabling end-to-end transparency across the supply chain.

In line with our climate goal, we achieved a reduction of 22.9% in relative CO₂ emissions compared to 2005, bringing us closer to our target of a 25% reduction by 2020. Beyond our 2020 target, we plan to set new, challenging reduction targets to help deliver against the global climate commitments agreed in Paris.

Sustainable water management is vital for our business and we are committed to deploying industry-leading, best available technology. During 2016 we reached a reduction of 31.9% of our relative COD (Chemical Oxygen Demand) discharge compared to 2005, against a target of a 33% reduction by 2020. In addition, we continued our investment programme in world-class water treatment facilities.

Preventing waste is a guiding principle of the circular economy and one that continues to be a strong focus for Smurfit Kappa. Our goal is to remove all avoidable production waste and limit waste sent to landfill by closing loops at an individual mill level. This is a continual theme in our mill system.

Circularity, innovation & inclusiveness

Nature is both our source of raw materials and our inspiration for a circular economy. We aim to replace the natural resources we need in production, reuse materials wherever possible and involve stakeholders as we develop a closed loop system.

In our view, this circular business model gives us a competitive advantage, and is essential to our future success.

Seeking innovative solutions to evolving customer needs and tough environmental and social challenges ensures that we, and our customers, operate at the cutting edge. Our strategy is to link data, engineering and creative thinking to innovate in every part of the value chain, from packaging to our supply chain and processes.



Circularity

Follow this icon for case stories on circularity



Innovation

Follow this icon for case stories on innovation



Inclusiveness

Follow this icon for case stories on inclusiveness

People are at the heart of our operations. We want to take an inclusive approach to all those whose lives we impact, from the people we employ directly or indirectly to the communities where we are located. This means fostering a company culture that supports and rewards proactivity, creates a healthier and safer workplace, supports local communities and encourages transparency in all our interaction with stakeholders.

Our objective is to be an employer of choice and to attract and retain the best people. In 2016, we progressed with our follow-up on the MyVoice programme and in Health and Safety, Lost-Time Accidents frequency decreased by 10%.

Further positive sustainability notes in the year included our continued listing on the FTSE4Good index, Euronext Vigeo Europe 120 index and inclusion in Ethibel's sustainable investment register. We were also included for the first time in the STOXX® Global ESG Leaders indices – an innovative series of environmental, social, and governance (ESG) equity indices.

Challenges

We also faced some challenges. When we welcome new partners into our business through acquisition, we aim to align these businesses with our sustainability principles and practices, but this can take time. In 2015 we added seven companies comprising 18 operating sites – a relatively large number compared to previous years – to our Group. Aligning each one to our principles and practices is a continuing effort as we move forward in 2017.

Looking ahead

There is no doubt in my mind that environmental stewardship, circular business models and social responsibility are becoming core business imperatives. So I am immensely proud that these three elements have been at the heart of our business model since our Company started more than 80 years ago.

In the future, they will continue to be at the centre of what we do. Our 'Open the Future' brand promise means we are committed to working with customers to find new solutions to their sustainability challenges. This includes using the circular economy as a trigger for innovation and actively looking for opportunities to embed sustainability in every fibre, right along the value chain.

My goal is to create the right leadership culture so our Company – and sector as a whole – can embrace the vision of a circular economy and work with others to realise the shared benefits a sustainable future can bring.

I hope you will find the content of our Sustainable Development Report 2016 interesting and informative and look forward to your feedback.

sustainability@smurfitkappa.com

Tony Smurfit

Group Chief Executive Officer
18 May 2017



Overview



Our approach to sustainable business



Our priorities and performance



Supporting data



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Product highlights of 2016

We offer more than just packaging

Winners of the Red Dot Design Awards 2016

For more innovative packaging solutions that Smurfit Kappa can offer, please visit: www.smurfitkappa.com Products



Filemon is the name of a handy travel box for cats that also doubles as a cosy cathouse.

Cats love to hide in boxes. Smurfit Kappa Poland designed this stress-free habitat, with a changeable front and back, out of a simple sheet of corrugated cardboard.

Customised sustainable paper packaging protects eggs and catches the eye.

Consumers always open egg boxes to check the contents. Smurfit Kappa Germany found an alluring way to present eggs in an open panoramic display.





Fruit is fun when packaging turns into a toy fire department or princess castle.

This 3 kg apple basket, designed by Smurfit Kappa Germany, makes healthy fruit more attractive and offers kids a creative cardboard playground that can be personalised.




Appealing eco-style berry punnets fit into special collective trays for transportation.


SoFruPack brands and protects berries. The design by Smurfit Kappa Poland makes palletisation easier and the open bottom allows for better ventilation to keep the contents fresh.


Our approach to sustainable business


A wide-angle photograph of a large industrial factory floor. The ceiling is high with a series of bright lights. On the right, a worker in a dark blue uniform stands at a control station with a computer monitor and various controls. The floor is polished and reflects the lights. In the background, there are various pieces of machinery, including a yellow forklift and a large white roll of material. The overall atmosphere is clean and organized.




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Sascha Kruppa (L), Carsten Bielen (M) and Michael Stratmann (R) from Smurfit Kappa Zulpich, Germany.

Approach to sustainable business
How we create sustainable value

Sustainability creates long-term business value

As one of the world's largest paper-based packaging manufacturers we are keenly aware of our responsibilities. Sustainability is not an add-on to our way of doing business, it is in every fibre.

Summary

- Fit-for-purpose packaging helps to create material efficiency throughout our customers' supply chains
- We demonstrate sustainability by being the industry leader in transparency and detail
- We work with our customers to develop sustainability through innovation, strategy and processes
- Paper-based packaging has the highest recycling rate of all recyclable packaging

Why packaging matters

People need food, clothing and household goods for their daily life. Consumers and businesses need their goods to be delivered securely, safe from damage or theft, and this demands robust packaging solutions. A package is also a medium to communicate its contents to the consumer.

Paper-based packaging offers a versatile and responsible solution for manufacturers, retailers and consumers. In comparison to alternative recyclable packaging materials, paper-based packaging has the highest recycling rate. Wood fibre is a renewable raw material and the same fibres can be recycled up to eight times before new virgin fibre is needed.

Our packaging helps to reduce waste. According to FAO 20-50% of food in developing countries becomes waste in its supply chain simply because of no or poor packaging. The figure is only 3-5% in developed countries due to fit-for-purpose packaging which ensures products are transported safely to consumers and businesses.

It is our responsibility to use resources efficiently and produce our packaging solutions as sustainably as we can, not only in our own operations, but in those of our customers and suppliers. We achieve this through continuous research, putting facts and data into practice and delivering innovative packaging solutions, ensuring sustainability is integral to our strategy and operations.

Sustainable value-chain is our business

We believe that sustainability creates business value: sustainability is part of our competitive advantage. To continue operating, we must ensure that our current strategy is not only sustainable for Smurfit Kappa, but for all our stakeholders.

Active collaboration with our customers and suppliers can grow businesses sustainably throughout the supply chain. By reducing the use of raw materials and designing innovative packaging solutions, we offer a more sustainable package to our customers, helping them to deliver their sustainability targets.

Our investors are interested in long-term profitable businesses. Diligence in corporate environmental and social responsibility are key elements of the decision making process when selecting companies for investment.

Increased consumer demand will stimulate the growth of paper-based packaging's market share. Surveys (CEPI) show a growing awareness of environmental issues among consumers. For instance, more than 80% of European consumers prefer paper-based packaging.

Eco-Design fit for purpose

We work with our customers to produce innovatively designed and sustainably sound packaging solutions.



Overview



Our approach to sustainable business



Our priorities and performance



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Our approach to sustainable business How we create sustainable value continued

Structuring safety during a rebuild

During the rebuild of a paper machine at Smurfit Kappa Roermond, at least 25 external contracting parties per day worked on site, represented by 350 highly-skilled workers with 14 nationalities. In combination with continuing production at the site and employees from Smurfit Kappa itself, this situation presented a significant challenge from a safety perspective.



Jos van Cruchten and Henk Oitmann knew what they were getting into. Prior to the rebuild in February 2016, they contacted other Smurfit Kappa locations that had coordinated rebuilds in recent years. Once informed, they formulated their own set of specifications to ensure safety, dubbing the project Aethon. 'To be in complete control we decided to formulate an all-encompassing integral plan stating in detail who does what and when coupled with related safety issues,' says Oitmann, Head of Maintenance & Energy.

Involved and focused

Working with 25 external contractors, 15 of whom had never worked on-site, was a challenge in itself. 'Most people had never worked at our site, so did not know the rules or risks of our continuing production', adds QHSE Manager Van Cruchten. 'We formulated instructions to raise awareness of potentially unsafe situations, and provided insight into their temporary working environment. A Code of Conduct was created specifically for the contractors and all people involved received a Safety Guide.

Furthermore, we put a lot of effort into the daily Toolbox meeting to keep everyone involved and focused.

160,000 hours of labour

Special attention was given to working at height, on-site collaboration and fire hazards. To ensure safety, a team of 24 scaffolders was appointed to service all contractors. Having to first dismantle the old paper machine was a major complicating factor, as it meant that order and tidiness were the number one priorities for safety. Two huge cranes in the hall produced over 10,000 crane movements during the rebuild that lasted seven weeks and involved 160,000 hours of labour. The total investment in the new paper machine was €40 million.

Safe and sound

The rebuild of the PM1 was successful in many ways, including safety. Van Cruchten states 'At the start someone dropped a hammer on his little finger and another person bumped his nose, but we are proud to say that no serious accidents occurred. Our daily meetings were a key contributor. Every day we went around the contractors, looking back at the previous day and forward to the upcoming 24 hours.' Oitmann concludes: 'Thanks to our integral planning, we managed to create a great team spirit and felt in control throughout the project. We are very proud of all the people involved who managed to complete the rebuild in just 49 days in such a safe manner!'



The global impact of climate change is more and more apparent, and the efforts of companies and governments to minimise and even reverse its effect is becoming more explicit. It is our duty to constantly evolve to meet this challenge. We want to maximise efficiency in resource-use and thereby reduce the pressure we put on the environment. The transparency and detail we offer to our stakeholders is industry leading, it guides the way we do business throughout our own operations, and those of our suppliers whilst advancing sustainability in the businesses of our customers.

Our most fundamental operational resources – wood based fibres – inspire a circular business model. When managed sustainably they enable global carbon management; from the forests that capture atmospheric carbon, to increased efficiency in bio-based energy. When we balance the use of virgin and recovered fibres as our raw material, we maintain a positive balance of raw material circulation.

Holistic approach to sustainability

Smurfit Kappa does not view sustainability as 'nice-to-have'. In our integrated approach, sustainability is seen as the future of our business. We strive to be among the most sustainable paper-based packaging companies globally. Sustainability stimulates innovation and creates new customer demands.

We use sustainability as a lens through which to focus our innovation, strategy and processes. Instead of merely mitigating the risks of climate change and resource inefficiency in our business, our ambition is to be a sustainability leader and partner of choice to our customers.

Integral part of business strategy



According to the UN Global Compact-Accenture CEO Study on Sustainability, CEOs believe sustainability is essential to their business strategy, and 88% of investors see sustainability as a route to competitive advantage. For customers and investors, it is vital we demonstrate a tangible link between sustainable business and corporate value. Our sustainability efforts drive competitive differentiation which in turn boosts brand value and growth.

Smurfit Kappa has integrated sustainability metrics into its business strategy and aligned them throughout its global operations. As a result, we know the effects of our sustainability strategy communicate the facts and figures stated in this report. This enables investors to understand Smurfit Kappa's sustainability accelerators and forecast the effects of sustainable performance on our business.

Approach to sustainable business
Delivering sustainable value

Smarter sustainable solutions

Sustainability drives what we do and how we do it, creating value for our business and the communities in which we operate.

Summary

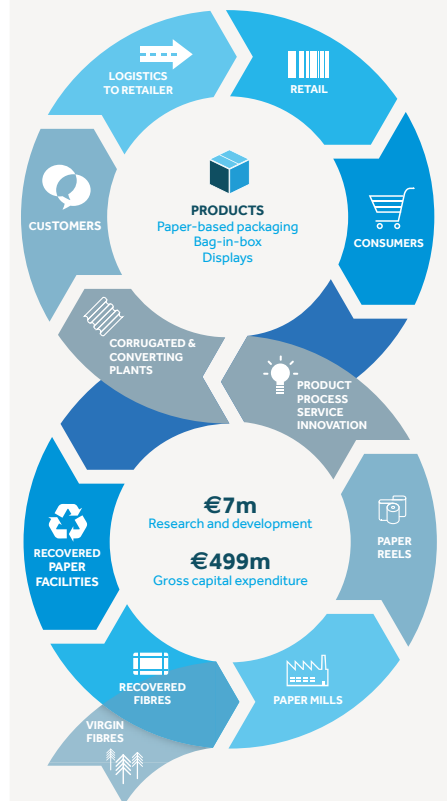
- Our circular business model is inspired by our renewable, recyclable raw material
- We offer our experience to our customers developing solutions with us, in adding value by using our Innotools
- Innovation is used to minimise waste and optimise use of materials
- We promote sustainable forest management through our fibre supply chains

Holistic approach

By examining the entire supply chain including packaging, transport, storage and product presentation, we can find significant sustainable improvements more effectively than when each step is considered in isolation. Sustainability runs across all aspects of our operations in three ways: driving innovation, embedding circularity and doing it inclusively.

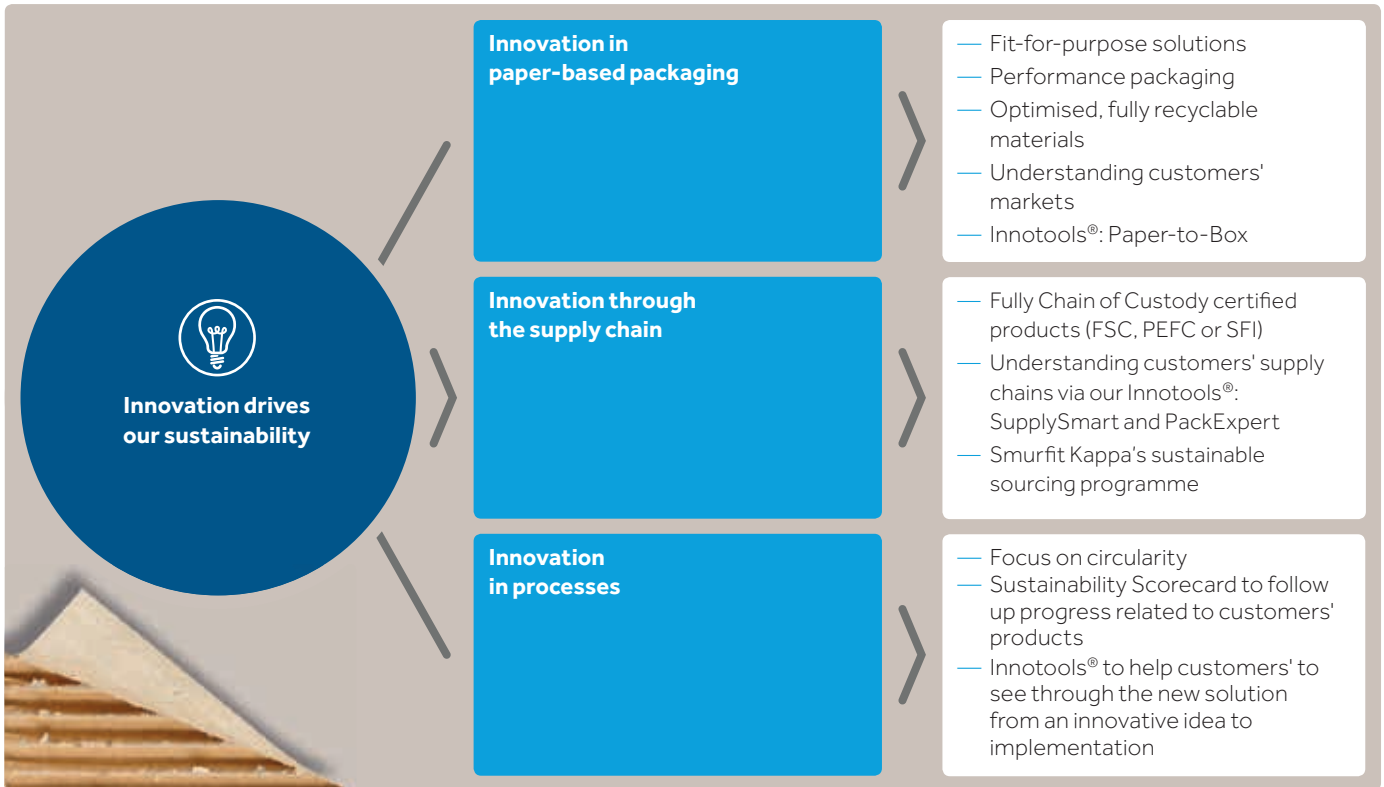
Our holistic approach starts with our business model, which itself is circular. The raw material used to make our products is renewable, and returned to the process after it has been used. We work closely with our customers and are not just interested in selling packaging to them. Rather, our business lies in the solutions we can offer, adding value to their supply chains. Finally, our people provide a wealth of expertise, innovative ideas and links to the world outside Smurfit Kappa. When our employees thrive, Smurfit Kappa and its stakeholders thrive with them.

Circular Business Model



Understanding our business environment enables us to increasingly integrate in circular economy and driving sustainability in all areas of our value chain.

Smarter sustainable solutions



Driving innovation

Innovation drives how we operate – from analysing customer challenges to understanding specific markets and finding the right solutions. Fundamentally, to link engineering-based thinking with creative solutions to deliver flexible innovation throughout our operations. Innovation is needed in product and process development, and is also vital when analysing a customer's supply chain. We examine the total impact of our customer's value chain, and instil sustainability.

Innovation at Smurfit Kappa starts with facts. For a decade now, we have collected and published sustainability data from our own operations. This information gives us transparency which we combine with continuous research, analysing customer challenges and understanding specific

markets. This inspires creative approaches, which are put into practice through packaging solutions, processes, and supply chain solutions.

We help our customers use new solutions, delivering shared value from an innovative idea to implementation. We do this through our web-based suite of design software, Innotools: Innobook, Paper to Box, Pack Expert and Shelf Viewer. These tools are available for customers, allowing a robust evaluation of their supply chains. In addition, our sustainable virgin and recovered fibre packaging minimises resource use, and reduces the environmental footprint of our customer's product.

Offering tailored packaging fit for purpose is the core of our **eco-design**. We begin by examining the entire packaging concept of our customer's product and aim to optimise primary and secondary packaging delivering efficiency savings in transport, storage and display. Throughout, our objective is to drive solutions through the supply chain, such as understanding changing customer preferences, demographics, regulatory developments, and changes across our competitive landscape.



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Impact of our products

Direct impact

Indirect impact



Reduce

Ensuring that resources are maximised and waste materials minimised by offering fit-for-purpose packaging solutions that optimise packaging materials. Where possible, we produce lighter grammage papers which require less fibres.

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 investment in measures to reduce fossil CO₂ emissions and investment in further energy efficiency.



Reuse

Ensuring that we reuse resources in our production wherever possible. For example, using the organic by-product of our production process as biomass fuel, 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.



Recycle

Ensuring all paper-based packaging manufactured by Smurfit Kappa can be recycled.

We continually find ways to recycle the metals, plastics, wood and other non-paper components separated from the recovered paper that is delivered to our mills.



Recover

75% of the raw material we use consists of recovered fibres.

We close loops and create circularity in our energy production through recovering the high energy value of any by-products wherever possible.



Renew

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 Chain of Custody certified by an internationally accepted forest management standard such as, FSC, PEFC or SFI.



Closing loops

Our ambition is to use a circular economy business model – a closed-loop system. This means ensuring our operations are restorative. It involves replacing the natural resources our production needs as well as reusing those resources in the best way possible, whilst collaborating with our stakeholders to find synergies. Increasing resource productivity through a circular model of production and consumption is an important contributor to economic competitiveness.

Ultimately, operating a closed-loop system is good business practice. For Smurfit Kappa, this means working with 100% renewable, sustainable primary raw materials which are then recovered for recycling. It also involves innovating to find new and alternative uses for non-paper materials that we receive unwantedly with the recovered paper. Of these materials – for example metal, plastic, textiles, wood and sand – approximately 42% are currently recovered elsewhere, with the remaining material still sent to landfill. We also use organic by-products of our production process as biofuel, or use material separated in the water treatment for the paper-making process.

We also close the loop by partnering with other sectors. For example, our virgin paper mills extract turpentine and tall oil during the virgin paper production process which can be used as raw material in the chemical, medical and pharmaceutical industries.

Forests themselves are a closed loop, from which we can positively benefit when using them sustainably. They are fundamental for both local climate and water cycles and, when managed sustainably, they provide raw materials for industry and employment. Within our industry we have pioneered full Chain of Custody certification, enabling us to drive a sustainable loop for our raw materials.

Inclusiveness

People are at the heart of our operations. This includes the people we directly or indirectly employ and other people whose lives we impact. As an employer we want to be authentic and foster a company culture that supports proactivity in, for example customer satisfaction, innovation, improving processes and a healthier and safer workplace.

We include our employees as follows:

- **Align:** We want to align our employees behind a strategic focus to maximise value and innovation for our customers and to deliver operational excellence and results. We do this through training, globally aligned approaches such as Innotools, a focus on capabilities, and health and safety
- **Empower:** We empower and develop our people; we also inspire and engage our people in change, and value diversity
- **Inspire:** We are authentic and consistent across our global and local activities. We always support our people to embrace a culture of learning.

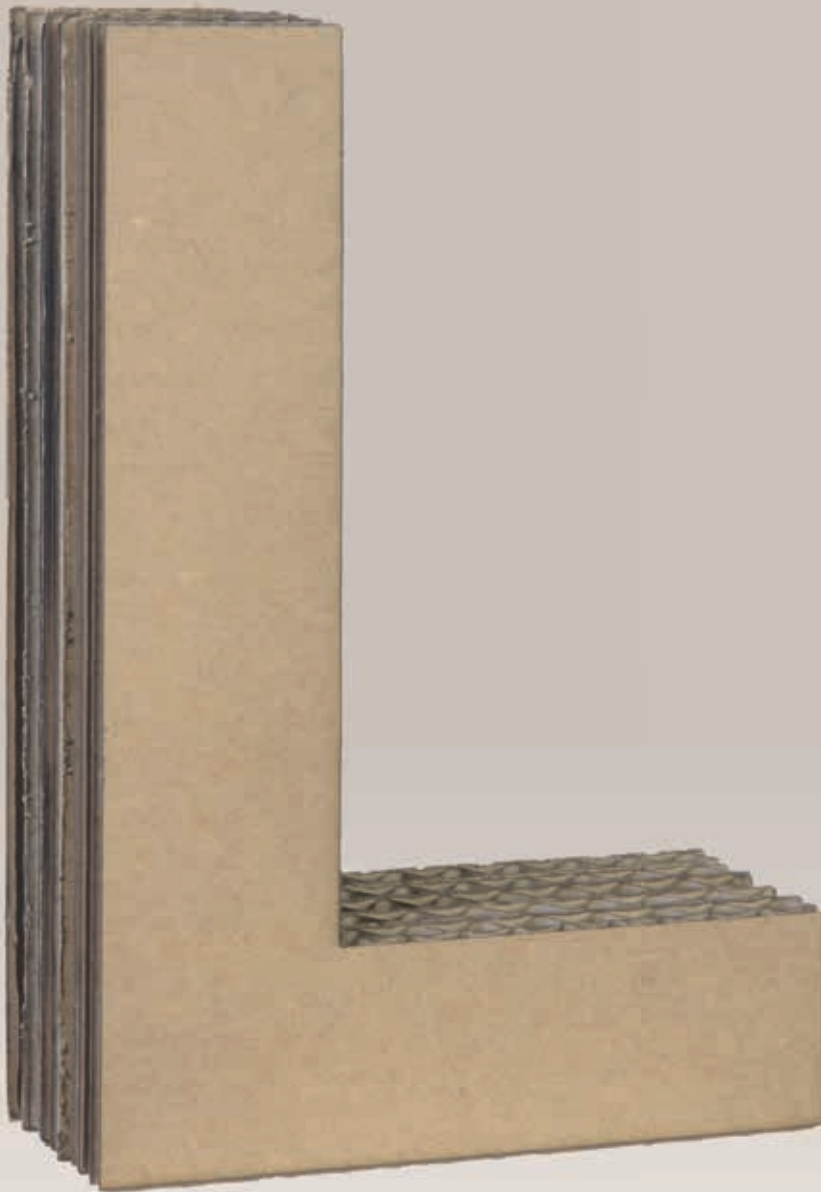
We make it our responsibility to engage in the communities in which we are located and strive to be viewed by them as a good corporate citizen. For example, through our foundations, we promote and support initiatives in areas such as equal opportunities, education, basic care for disadvantaged children, health, safety and economic development. These activities empower people and help them improve their lives.

We are transparent about our activities, and our mills and plants have an open door policy for different stakeholder groups. Alongside our commitment to making social and community investments, we also support scientific studies on environmental and biodiversity issues.



Embracing Local cultures

We embrace local cultures and prefer to employ from the local community at all levels where feasible.



Stakeholder engagement in sustainable development

As a responsible organisation we provide opportunities for stakeholders to learn about and influence the way we do business at each stage of the value chain.

Summary

- To improve and innovate, we engage our customers, investors, employees, communities and suppliers
- We engage by: discussion, our 16 global experience centres, work with local industries and communities, and memberships of, for example, WBCSD
- Sharing knowledge and understanding stakeholders' sustainability goals keeps us relevant, and leads to lower environmental impact
- Through teamwork, safe working conditions, and awards for sustainable solutions, we ensure our employees are aligned with our goals

Stakeholder engagement

We seek stakeholders' opinions to assist our decision-making, and help us continually improve and innovate. The level of stakeholder engagement is based on the materiality of the issues important to them. Our key stakeholders are: customers, investors, employees, communities and suppliers.

Our sustainable value dimensions

We have a unique place in the paper-based packaging value chain. As a large consumer of raw materials, including wood fibre, we have a responsibility to influence how sustainable value is created through our value chain as well as create sustainable value for our stakeholders.

We support stakeholders in meeting their sustainability commitments by, for example, ensuring that our packaging is Chain of Custody certified (which helps to manage supply chain risks), or by innovations in reporting that better measure environmental footprint or social impact, and making them transparent for our stakeholders.

Creating sustainable value benefits for our stakeholders means we must enable these benefits to flow – from requiring high standards of sustainability in our supply chain to supporting customers in reducing their carbon footprint through right-weighted packaging.

Our engagement deliverables

Through continual multi-level engagement with our customers, investors and employees, as well as other stakeholders, we can determine which issues are most important to them.

This multi-level engagement includes: organising meetings and round table discussions with our stakeholders on sustainability; participating in discussions within our industry as well as cross-sectors through our memberships at CEPI and WBCSD; participating in CDP, DJSI and FTSE4Good surveys and benchmarking against UN Sustainable Development Goals.

Our holistic approach ensures:

- **Relevance:** We remain in constant conversation with our stakeholders to ensure we understand their sustainable business drivers and support them to expand their capabilities
- **Influence:** We value and listen to the opinion of our stakeholders and share our experience and best practice from working with the wide range of suppliers and customers in our value chain
- **Value:** To ensure we are delivering the maximum sustainability value for all our stakeholders, it is paramount that we understand the sustainability drivers throughout our value chain
- **Affect:** We share knowledge and expertise with our stakeholders to increase our understanding and find sustainable solutions. We do this through training courses, round-table discussions, and gatherings including awards and events such as partnership debates.

In the table overleaf, we introduce the ways in which we collaborate with our stakeholders in our three focus areas: circularity, innovation and inclusiveness.



Approach to sustainable business
Our stakeholders and sustainable value continued

Our stakeholder engagement

Customers

Investors



Circularity

Working in a circular business model means involving our stakeholders at all stages and adding value to each one.

Smurfit Kappa's customers can benefit from our circular integrated business model which helps us develop fully recyclable packaging reducing the total environmental impact of the final product delivered to the consumer.

Increasingly, our customers' objective is to use packaging solutions that help them to reduce waste throughout their supply chain. Smurfit Kappa collaborates with its customers to understand their packaging needs, supply chain challenges and logistics issues to find the best packaging solution for each situation.

The effects of our circular sustainability strategy can often be directly shown in terms of lower costs, better efficiency, less waste, and increased revenue.

Furthermore, Smurfit Kappa's sustainable approach to business helps us reduce a range of environmental, regulatory, and health and safety risks to our operations.

The practical impact of this ranges from reduction in our exposure to an increasing price of carbon, to minimising time lost to safety incidents.



Innovation

Creating a business environment that enables innovation ensures that we and our customers operate at the cutting edge.

We offer holistic 'fit for purpose' eco-design packaging with a low environmental footprint. This is accomplished by collaborating with our customers and being innovative to add value. This means developing optimised packaging solutions by working with measured data and latest research insights. Our Innotools such as Paper-to-Box and PackExpert help us to use this data.

It also means that we need dialogue with customers to fully understand their challenges. More about solutions originating from these discussions can be found on pages 14 – 15.

Every two years our innovations are judged by stakeholders at awards ceremonies in Europe and The Americas.

A truly integrated sustainability approach makes it possible to quantify the results that arise from sustainable innovations.

This is crucial to be able to continually invest in further improvements, to attract outside investments, and to prove that sustainable innovations do not only require substantial capital, but can also deliver a very attractive return on investment.



Inclusiveness

Our approach is to be inclusive to all of our stakeholders, from the people we employ to the communities where we are located and from suppliers to our customers to deliver innovative and circular solutions.

To successfully drive sustainability means ensuring our packaging, and packaging innovation, becomes available to our customers.

We share our collective knowledge through a network of 16 experience centres, and make our expertise available for our customers so that we are able to help them with their sustainability strategy and goals.

Our organisation leverages global expertise to local customers and scales up local insights to a global level.

For example, we partner with customers and suppliers to streamline supply chains, reducing fossil CO₂ emissions and general waste. We also, use our technology leadership in the industry to drive sustainable innovation.

Ensuring we comply with the highest sustainability standards minimises reputational risk to our business, our customers and our investors.

Employees

The continuous development of our employees illustrates how we evolve as a company.

We support them to fulfil their potential and widen their career prospects in our global, culturally diverse organisation.

This helps employees to anticipate and meet changing market demands and deliver exceptional and sustainable performance.

We offer a possibility to transfer roles, responsibilities and geographies, enabling a circulation of talent, skill and ideas.

Smurfit Kappa is an industry leading business where capable people can make a real impact. This is the reason why we want to attract the best talents and give them the opportunity to develop themselves and help shape the future.

The fundamentals – health and safety, rights and fair treatment, training and personal development, diversity, balance between performance, pay and participation – allow a working environment in which our people feel free to innovate, perform to their best capabilities and shape sustainable future.

At every level of our organisation we want our employees to be part of a team and fully engaged as a valued team member. Outstanding performances of employees are rewarded through Innovation and Sustainability Awards.

Our Group health and safety policies align with the internationally recognised OHSAS 18001 occupational health and safety system application. We aim for zero fatalities. In achieving this the entire workforce is involved from home to the workplace.

Communities

To promote sustainable societies, we are guided by two principles: research and creating win-win solutions.

Through both approaches we can understand or close loops, develop local business environments, and so positively impact the well-being of our surrounding communities.

We work with other local industries seeking win-win solutions for our waste and by-products.

This pan-industrial cooperation has delivered both financial and environmental benefits when these side-streams were previously going to landfill.

We involve people through local initiatives and high impact social programmes, encourage employee volunteering, and also make appropriate charitable donations. Across all our operations we strive to share value from our business growth with the communities in which we operate.

Communities also help us with valuable local knowledge to optimise our operations.

Suppliers

Sharing knowledge, experience and expertise on sustainability strategies with our suppliers, including our customers' strategies, we increase the sustainability of our complete value chain.

This helps us identify opportunities to further increase circularity and add value in both directions in the supply chain.

We encourage our suppliers to continually develop their products and processes.

An important area for innovation is where materials used by our suppliers can be more efficient and of sustainable origin. For example printing inks, starch and glue are food safe, easily soluble and highly efficient in use.

By testing new products from our suppliers before they come to market we contribute to optimisation of our suppliers' product developments.

Where possible, we endeavour to procure our products and services from local suppliers. These interactions between our operations and the local operations of suppliers provide support for local economies.



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Ethically and responsibly

We believe that sustainability must come from every part of our business. We have instilled our commitment from the boardroom to the factory floor, and throughout our operations.

Summary

- We aim for the highest ethical and legal business conduct
- Sustainability experience is shared with industry associations, such as CEPI, affecting public policy
- Policies on, for example, ethical business (the Code of Business Conduct), govern everyone working with us
- We contribute to environmental reporting organisations, for example CDP, and are signatories to UN Global Compact
- Our sustainable sourcing programme has a scope of seven key pillars from quality to continual development

Lead from the top

The Board and management of Smurfit Kappa support and strive for the highest standards of corporate governance and ethical business conduct. We believe this should be promoted from the most senior levels of the business, and must be fostered through the whole organisation.

Complying regulations and guidelines

It is Group policy to comply, as a minimum, with the relevant laws and regulations in each country in which we operate, and ensure that our employees are aware of this and conduct themselves appropriately. Reflecting this, during 2016 no material fines were imposed on the Group for any breaches of such laws and regulations.

To demonstrate our commitment wherever we can, we go above and beyond compliance with relevant regulations, adhering to the highest standards of reporting. Our sustainable development report is assured using GRI, currently the G4, standard.

In addition, each significant business unit is the subject of an external and independent financial audit conducted annually by the Group's external auditors. Most of our other business units are the subject of local statutory financial audits. We also have our own Internal Audit department which, during 2016, performed 88 detailed internal financial and IT audits.

This includes the completion of financial risk assessments of the Group's facilities which are carried out by accredited professionals within each country.

Demonstrating leadership

Our goal is to be the most sustainable paper-based packaging solutions company globally. The Board has overall responsibility for ensuring Smurfit Kappa demonstrates leadership within the paper-based packaging sector, promoting an actionable sustainable development agenda. To this end, our Group CEO sponsors the development and implementation of Smurfit Kappa's sustainability policies.

Along with sharing our sustainability experience with customers and suppliers, we believe it is important to share these and potential challenges within our industry and even our competitors. To be an example to our peers and competitors but most importantly our own employees, we have created policy statements in key areas of sustainability that are integral to improving Smurfit Kappa's performance. These policy statements cover Environment, Sustainable Forestry, Sustainable Sourcing, Social Citizenship, and Health and Safety issues.

Code of Business Conduct and corporate policies

The Smurfit Kappa Code of Business Conduct (the 'Code') applies to the Group's Board of Directors, officers and employees worldwide. We require all individuals, entities, agents, or anyone acting on the Group's behalf, to comply with the Code, which has been translated into 17 languages to ensure full accessibility.

The Code takes account of the following international conventions and codes:

1. International Labour Organisation (ILO) Declaration on Fundamental Principles and Rights at Work (core conventions).
2. UN Declaration on Fundamental Human Rights.
3. OECD Guidelines for Multinational Enterprises.
4. UN Global Compact.

The Code provides accessible and understandable guidance for each employee in every jurisdiction. It sets out our expectations from employees for compliance with local, regional and national law, adherence to ethical standards and commitment to quality and service.

Each Group company and its employees is required to apply the Code and abide by the laws and practices required for their industry by the jurisdiction in which they operate. The Code makes it clear that personal and professional integrity is essential to conduct business in an ethical manner.

During 2016, there was one significant incident reported, which the Group considered to be non-compliant with the Code of Business Conduct.

The Code is supplemented by policies covering areas relating to our operational and managerial practices.

We have also created specific policy statements in key areas of sustainability, which we believe are integral to improving Smurfit Kappa's performance. All our codes and policies are available on our website: www.smurfitkappa.com.

Benchmarking our performance

We are involved with many trade bodies to influence understanding and share knowledge on embedding sustainability throughout operations, including:

- Confederation of European Paper Industries (CEPI) – Group and National level membership. Smurfit Kappa's Group CEO is currently a board member
- European Corrugated Packaging Association (FEFCO) – Group and national level membership
- International Corrugated Cases Association (ICCA). Smurfit Kappa's Group CEO is currently a Board member
- Asociación de Corrugadores del Caribe Centro y Sur América (ACCCSA). Smurfit Kappa Dominican Republic General Manager is currently a member of the Board of Directors.

In addition, we are active participants in and signatories to many environmental reporting and sustainability organisations:

- CDP (formerly Carbon Disclosure Project)
- The Forest Stewardship Council (FSC)
- The Programme for the Endorsement of Forest Certification (PEFC)
- The Supplier Ethical Data Exchange (Sedex)
- The UN Global Compact
- The Water Footprint Network (WFN)
- The European Round Table of Industrialists
- World Business Council for Sustainable Development (WBCSD).

Our products meet all food safety standards, including OECD guidelines for Multinational Enterprises.

Influencing public policy for good

As a multinational organisation, our businesses are subject to the legislation and rules of the jurisdictions in which they operate. In that context, Smurfit Kappa adopts positions on a variety of matters material to our business, representing our positions to the parties concerned, either directly or through industry bodies such as the Confederation of European Paper Industries (CEPI), the European Federation of Corrugated Board Manufacturers (FEFCO) and the European Round Table of Industrialists (ERT). We also work closely with the Irish Business and Employers' Confederation (IBEC) and equivalent bodies in other countries.

At all times the people representing the views of Smurfit Kappa do so with reference to the Code of Business Conduct, and the local laws and regulations applying to the Group's operations. There were no significant criticisms of the Group in this respect in 2016. In line with the Group's Code of Business Conduct no financial contributions were made to political parties in 2016. No national government is a direct investor in Smurfit Kappa.

Modern Slavery Act

Smurfit Kappa is subject to the provisions of the UK Modern Slavery Act. In recognition of the nature and concern about modern slavery we are currently updating our principles and policies with respect to our employees and suppliers to ensure compliance. See also our Annual Report page 49.



Approach to sustainable business Corporate Governance continued

Supplier compliance

Sustainable sourcing is an integral part of Smurfit Kappa's sustainability vision and strategy. Our approach to sustainable sourcing goes beyond regulatory requirements. By working towards more sustainable supply chains in collaboration with our suppliers we can manage risks, cut costs, find innovations and sources of new revenues as well as add value to the Smurfit Kappa brand and the brands of our customers.

Sourcing of materials, goods and services represents the single largest cost item for Smurfit Kappa. In 2016, we purchased products and services such as raw materials, energy, transportation, maintenance and repairs, and investment goods, to the value of €4.9 billion. Our sourcing network includes suppliers ranging from small-scale local companies to large multinationals. In total, approximately 74% of our suppliers' deliveries can be classified as local.

To ensure we meet our commitments, a robust sustainable sourcing policy is required. Smurfit Kappa's Sustainable Sourcing programme includes a risk assessment of suppliers across the following areas relevant for delivering sustainable packaging solutions to our customers:

- Quality
- Hygiene and safety
- Order processing
- Manufacturing
- Continuous improvement
- Service and technical support
- Environment and sustainable development.

By focusing on these seven areas, we are able to mitigate risks and find opportunities in our five strategic sustainability areas – forest, climate change, water, waste and people – which enable us to:

- Deliver sustainability credentials
- Understand business continuity
- Focus on suppliers' processes

- Meet food safety requirements.

Our risk mapping shows that nearly all our strategic or important suppliers of key materials, goods and services are in the moderate to low-risk area.

Minimising risk of non-compliance

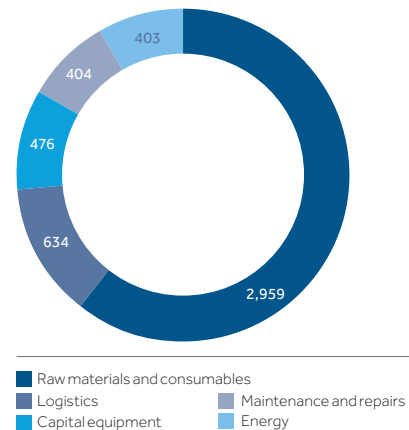
Our sustainable sourcing programme started in 2010, and we have audited 100% of our strategic suppliers. Auditing of suppliers ensures that the materials, goods and services we source are sustainable and meet our standards. In 2016, a total of 75 supplier audits were performed including both first time and re-approval audits. Of these audits, 60% were performed at strategic suppliers and 67% of the audits were performed at suppliers delivering key materials for our products (paper, starch, chemicals, glues and inks). 33% concerned important goods and services needed to produce and deliver our products.

Following an initial audit, we work with each supplier in identified continuous improvement opportunities. During 2016, 10 more suppliers delivering key materials as well as important goods and services have been audited for the first time under the sustainable sourcing scheme. 89% (92% in 2015) of all suppliers audited during 2016 scored satisfactorily, the remaining 11% (8% in 2015) will be compliant once they complete their defined improvement plans. Only 8% of suppliers audited in 2016 operate in the areas of high risk to us, and despite passing the audit, a closer monitoring programme is being implemented with these suppliers.

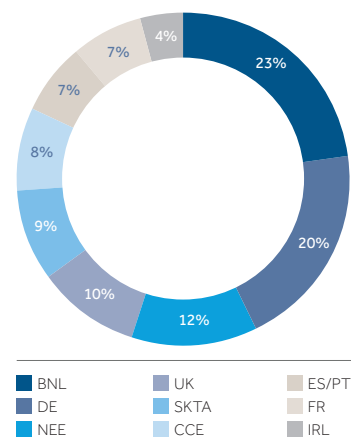
Improvement opportunities for these suppliers include hygiene and environmental management systems. The supplier audits also include questions on social governance covering UNGC, Sedex, CDP and GRI. We aim to increase the number of suppliers of key raw materials, goods and services who commit to the ten principles of the UNGC and report on social data to Sedex. 100 of our suppliers, mostly strategic, are currently listed as members of Sedex.

In 2016, we carried out a case study about using a rating tool to assess our suppliers with an ambition to widen the scope of our supplier assessment from strategic and important suppliers to cover the whole supplier base. The case study result shows that our own audit programme reaches the best coverage of issues for us and achieves a more credible assurance of the risk level in our supply chains.

Total sourcing costs
€4.9bn



2016 Suppliers audited by country



Il Gioco, inclusiveness is the name of the game

On May 21, 2016 the grand opening of a beautifully renovated and refurbished Italian school in Mantova drew a large crowd. The smiles on the faces of the children, their families, people from the non-profit organisation Fior di Loto and representatives from the local community and Smurfit Kappa could only mean one thing: Project Il Gioco is a success.

Literally translated 'Il Gioco' means 'the game' the name of Fiori di Loto's very successful new method to stimulate the development of special needs children with game based therapy. The therapy is offered to children with developmental issues, like autism and Down's syndrome. The advantages of the therapy were clear, but a suitable location was missing.

Local donation

Through one of the employees at Smurfit Kappa Mantova, the management of SK Corrugated Italy came in contact with Fior di Loto and learned about their special project.

A request for financial support was submitted at the Smurfit Kappa Foundation. After several visits and meetings with Fior di Loto, the Smurfit Kappa committee was very impressed with the approach and professionalism behind the Il Gioco project and provided a donation of €90,000.

Supporting children and families

Elena Franzosi, Human Resource manager SK Corrugated Italy, elaborates: 'It is so touching to see all the happy faces and to know that our help has really made a difference in the community surrounding us. The facility takes care of children after school hours. These vulnerable children and their families can really use our help. It is not only important to aid the kids in their development, but also to support their families who devote so much time and effort to empower their special needs children. Now parents can also enjoy some extra time to socialise, relax or work. It benefits everyone.'

Very special youngsters

The modernised location of Fior di Loto not only provides the new therapy, but it also expands the number of children who can be helped. 'Il Gioco is now a place where 25 special needs children can enjoy themselves and learn', says Elena. 'In the renovated building older kids can also be helped, expanding services from 6 to 11 year olds to teenagers.'



A special 'soft room' full of colourful mattresses for severely handicapped children has been provided. The new set-up brings out their talents and minimises developmental delays. It fills the youngsters with pride and stimulates social contact.'

A future for all

Cinzia Baù, director Fior di Loto, concludes: 'The Smurfit Kappa Foundation has made it possible to imagine a future for the children and families involved in our special programme. At the same time, the foundation has helped to create a rehabilitation centre in close cooperation with different organisations that help special-needs children.'



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Our approach to sustainable business



Our priorities and performance



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Our priorities and performance



Overview



Our approach to sustainable business



Our priorities and performance



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Manfred Hofer and Daniela Kremsmayer, Smurfit Kappa Swisswell, Switzerland

Our priorities and performance
Materiality

Materiality

Taking a strategic approach to understand the material sustainability issues for our business helps us to better understand how to identify opportunities, mitigate risks and influence the areas that impact the most.

To assess the sustainability factors within the business environment we operate in, we identify the most relevant environmental and social elements within our value chain, and consider the impact we have on them, or they have on us. These impacts can be financial as well as social and environmental, and can affect all our stakeholders including our communities, as well as ourselves through e.g. regulations, and our environment.

Following the steps below, we carry out a thorough materiality assessment every three years. The most recent was conducted in 2016.

Our process has three stages:

1. Assessing internal and external factors material to our business
2. Benchmarking factors material to our stakeholders
3. Stress testing issues identified with stakeholders.

This way we are able to limit the issues we report and measure only those on which we have a direct impact through our activities.

Internal and external factors

When identifying the most material aspects arising from our operations, we take account of internal and external factors. These include the issues identified in our overall

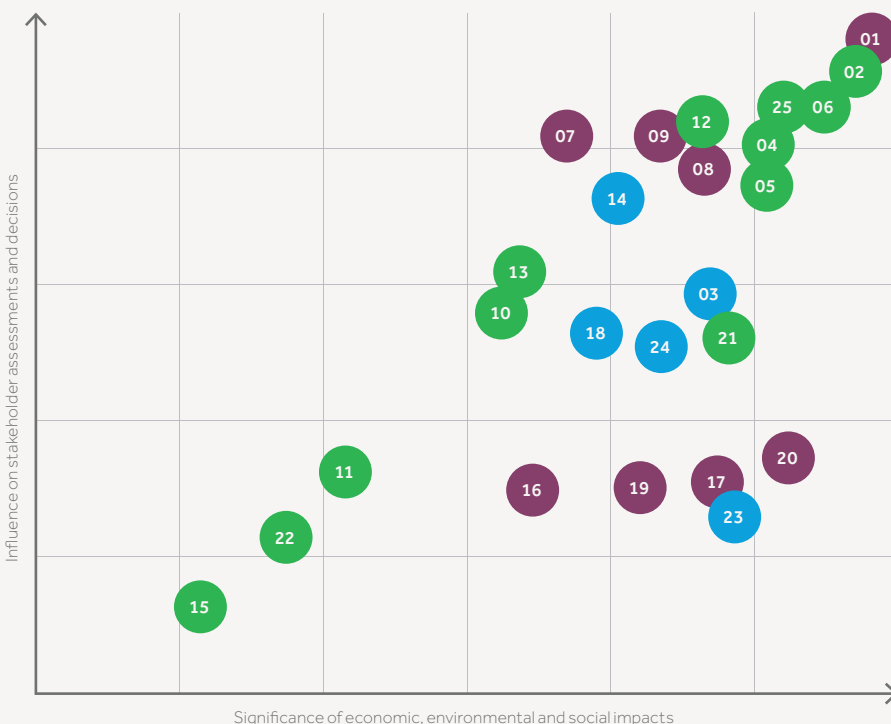
vision and mission, vision on sustainability, long-term strategy and the Code of Business Conduct, which governs Group behaviours and activities.

We review these material aspects and processes against external developments such as emerging regulation, environmental standards and approaches to certification. Additionally, we extend and refresh our knowledge by working with peers on collaborative projects. How we do this is explained in **Ethically and responsibly** (pages 22 – 24).

Stakeholder benchmarking

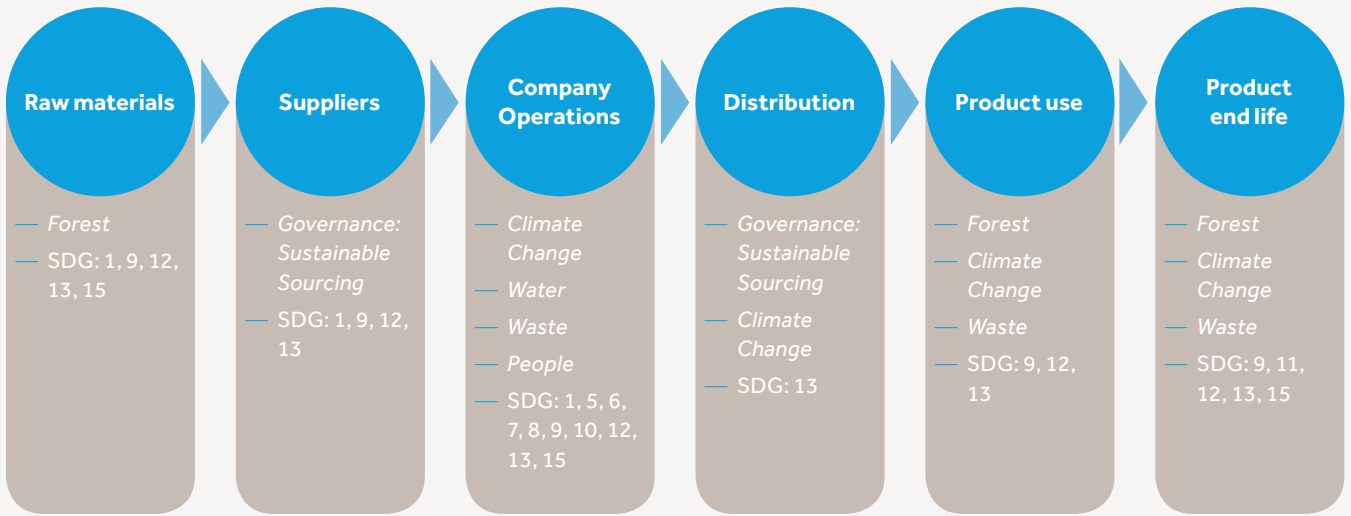
The material aspects identified as a result of the above analysis are then benchmarked against the views of customers, investors, suppliers and corporate peers. Using sustainability reports and websites, we identified 82 of the most relevant of these stakeholders. We review the materiality assessments undertaken by each of them, and test how frequently the material aspects they have identified match our own.

Material aspects facing Smurfit Kappa



- Environmental**
- 02 Energy use
- 04 Water intake and discharge
- 05 Waste
- 06 Sustainable packaging
- 10 Sustainable product development
- 11 Biodiversity
- 12 Climate change
- 13 Environmental awareness
- 15 Sustainable agriculture
- 21 Natural raw material sourcing
- 22 Transport and distribution
- 25 Sustainable forestry
- Social**
- 01 Health and safety
- 07 Diversity
- 08 Community involvement
- 09 Human rights
- 16 Career development and employee training
- 17 Well-being of employees
- 19 Employee benefits and remuneration
- 20 Labour relations
- Governance and compliance**
- 03 Governance, business ethics and value
- 14 Responsible sourcing
- 18 Compliance and transparency
- 23 Quality management
- 24 Food safety

Smurfit Kappa sustainability impact through value chain



Material topics in italics

Sustainable Development Goals (SDG):

- | | | |
|--------------------------------|--|--|
| 1. No Poverty | 8. Decent Work and Economic Growth | 12. Responsible Consumption and Production |
| 2. Zero Hunger | 9. Industry, Innovation and Infrastructure | 13. Climate Action |
| 3. Good Health and Well-Being | 10. Reduced Inequalities | 14. Life Below Water |
| 4. Quality Education | 11. Sustainable Cities and Communities | 15. Life on land |
| 5. Gender Equality | | 16. Peace, Justice and Strong Institutions |
| 6. Clean Water and Sanitation | | 17. Partnerships for the Goals |
| 7. Affordable and Clean Energy | | |

This enables us to establish which aspects are the most important to our key stakeholders.

Stress testing

Material aspects vary across countries and regions. For example, in Europe we found environmental aspects to have a higher priority, whereas in the Americas social aspects are considered more important.

Acknowledging these regional differences, the final phase of our materiality assessment involves stress testing each material aspect for its relevance and priority to our national and international stakeholders. We use a variety of techniques, described in **Stakeholder engagement in sustainable development** (pages 19 – 21), to gather feedback from our stakeholders, and use qualitative analysis to determine the significance and priority of each material aspect.

The materiality matrix on the previous page shows the outcome of our three-step assessment. To aid understanding, the aspects are grouped under three key categories: environmental, social and governance and compliance.

Although not all aspects highlighted in the matrix are of equal importance to Smurfit Kappa, they were considered in determining issues material to our business and our sector. For transparency, they are plotted in accordance with GRI guidelines.

In conclusion, five key strategic sustainability priorities emerge from the materiality analysis which provide the focus for our daily operations and reporting. Four of these topics are environmental, and one is social. All are relevant for compliance. Our five strategic priorities are:

- Forestry, including sustainable forestry, biodiversity and natural material sourcing
- Climate change, including energy use, climate change and transport and distribution
- Water, including water intake, use and discharge
- Waste, including discussions on avoiding waste to landfill and hazardous waste

- People, including health and safety, diversity, human rights, career development and employee training, well-being of employees, labour relations and community involvement.

To demonstrate the global context of the issues and their impacts we have matched those UN Sustainable Development Goals relevant to us with our material priorities throughout our value chain. This approach helps us to show where our risks and opportunities lie.

The material relevance of each priority is explained in the following sections. The topics directly related to governance or sustainable sourcing we have discussed in **Ethically and responsibly** (pages 22 – 24).

Our priorities and performance

Forest

Forest

At Smurfit Kappa, we produce paper from virgin and recycled fibres. In this chapter, we discuss our approach to sustainably sourcing them both in fibre sourcing and forest management at our own plantations and forestry operations.

Summary

- We achieved our target to sell over 90% of our packaging solutions as Chain of Custody certified
- All our operations are Chain of Custody certified supporting transparency in fibre supply chains
- Balanced use of virgin and recycled fibres are vital for a circular paper packaging industry
- We promote fibre recyclability, and material use (inks and glues) that supports this
- Our forests preserve biodiversity, and the starting point of our fibre sourcing is sustainable forest management certified by FSC, PEFC or SFI

Smurfit Kappa produces paper and paper-based packaging solutions for its customers. It is material to us and our stakeholders that the raw materials we use are of sustainable origin and that we communicate this in a transparent and credible manner. The forest sector is one of the major users of wood as a raw material and has a significant impact in driving sustainable forest management. Therefore, both the industry and Smurfit Kappa play a key role in ensuring resources are used in a responsible way. This means using virgin fibres from sustainably managed forests in combination with recovered fibres from recycled paper as efficiently as possible.

Throughout the paper production process there will always be a need for virgin wood fibres. Fibre can only be recycled approximately eight times before its quality becomes too poor to produce paper from. As a result, we must source virgin raw material from forests. We use both fresh wood fibres and recovered paper to produce virgin and recycled paper globally at a ratio of 25% to 75% respectively. Efficient use of our raw materials makes us a contributor to the circular economy, and to UN Sustainable Development Goal 12, Responsible consumption and production.

We believe forests can supply sufficient quantities of sustainable, renewable sources of fibre when managed well. By putting an emphasis on sustainable management at our plantations and forests, as well as demanding it from our suppliers, we can positively contribute to realising the following UN Sustainable Development Goals: decent work and economic growth (No 8), responsible consumption and production (No 12), climate action (No 13) and life on land (No 15).

Smurfit Kappa manages its own eucalyptus, gmelina and pine plantations in Colombia and Venezuela, and a smaller number of hectares of forest in Spain and France. We also procure wood for pulp through certified Chains of Custody from suppliers throughout Europe, including from Austria, the Baltic countries, France, Germany, Spain and Sweden.

Everything we do is subject to strict principles of sustainability and the highest standards of practice, to ensure sustainable forest management. We believe that this is best achieved through implementing sustainable forest management certification, and related Chain of Custody systems throughout the value chain from forest to end product. We hold our suppliers to the same standards.

Chain of Custody certified proof

Over 90% of our products are sold as certified according to FSC® or PEFC™ standards.



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Forest continued

Albert Heijn partnership optimises paper recycling

Every year Smurfit Kappa Recycling Benelux supplies some 1.2 million tonnes of recovered paper to Smurfit Kappa and other paper mills. A major part of this volume is collected from retailers, Smurfit Kappa's corrugating and converting operations, printers, households and other large scale users of paper. The collected paper is mainly recirculated at our paper mills which produce paper from the recovered fibres so the source material gets a new life.

'Our task is to make sure that our recycled paper mills have a continuous supply of quality raw material from the so-called urban forest', explains Ard de Haas, Manager Recycling Netherlands. 'For retailers, the collection of their waste paper should be as effortless as possible. Our challenge is to reliably facilitate this in synergy with delivering recovered paper. To be able to produce good quality paper from recycled fibres, contamination of recovered paper needs to be minimised. The longer the fibres that we can dissolve from the paper, the better the quality of the paper produced by the paper mills.'

Albert Heijn's circular economy

Albert Heijn, the leading retailer in the Netherlands (with also stores in Belgium) with over 950 locations, has the well-being of its clientele at the core of its

business. The retailer wants to be a good and responsible corporate citizen. Avoiding waste is one of the key focus areas in its environmental programme. 'Efficiently recycling our packaging materials and being part of the circular economy are important to us', emphasises Henk van der Spek, Senior Manager Returning Albert Heijn Replenishment.

Focus and efficiency

Albert Heijn used to utilise a rather complicated system involving an array of general recycling companies. 'Smurfit Kappa offered an alternative solution solely dedicated to paper', says De Haas. 'It enables us to focus efficiently on best practices in paper collection and at the same time manage an optimised raw material delivery to the paper mills.'

Van der Spek adds: 'Our collaboration has significantly reduced transport movements of the recovered paper and offers easy insight into the paper recycling route. It allows us to demonstrate that our discarded packaging comes back to life at or near our own shops.'

Transparency increases credibility

Albert Heijn started the paper collection optimisation pilot with Smurfit Kappa in November 2015. Even though it took some effort convincing the whole shop system to implement a new way of working, the ultimate test came during the Christmas period and convinced the last doubters. There was not a single hiccup, so, during the first quarter of 2017 the complete Albert Heijn Netherlands shop & DC network will implement the system. 'Our partnership results in happy customers at both ends of the supply chain and in transparency which increases credibility. That is key when working towards ambitious sustainability targets!', Van der Spek concludes.



Risks, challenges and opportunities

Sustainable balance of fibre use

Consumers and public sector organisations are increasingly aware of sustainable consumption and recycling of materials. The global demand for sustainably sourced wood fibres increases in step with paper recycling. Both offer risks and opportunities for the paper-based packaging industry.

As consumption increases, more paper and paper-based packaging is needed, especially in developing and emerging economies. Increased paper recycling has a positive impact on the fibre supply. However, using recycled fibre also reduces the quality of recovered paper and hence that of newly-made recycled paper. The use of wood resources therefore remains an imperative to guarantee ultimately the availability and the quality of paper, which creates its own set of obligations.

The opportunity for the sector is to find a balance between sustainable use of virgin and recovered fibres. Sustainable forest management practices and only using material from sustainable origin/Chain of Custody certified material, is the key to striking and maintaining that balance. The forest sector can still do much to improve its situation, as, according to the UNECE/FAO Forest Products Annual Market Review, only 29% of industrial roundwood is certified to internationally accepted forest management standards.

The paper-based product industry can also work to improve the quality and life span of fibres. The World Economic Forum Project Mainstream published a set of guidelines for improving the recyclability of paper in 2015, including guidance on the use of inks and glues that can be more easily removed from the recovered fibre, thus improving the fibre quality and increasing the recycling of paper.

The challenge comes with an opportunity to find innovative solutions. We need to move away from basic packaging, to solutions that consider the full packaged product's supply chain demands, and optimise use of recycled and virgin fibres in the most efficient manner. Smurfit Kappa's innovative tools help our customers to take full value of this opportunity. Communicating about the use of sustainably sourced, certified fibres, helps us to submit tenders and maintain, if not even expand, our customer base to include large, demanding, market leaders.

Finally, finding solutions to improve the quality of recovered fibres, strengthens the circular loop between paper-based packaging producers and the final users of the packaging. This means that the responsibility for keeping the fibres in the recycling loop is not only in hands of the paper industry but in all who participate in it. Smurfit Kappa's recycling operations have found new partnerships in retailers who are conscious of their waste and strive to find win-win practices, such as the collection of used packaging from their locations.

Wood-based subsidies and their effects on wood markets

The 2020 EU Renewable Energy Policy targets are supported by subsidy schemes; these increase the price and affect the availability of our raw materials. For the 2020-2030 period the target for renewable energy has been increased – participants are expected to procure 27% of their energy from renewable sources by 2030. The EU has called for an improved biomass policy to allow for fair competition between the various uses of biomass resources in, for example, the paper and pulp industries. This, in effect, supports our favoured concept of resource hierarchy, with policy support for the highest added value applications for fibre, such as producing paper, over lower added value applications, such as energy generation.

Regulation and certification

The EU and US have implemented legislation to tackle illegal timber in their marketplaces. As a company operating across European and American countries, we are subject to managing our wood sourcing in a manner that is traceable to legal sources, applying a due diligence system in our wood-based material sourcing. We believe that this is the minimum requirement for wood sourcing, and we place emphasis on voluntary forest certification, adding sustainable forest management requirements to the legal origin requirement.

For us, the best way to meet these requirements is to implement forest certification and Chain of Custody certification, providing traceability to the origin of the wood source. We believe that the three international forest management certification schemes – Forest Stewardship Council® (FSC), Programme for Endorsement of Forest Certification™ (PEFC), and Sustainable Forestry Initiative™ (SFI) – give the best assurance of sustainable wood material.

However, FSC and PEFC have also faced issues with the integrity of their Chain of Custody systems. To tackle this, both schemes have made efforts to improve their systems including revising their Chain of Custody and Controlled Wood standards, and creating platforms that increase transparency for certificate holders' data. As an active member of FSC International and PEFC International, Smurfit Kappa has been supporting these processes.

Our commitment to sustainable fibre

Our target is to source virgin fibres from certified, well-managed forests or at least of non-controversial origin, so that recycled fibres are traceable to the collection point. We require all the material to be delivered through a third-party verified, Chain of Custody certified supply chain. We accept FSC, PEFC and SFI certified wood, and the Chain of Custody systems at our mills and plants also cover recycled fibre sourcing.



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Credibility through third party certification

One of Smurfit Kappa's key focus areas is to assure customers that the fibres used in our packaging solutions come from sustainable sources. Currently, the most credible way to do this is to participate in Forest Management and related Chain of Custody certification. We take third-party certification very seriously, and examine it closely.

Forest Management and Chain of Custody certification are voluntary, market-driven mechanisms. Both promote sustainable forest management in commercial forests and plantations, then follow up the material trail through documentation to its origin. However, what does a voluntary, market-driven mechanism mean? It means that the forest and plantation owners commit themselves to implement practices that are stricter than required by law, and utilise a third party to verify it. The system is market-driven because customers can require materials from certified forests, and they are able to follow this up through a certified Chain of Custody.

Impartial Certification

Control Union Certifications is one of the auditing bodies certifying Smurfit Kappa's Chain of Custody management systems. James Schadenberg, Program Manager of their global network of certification experts and auditors, explains what the role of a third party verifier entails: 'Our task is to be an independent party that inspects and verifies whether an organisation complies with a certification standard. We are not part of the scheme owner, nor the certified organisation. Our role is to be impartial, and to adhere to the specific requirements of the standard.'

Quality Assurance

Through independent third party audits, sufficient assurance is given to safeguard a level playing field for all organisations pursuing certification. In simple terms, third party involvement eliminates the possibility of corruption in a system, and functions as quality assurance to all stakeholders. Smurfit Kappa has been working with Control Union since launching its forest certification programme in 2008. This includes certifying Smurfit Kappa's operations to FSC and PEFC standards in Austria, Belgium, Czechia, France, Germany, Italy, The Netherlands and Spain.

Company-wide Commitment

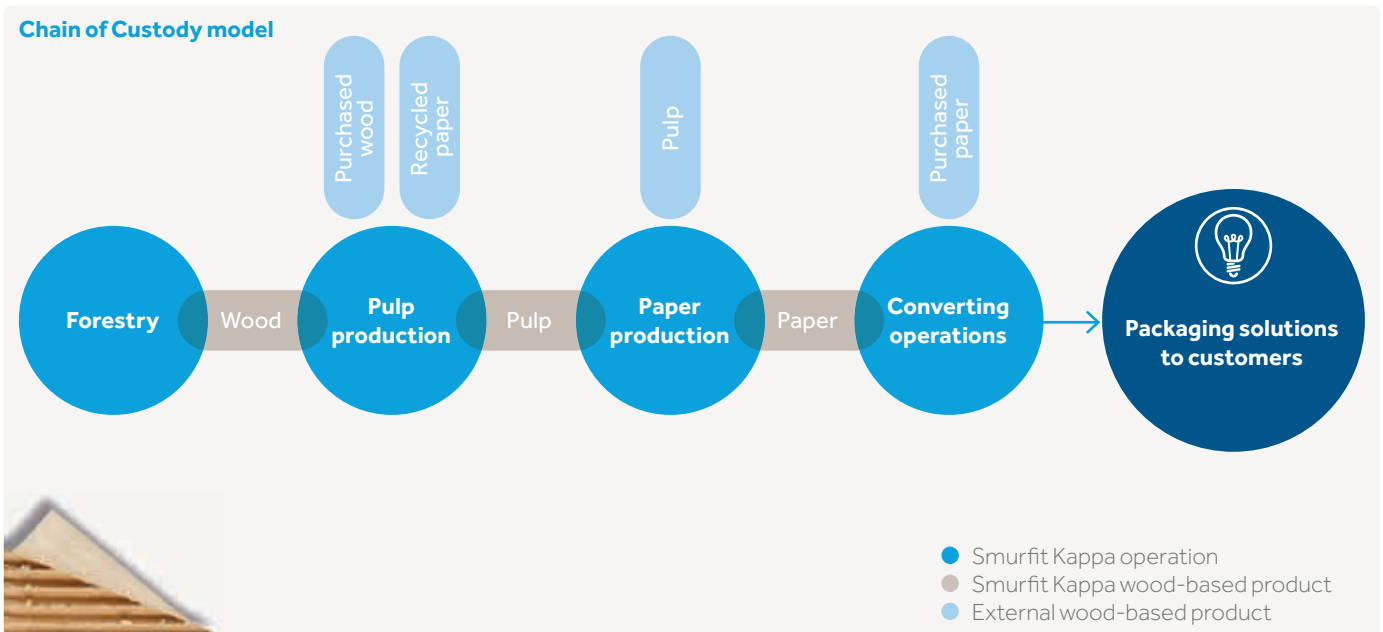
'The results of our periodic audits have shown good development through the years', says Schadenberg. 'Smurfit Kappa stands out in their technical understanding of their standards, and in their corresponding internal progress. The company has been quick to adapt its systems to changes in the standards, facilitated by a solid-functioning management system. Smurfit Kappa always tries to be ahead of developments.'



James Schadenberg

To illustrate the latest advancements, Smurfit Kappa has developed an internal audit tool, which helps to follow up on audits alongside its sites. This new tool will benefit the third party auditor as well. 'This is a great way to promote good practices throughout a company, show the commitment to your own targets and, as in this case, promote sustainable forest management in general', concludes Schadenberg.





The packaging products we deliver to our customers should, therefore, not only meet the above requirement, but also meet the commitments we make in our various policy statements (Forestry Policy, Code of Business Conduct, Social Citizenship, among others). Most of our commitments have been covered by the Chain of Custody certification standards. These concern all fibres and fibre-based products we use or manufacture, whatever the origin or form of the fibres.

A total of 59% of the wood used in the Smurfit Kappa mill system for producing virgin paper or pulp currently originates from forests that are certified under the FSC, PEFC and/or SFI schemes, and the remaining 41% is wood from non-controversial origin. This status has been risk assessed through our FSC and/or PEFC Chain of Custody system, and verified by a third party.

Smurfit Kappa's recycling operations handle some 4.7 million tonnes of recovered paper annually in Europe, and 1.8 million tonnes in the Americas. We have a network of 14 recycled paper depots in Europe, and 33 in the Americas, that supply recovered paper from municipalities, retailers, industries, and our own corrugating and converting operations.

Chain of Custody certification

Transparency throughout our supply chain vital to delivery of our sustainability commitments. We are committed to maintaining robust monitoring and third-party auditing of our supply chain, ensuring sourced fibre is compliant with our sustainability principles. While Smurfit Kappa does not source wood fibre from areas where the risk of deforestation is high, it is nevertheless an important issue that affects the reputation of the whole industry. The best practice to deliver our commitment is through forest certification, and related Chain of Custody certification.

During 2016 the availability of certified fibres at our paper mills reached a level that enabled us to produce some 91% of our paper as Chain of Custody certified, according to FSC, PEFC or SFI. The remaining 9% are non-controversial fibres, managed through the mills' Chain of Custody certified risk assessment systems.

The complete Smurfit Kappa paper and board mill system in Europe is Chain of Custody certified, under either one or both schemes we support in Europe (FSC and PEFC) since 2010. Since January 2015, all of our paper mills in the Americas are certified by FSC and/or SFI standards. This means we have reached a 100% production capacity with Chain of Custody certification for our paper and board production.

Our priorities and performance Forest continued

Effectively all our converting operations are Chain of Custody certified. With this complete coverage of both certified paper and board produced, and converting operations under Chain of Custody certification, we are reaching the highest possible level of packaging sold as Chain of Custody certified. We reached our target to sell over 90% of our packaging products as Chain of Custody certified at the end of 2016, a year behind target. We reached 74% at the end of 2015 and 90.1% at the end of 2016. The reasons for this delay were insufficient certified material supply from external suppliers and the necessary adaptation of internal IT systems.

Forest and plantation management

The Americas

Smurfit Kappa owns and manages 103,000 hectares (ha) of forests and plantations in Colombia and Venezuela, which provide almost all the virgin wood fibre we require in those countries. They are all subject to protection programmes managed by Smurfit Kappa based on the best sustainable development principles, promoting responsible use of natural resources alongside economic development and social inclusiveness.

We also conform to comprehensive legal, technical and environmental regulations set by local governments and international bodies, which are subject to annual review.

Colombia

Our largest forest plantation area is in Colombia. In total we own or manage approximately 68,000 ha, including:

- 43,000 ha of commercial plantations, of which 5,000 ha are partnerships with private land owners
- 22,000 ha of protected natural forest
- Just over 3,100 ha for infrastructure.

In our commercial plantations 59% of the land is occupied by pine trees and 36% by eucalyptus trees, while 3% is in process of replanting and 2% is dedicated to research.

Venezuela

Our forests in Venezuela are situated in the three western states. Totalling some 35,000 ha of forest and plantations, they include:

- 21,000 ha of commercial plantations
- 13,000 ha of natural forest
- 1,000 ha for infrastructure.

In our commercial plantations, 64% of the land is planted with short fibre species (eucalyptus and gmelina) and 30% with long fibre pine. The remaining 6% is used for research and development, including silviculture, plantation management, and forest protection activities.

Certification

Our Colombian forest management programmes have been certified by FSC since 2003.

Also our Venezuelan forests and plantations are managed to the highest standards. 31% of the plantations are certified to the FSC Forest Management standard, and 45% of the area is certified in compliance with FSC Controlled Wood standard.

Europe

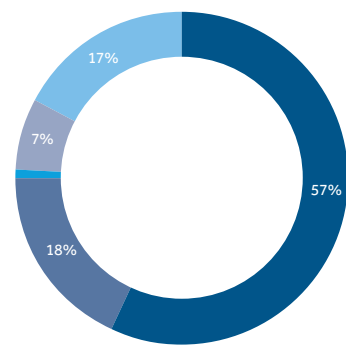
In Europe we offer forest management services through our wood supply companies in Spain and France. We also own some 600 hectares of forest in France and Spain. In both countries we follow local best practices for forest management, as certified by PEFC.

Our wood handling operations are Chain of Custody certified to FSC and PEFC standards, while our complete paper and board mill system has been certified since the end of 2010.

Conservation

Of the forest land owned by Smurfit Kappa in Colombia and Venezuela, 32% and 37% respectively is dedicated to protecting the sustainability of forests. This land helps to maintain the rich biodiversity of the area, preserving watersheds and conserving habitats and ecosystems.

Fibre origin 2016
All operations*



- Recycled pulp produced internally
- Wood pulp produced internally
- Market virgin pulp
- Virgin papers purchased
- Recycled paper purchased

*All operations include paper and board mills, corrugated board converters, sack plants.

Contributing to responsible forest management worldwide

'Sustainable forest management is a prerequisite for our business', says Lena Sammeli-Johansson, sustainability manager at Sveaskog, a Swedish company that supplies timber to the Smurfit Kappa Piteå paper mill. 'We work with a renewable natural resource and want to take good care of the terrestrial system and biodiversity, to conduct our business responsibly.'



Lena Sammeli-Johansson

Forests are renewable resources. Proper forest management enables harvested forests to grow back, and continue to play a vital role in global carbon and water cycles. Besides the environmental aspects, forests are also important for people in terms of income, recreation and well-being. Responsible forest management has many important dimensions, and Sveaskog, which owns some 14% of the Swedish forests, is keenly aware of this.

To broaden its offerings, the company also imports wood from the Baltic States and Finland. Through strict Chain of Custody requirements, clients are informed of the origin of their sourced wood raw materials.

Skills and Know-How

The focus of Sveaskog on nature's continuity is in the DNA of the company, and great attention is given to training and procedures.

'Through training we can make sure our people's knowledge is up-to-date, and they can stay on top of new developments regarding best practices in forest management,' says Sammeli-Johansson. 'We work with our own employees, but also with many individual entrepreneurs. Our training system caters to both, providing them with the skills and know-how to complete certification requirements for FSC and PEFC standards. Our educational approach consists of web-based training, and in-depth training in the field.'

Positive effects of certification

'Even though the Swedish Forest Act already has strict criteria, forest certification results in a higher sustainability level. In 1998 we were one of the first companies here to obtain a FSC-certificate. Since then, the state of our forests has improved significantly, and this development is visible all over the world. The extended framework that forest certification offers beyond legislation, helps us to focus on all three aspects of sustainability: ecological, social and economic. Certification stimulates us to talk about forest management with our stakeholders, and helps facilitate the multiple uses of forests. For us, forest certification and related CoC-certification, are of great relevance – they make us a part of the global story of improving forest management', concludes Sammeli-Johansson.



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To maintain the biodiversity and sustainability of forests in these areas, our guiding principles are to:

- Conserve natural forests under our stewardship, protecting and promoting species diversity, thereby sustaining ecosystems and contributing to the protection of water sources and habitats for flora and fauna
- Identify appropriate species and practices which increase plantation yields while protecting the environment
- Continuously and systematically develop research programmes to preserve and enhance soil productivity.

Plantation forestry offers a means to produce sustainable fibres for paper production in an efficient manner. In our Colombian and Venezuelan holdings this is done in carefully selected areas, avoiding valuable ecosystems and protected forest areas.

Protecting and promoting biodiversity and natural habitats is an important part of our approach. To achieve this, we work with third-party institutions and through our own research centre in Colombia.

In Colombia we have worked with three local universities – Cauca, Valle and Quindío – since 2009, studying the flora and fauna populations in and around our protected and planted forests. Examples of our work include:

- A partnership with the Biology Programme of the Natural Science School of Universidad del Valle, started in 2013 to study the 'diversity of birds, mammals and plants in the natural forests of the forestry nucleus in Sevilla'
- A literature review, carried out in 2014, which aimed to inform conservation planning by identifying areas of special biodiversity close to the company's plantations and natural forests in the Santa Rosa-Pereira core areas.

During the past four years, studies developed by Smurfit Kappa identified 1,132 species in our forests. This includes 582 trees, 480 birds, and 70 mammals, of which 41 species are to some extent endangered. It is clear to us that our plantations and the neighbouring protected natural forests form important wildlife corridors that contribute to species conservation in the Andean ecosystem, and therefore need careful management.

In addition to our work in biodiversity and nature protection, we work in close cooperation with the communities neighbouring our plantations. In these communities we endeavour to engage local people in the decision-making processes. This is especially important in Latin America, where indigenous people may have rights to the land and local communities' livelihoods are often dependent on the forests.

Forest

Scope

This strategic priority covers forest management, biodiversity, fibre sourcing and the communication of how we use sustainable fibres through certified Chains of Custody. Our reporting encompasses all our own operations and products.

Commitment #1

All fibre produced and/or purchased is Chain of Custody certified under FSC, PEFC or SFI.

Timeframe: Target to be reached by 2015

Progress made: We reached the target in 2014 and continued to produce and purchase 99.7% of our fibres under fibre origin management systems that are Chain of Custody Certified in 2016. This is within our margin of 1% variation.

Commitment #2

Over 90% of our packaging is labelled as Chain of Custody certified under FSC, PEFC or SFI.

Timeframe: Target to be reached by 2015

Progress made: We fulfilled the commitment at the end of quarter 4 2016. The delay was caused by having an insufficient supply of certified material from external suppliers and the necessity to adapt internal IT systems.

Our perspective

Independent third-party certification is the most reliable means to promote sustainable forest management and combat deforestation. We manage our forest holdings based on the following three sustainable development principles:

1. To promote economic growth
2. To use natural resources responsibly
3. To foster social citizenship initiatives wherever our plantations and forests are located. We have certified all our plantations and forest holdings to FSC and/or PEFC standards where practical.

We certify our own Chains of Custody according to FSC and PEFC standards, covering both virgin and recycled fibres. We expect our suppliers to be able to deliver fibrous raw materials through complete FSC, PEFC or SFI certified Chains of Custody.

The recyclability of paper fibres is an important contributor to the sustainable nature of our products. Recovery of used paper is a global necessity, and policies should stimulate effective paper recovery systems. For Smurfit Kappa, communicating the sustainable nature of our products is important. This is why we included the sourcing of recovered paper in the scope of our Chain of Custody certifications.

FSC, PEFC and SFI currently offer the most reliable standards that deliver credible, sustainable, fibrous raw materials.



Right-weighted paper packaging

Our approach to virgin and recycled paper offers quality, performance, and product safety without compromising sustainability.



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Climate Change

Climate Change

Climate action remains the key topic within environmental sustainability for civil society and business. Smurfit Kappa is contributing towards curbing climate change, aiming at low carbon, efficient energy production.

Summary

- From 2005-2016 we achieved a reduction of 22.9% of our relative CO₂ emissions from paper and board mills
- Paper production is energy-intensive, but use of by-products, makes us an efficient user of caloric resources
- In 2016, the fuel mix of our paper mills was 48.5% biofuel based, an increase from 37.3% in 2005
- Energy efficiency is supported by Combined Heat and Power plants, energy reduction by investment, new technologies, and shifting to CO₂-friendlier fuels

Paper production is energy intensive and the cost and supply of energy are key decision factors for our sector. Our industry's challenge is to reduce the energy intensity of production and move, where economically feasible, from fossil fuels to renewable sources, including biomass.

Use of energy, carbon footprint and GHG emissions are all material to Smurfit Kappa's business. We also recognise that these issues are also significant to wider society, and, indeed, a factor closely followed by our stakeholders. The UN has singled out the issue by giving Climate Action a Sustainable Development Goal (No 13) of its own. Our industry can contribute to this goal in multiple strategic ways.

As a company we strike a balance between using wood (and recovered) fibres for the paper production, and using residual wood fibres such as sawdust, bark, black liquor, and fibre containing sludge, for bioenergy production. By the nature of its processes, the paper producing industry is one of the most efficient users of both wood and energy. For energy generation, we only use wood biomass that cannot be used in any higher value production. In addition, we reuse as much as possible the by-products of bioenergy production, including black liquor, as fuel in our own production processes.

Risks, challenges and opportunities

In the global drive to decrease fossil CO₂ emissions a shift towards the use of renewable energy is needed. This shift could be achieved by using energy from biomass, but this may limit the availability of wood fibres for paper production. Cost is also a risk and a challenge. Increased cost of raw materials, possibly because of

government incentives encouraging the use of biomass, could create a competitive disadvantage compared to less energy-intensive packaging materials.

Tackling climate change through encouraging the circular economy is an opportunity for our business. Smurfit Kappa continually seeks ways to utilise its resources more efficiently, and welcomes synergies with stakeholders. One of the fields where circular thinking has advanced our efficiency is energy production, either from our side streams or in the form of more efficient use of different forms of energy.

Smurfit Kappa supports efforts to curb climate change whilst maintaining a global level playing field for business. Following the 'Paris Agreement', the business sector needs governments to design stable, predictable, long-term policies ensuring a smooth, coherent and effective transition to a low-carbon society. These policies will create greater certainty for innovation and investment decisions.

Specifically for Europe, where we do 75% of our business, we are closely monitoring how the follow-up of the COP 21 has an effect on the EU ETS and how EU can avoid the so-called 'carbon leakage' – the transfer of business operations to countries with less robust environmental targets. The EU approved its policy framework on climate change for the period of 2020-2030, but its implementation has not yet been decided. For the paper industry it is fundamental that the region remains competitive, and avoids costs that hinder global competitiveness.

Efficient energy production in focus

Smurfit Kappa reduces its CO₂ emissions through a systematic approach that includes increasing resource efficiency through implementation of best practices in energy production in its paper mills. With correct technologies in place, we can reach an energy efficiency of over 85%, by, for example, installing Combined Heat and Power (CHP) plants in our mills.



Massimiliano Listi and Hugo Castillo Garcia with their teams

During 2016 two new CHP plants started in Smurfit Kappa's mills. In Ania (Italy), the natural gas powered CHP started on the first of January and in Barbosa (Colombia), part of the coal-produced energy was replaced with a natural gas powered CHP in July. In both cases, the mill replaced purchased electricity with an improved system, enabling more efficient electricity production and total self-sufficiency – they now generate 100% of their own electricity.

CHP plants generate vast gains

'Nowadays, the mill runs with 86% energy efficiency', explains Massimo Listi, General Manager of the Smurfit Kappa Ania mill. 'On top of that, energy supply assurance, as well as the security of our employees, have increased as a result of this project.' 'We notice similar impacts', says Hugo Castillo Garcia, General Manager of the Smurfit Kappa Barbosa mill. 'The coal deliveries to our site have reduced by twenty truckloads a month.

Coal related CO₂ emissions dropped from 120 to 78 tonnes with the finalisation of this project.' An efficient CHP also lowers the discharge of other emissions into the air when the best available technologies are utilised. For example, in Ania, the specific NO_x emission per unit of energy produced, was reduced by 18%, and in Barbosa nitrogen oxide emissions were halved by the project.

Prerequisites

What makes a successful CHP project? Good planning is a prerequisite say both Listi and Castillo Garcia. 'When you completely alter the production method of electricity and heat, a pile of administrative work will come your way,' says Listi. 'This makes it extremely important to plan carefully, design a well-thought-out system, and make proper calculations that get you through the process.' 'It is a costly investment', continues Castillo Garcia. 'Some of the costs come from building the system

itself and others stem from applying for permits, executing impact assessments, and other related issues.'

Effects on the big picture

'I think a project like this is a good learning process for a mill', says Listi. 'Part of the project was an extensive environmental impact assessment that looked not just at direct and indirect emissions from the mill, but also focussed on the future of the environment where the mill is located.' 'It urged us to really think about the big picture and to formulate a clear goal: why do we need this project? Our main reason was to reduce our energy consumption, have an integrated energy source less prone to disturbances and, of course, to reduce our emissions', concludes Castillo Garcia.



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Gas under the magnifying glass

Natural gas will continue to increase its share of the global energy mix, growing at 2% per year until 2020, according to the International Energy Agency. Although natural gas is less carbon intensive relative to other fossil fuels it is still a natural resource. A consumption reduction not only favours the environment, it is also an economic incentive to produce more efficiently. Several Smurfit Kappa plants across Europe found new ways to significantly reduce their natural gas intake and CO₂ emissions.

Benelux is getting up to steam

In the Benelux, Smurfit Kappa focused on the main consumer of energy and water at its plants, namely the corrugator. Energy scans were conducted to get a detailed overview, and new ways to significantly decrease use of energy and water were identified. The solution that bore fruit consisted of several elements, including insulation of industrial pipes and re-use of steam. Insulating the pipes also improved the safety of employees as it reduces the risk of burn injuries. To efficiently re-use steam, a modification of the steam valve was necessary. These measures resulted in an annual corrugator gas consumption decrease of 10% – equivalent to 9,500 m³ of gas. Re-use of condensed steam delivered up to 20% lower water consumption.

Re-insulation in Denmark

Research conducted by Smurfit Kappa Denmark showed that heat loss from technical installations offered potential for improvements. The focus was on the boiler which produces steam to transfer energy to paper and board, module facers, pipes, and fan heaters and the hot water installation in the technical room. The solution applied consisted of re-insulating technical installations using special insulation pipes and bags.

As a consequence, the annual gas consumption decreased by 9.5%, CO₂ emissions decreased by 308 tonnes on a yearly basis.

Well-made improvements in the UK

In West Auckland (UK) Smurfit Kappa uses gas in steam-generation for the corrugator and heating systems. Three main areas were targeted for improvements, including the boiler control, steam pipework insulation, and a constant hot well temperature. Installation of an advanced eco-controller for the boiler resulted in estimated savings of 10% and a drop in CO₂ of 308 tonnes per year. E-watch software with input from thermal cameras detected focus areas for insulation. This upgrade produced annual cost savings of £27,000, and a yearly reduction of 149 tonnes of CO₂. Achieving a constant temperature of the hot well added £14,000 in savings, and a drop of 145 tonnes of CO₂. Overall gas usage was lowered by a stunning 33%.



Smurfit Kappa supports the EU initiative for an Energy Union. We believe it will enable European companies to deliver innovative, efficient products and technologies to tackle climate change, provided it is established correctly. With the majority of our business based in Europe, we are affected by the enduring relative high energy costs in the region. The Energy Union aims, among other things, to address this issue.

Looking further ahead, the CEPI Forest Fibre Industry 2050 Roadmap (2011) to a low-carbon bio-economy showed that a CO₂ reduction for our sector of 50%-60%, compared to 1990 levels, is possible based on available and emerging technologies. To reach a reduction of 80% by 2050, the development and availability of breakthrough technologies are necessary, and must be available by 2030.

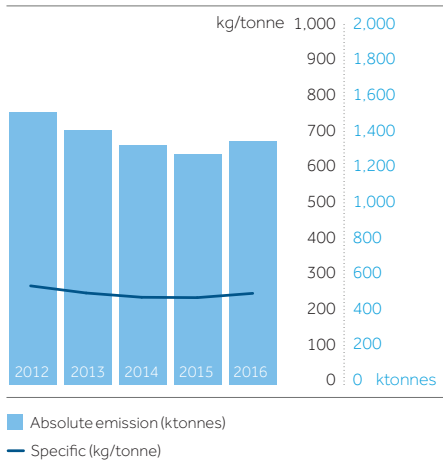
Progress in 2016

To tackle climate change we are moving to a lower fossil-fuel, less CO₂ – intensive energy mix, promoting renewable sources where economically feasible and closing loops to create circularity in our production process. We do this through a three-pronged approach:

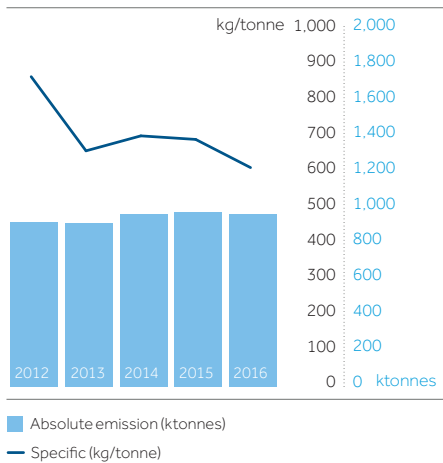
- Investing in efficient energy generation
 - Efficient energy generation by investing in highly efficient Combined Heat and Power (CHP) systems. Our industrial need for both electricity and heat means we are well suited to scale up our use of CHP generated power
 - Improving the efficiency of our current boiler houses, minimising heat losses
- Investing in energy reduction programmes
 - Reducing our absolute use of energy through investments in research and new replacement technologies
- Investing in fossil CO₂ reductions
 - Reducing carbon emissions through a shift to CO₂ friendlier fuels, such as biomass and natural gas.



Direct fossil (scope 1) CO₂ emission European mills



Direct fossil (scope 1) CO₂ emission The Americas mills



Between 2005 and 2016 we achieved a reduction of 22.9% of our relative CO₂ emissions for our paper and board mills, which is slightly ahead of the relative reduction already achieved in 2015. We have included the data from our three Brazilian mills that were acquired at the end of 2015 in the baseline and 2016 result.

Energy Efficiency

While our climate change target is to reduce our relative CO₂ emissions, it cannot be achieved without progress in energy efficiency. During the eleven years

from baseline year 2005 to reporting year 2016, we have improved the energy efficiency of our paper mills by 11%. This has been achieved by combining investments in more efficient energy generation with investing in technologies that reduce use of energy in our processes.

The key events during 2016, resulting in the 22.9% reduction of relative CO₂ emissions in comparison to 2005, were:

- The new paper machine in our Townsend Hook mill achieved higher energy efficiency in 2016 compared to 2015. The mill achieved a 38% emission reduction in comparison to 2015
- We successfully started the CHP at our Ania mill at the beginning of January 2016, producing all the electricity needs for the mill compared to only 45% previously. This improvement in the efficiency of energy production reduced fossil CO₂ emissions by 4%
- At our Roermond mill, emissions decreased after the rebuild of PM1, which was finished at the end of the first quarter of 2016
- The three Brazilian paper mills, acquired at the end of 2015, had a positive impact on the Group's CO₂ emissions as they mainly run on bioenergy
- Our Bernal mill in Argentina optimised its energy production in 2016, which has led to a more efficient boiler house and a reduction of CO₂ emissions by 5.5%
- At the Coronel Suarez mill in Argentina in 2015 a vacuum fan was installed, replacing the vacuum pumps. The effect of this can be seen in 2016 in a reduction of 3.8% in CO₂ emissions
- In our Cali mill in Colombia an analysis of the mill's energy system and balance was completed to optimise its heat balance of the mill. First results showed a decrease in less efficient electricity generation and a decrease in heat usage per tonne of paper produced, by making use of waste heat.

Renewable energy

To become less dependent on fossil fuels, a shift to renewable, CO₂ friendly fuels is required. For Smurfit Kappa this means creating circularity in our energy production through fully utilising, where possible, any by-products that have an attractive energy value. This is in addition to traditional bioenergy usage at pulp and paper mills – burning black liquor at integrated pulp and paper mills and utilising the biogas produced during the anaerobic water treatment at our recycled paper mills as fuel.

To be able to reach our relative CO₂ target, we have a programme to move from fossil fuels to renewable sources. Since 2005 we have shifted to biofuels where possible and reached a fuel mix at our paper mills of 48.5% biofuels, compared to 37.3% in 2005.

Working with our customers

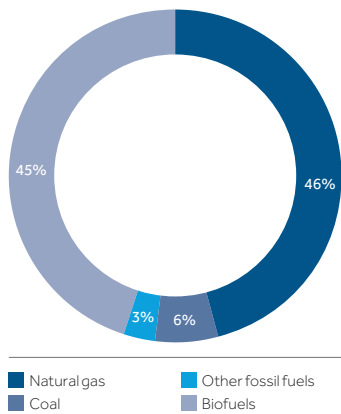
Using a suite of tools, including our Paper to Box and Pack Expert, we continue to work with customers to determine the carbon footprint of their packaging. These tools give access to CO₂ emissions data and other information to optimise packaging solutions.

In 2016, Paper to Box was used over 8,000 times per day and Pack Expert almost 1,200 times per day on average. The application of Paper to Box increased from 2015 due to increased interest from customers in using our insights based on measured data and research. Another contributing factor was the expanding use of the tools in the Americas. As we work towards our 2020 target of 25% reduction of our specific CO₂ emissions, these tools help capture this data for our customers' own calculations and benefit.

Our Innootools suite of design software features options for customers, not only to determine the carbon footprint for each packaging unit, but also to track its development over the years.

Our priorities and performance Climate Change continued

Direct fuel consumption All operations



Emissions from transport

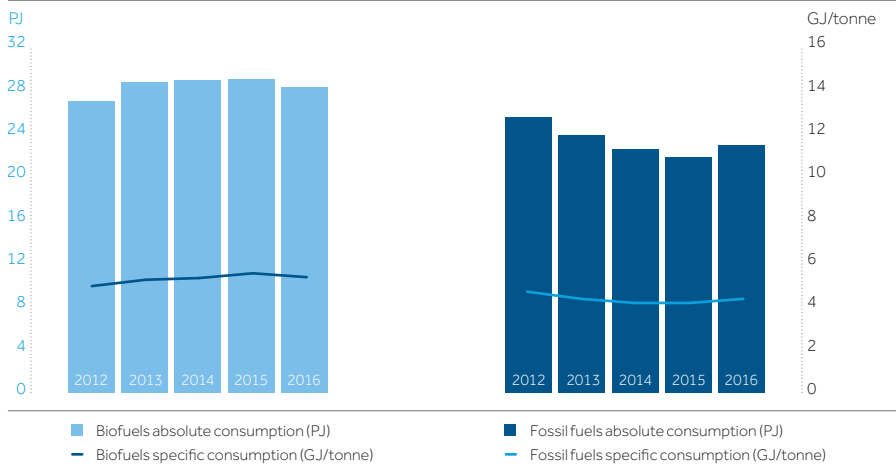
The vast majority of our CO₂ emissions stem from our manufacturing activities at our production locations. Of the remaining CO₂ emissions, those caused by the transport of raw materials, intermediate, and final products, to and from our production locations are also significant.

We currently report our transport emissions from our European operations which represent 75% of our business and have expanded the scope of this for 2016. The transport and scope of our reporting are described in the diagram below.

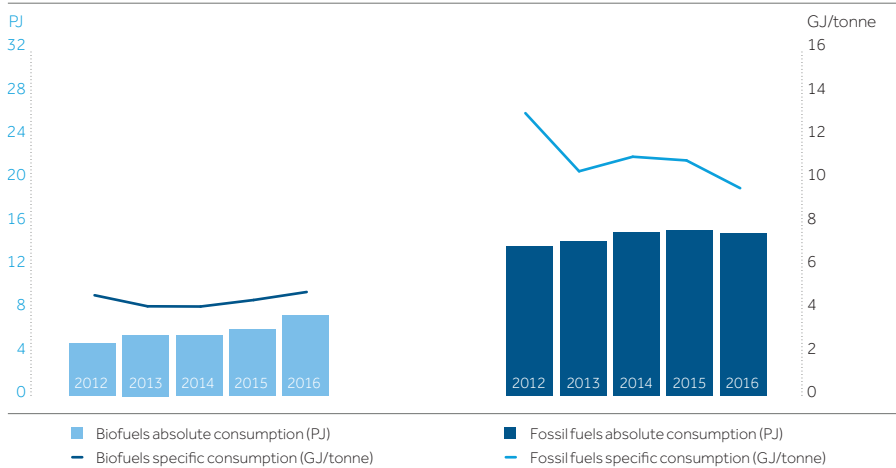
Our aim is to include transport emissions from our American operations in the future.

In the CO₂ emissions reported we include the transport of wood, recovered papers and market pulp used in our mills. We also take into account CO₂ emissions from the transport of intermediate products to paper mills and/or converting plants (reels of paper, corrugated board sheets, solid board sheets, etc.). In 2016 these emissions were 275,000 CO₂ equivalent. We also report CO₂ emissions of the transport of finished products to our customers, which mainly focuses on packaging solutions. The latter transports have all been delivered by road and represent in total CO₂ emissions of 110,000 tonnes.

Biofuels and fossil fuels European mills



Biofuels and fossil fuels The Americas mills



The total of these transport related emissions in 2016 represented 385,000 tonnes of CO₂ equivalent.

While the calculation of CO₂ emissions for the transport of paper reels between our own mills and the converting plants is accurate (representing 75% of the total volume), we believe we have made a good estimate of emissions for the transport of the remaining reels of paper supplied to our corrugated plants by third parties.

Transportation for the above activities represents approximately 10 billion so-called tonne-kilometres. 54% of our transport needs are carried out by road, 28% by sea with the balance carried out by train.

The road to CO₂ reductions in transport

Dominik Dohr, manager Smurfit Kappa Distribution Services, is convinced that digitalisation of transport management will open the door to further sustainability gains, especially a reduction in CO₂ output. 'The cloud-based transportation platform we introduced has yielded cost savings of €1 million during 2016. The improved network visibility helps to better leverage and prioritise alternative transport solutions through which we already reduced GHG emissions by eight percent.'



Dominik Dohr

Smurfit Kappa utilises a dense transportation network in Europe. In the past transport was sourced and managed with a local focus, using different tools and applications. A new approach was initiated within the Recycled Paper Europe cluster, to further advance the transport management approach and benefit from the synergies within our network.

Smurfit Kappa Distribution Services took on the challenge of analysing where improvements would result in improved cost and sustainability. The solution came in the form of an online cloud-based transport platform which focused on bringing together freight demand, utilising alternative modes of transportation, and combining freight loads.

Smart network

Dominik Dohr: 'Well over 300 transport suppliers are connected to our logistical platform as are our paper and corrugated Smurfit Kappa locations. This enables us to optimise our freight movements. Routes are divided up into legs, and freight loads are combined to utilise transport capacity efficiently. We view routes as loops – not the individual A to B sections that are characterised by trucks returning empty. Trucks are no longer the only option. Trains and vessels are valuable additions to our network. Nowadays, eight percent of our transport volume is covered by multimodal transportation while the clear objective is to increase the share of alternative transport solutions.'

Open platform

'The new visibility gained from the cloud-based transport platform, and our sustainability KPI's, provide focus to continuously improve our logistics. The platform makes alternative options visible, enables us to evaluate our performance and quantify our efforts, promotes multimodal and combined solutions, multistops, and, finally, significantly reduces costs and footprint', Dominik Dohr concludes. So far, the road to CO₂ reductions in transport has been based on smart collaboration between Smurfit Kappa and the transport sector, but we plan to open the platform to other freight sourcing companies, reducing GHG emissions on an even larger scale. This enables Smurfit Kappa to provide the best possible service to clients at minimal costs, with the smallest environmental footprint.



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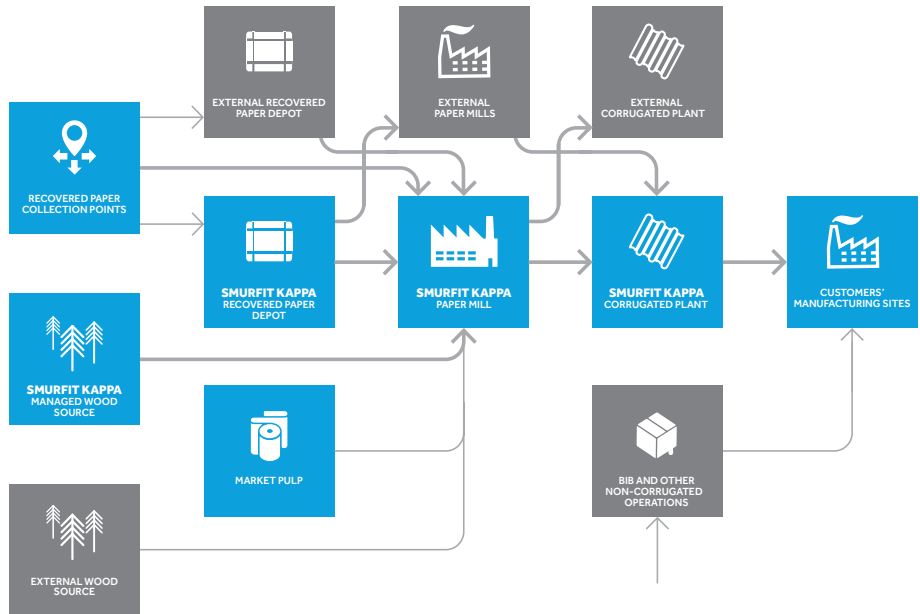
Supplementary information

Our priorities and performance Climate Change continued

We have adopted a calculation method in which we collect actual data every second year and use this to extrapolate and adjust the following year's transport emissions, unless the acquisitions and divestments made by the group create a material change to the situation. The data for 2016 is actual 2016 data. The CO₂ emission factors by transport mode are extracted from the European Reference Life Cycle Database version II (ELCD).

We are increasing our focus on transport environmental impacts in many ways. During 2016 several pilot cases focused on reducing traffic from roads and simultaneously reducing CO₂ emissions. This has had a positive impact on the communities where we operate; reducing noise and increasing safety on the road.

Transport streams



The transport streams pictured with bold arrows represent transports included in the calculations.

Climate change

Scope

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 (directly or indirectly through buying secondary energy) relate to the production of paper. Only paper production is taken into account given its relative fuel use compared to our converting operations (90%) and its subsequent contribution to fossil fuel CO₂ emissions.

Commitment #1

A 25% reduction in relative total fossil CO₂ emissions (compared to 2005) (scope 1 and 2) in our mill system by 2020.

Timeframe: Target to be reached by 2020

Progress made: In 2016 we reached a reduction of 22.9% of relative fossil CO₂ emissions (compared to 2005). As expected, our progress against this target is becoming slower as we are reaching the final stages, with some investments still to come to fruition.

Commitment #2

Collaborate with customers to calculate the carbon footprint of the packaging life cycle.

Timeframe: Continuous

Progress made: We have developed a suite of tools that help to determine the carbon footprint of our customers' packaging (Paper to Box and Pack Expert). In 2016 these tools were used on average more than 9,200 times a day.

Our perspective

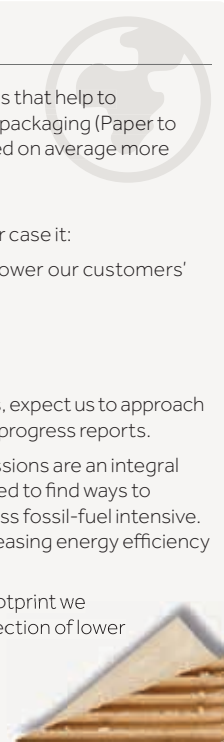
Climate change drives change in society, and in our case it:

- Stimulates product design improvements to lower our customers' carbon footprints
- Encourages production efficiency
- Informs how we invest for the long term

Our stakeholders, notably customers and investors, expect us to approach climate change responsibly and to provide detailed progress reports.

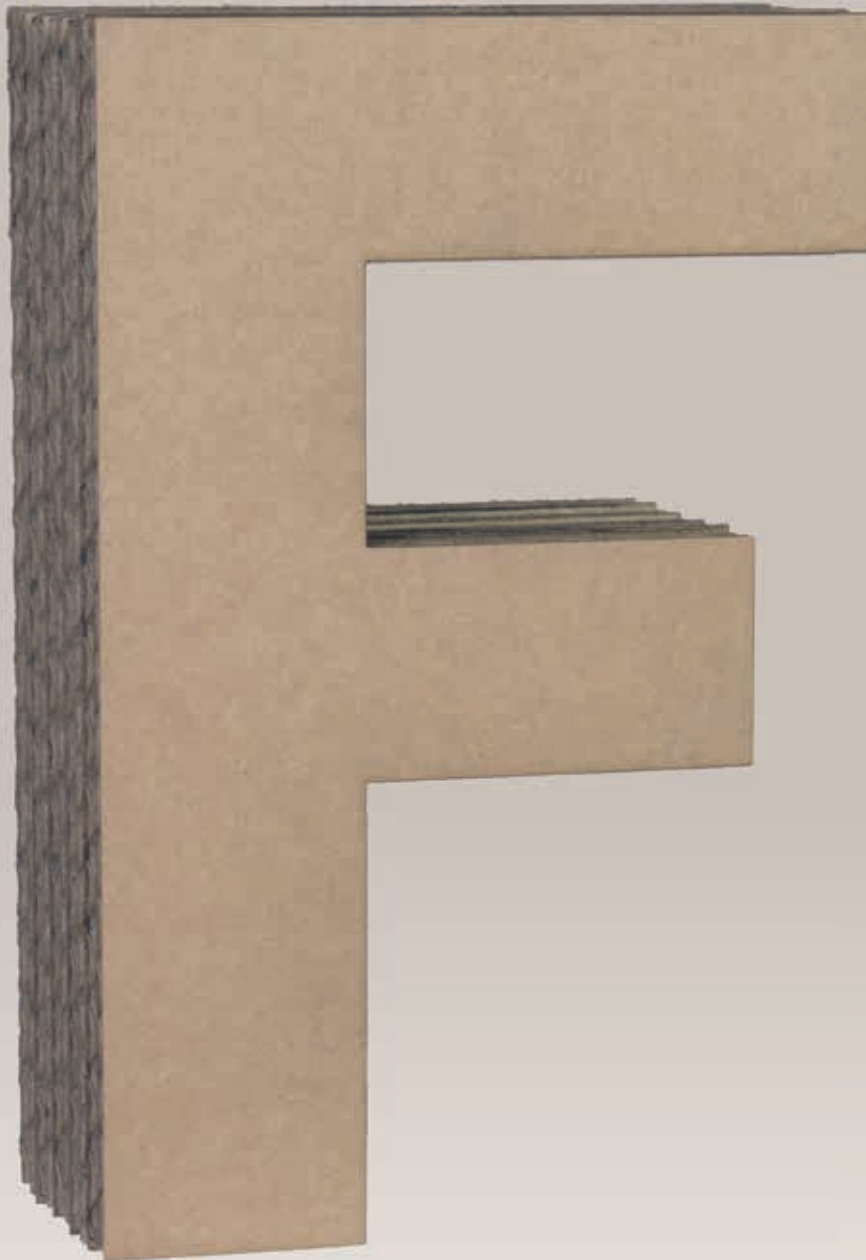
Our use of energy, carbon footprint and GHG emissions are an integral part of Smurfit Kappa's business. We therefore need to find ways to fundamentally re-engineer our operations to be less fossil-fuel intensive. In our case it means reducing energy use, and increasing energy efficiency and the use of renewable sources where feasible.

By focusing our targets on reducing our carbon footprint we simultaneously steer our energy savings in the direction of lower greenhouse gas emissions.



Product-specific carbon Footprints

Our carbon footprint calculations help customers track their product and packaging CO₂ reduction targets.



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Water

Water

Water is an important element in everybody's life and it is involved in nearly all natural cycles. For us water is vital when creating paper from fibres and therefore we want to take the best possible care of this resource.

Summary

- We process rather than consume water – in 2016, of 119 million m³ of water used, 109 million m³ was discharged in good condition
- Since 2005 we invested €60 million in water treatment plants, decreasing COD by 31.9%
- During 2016, five additional mills were in depth water risk assessed, confirming no material risk on site
- Over 90% of our mill production uses best practice water treatment

Clean and accessible water is an essential element of the world we want to live in, and is of the UN Sustainable Development Goals (SDG No 6 and 14). There is sufficient fresh water on the planet to achieve this, if we use it responsibly and create the necessary infrastructure.

Only 9% of our paper and board production takes place in areas with water scarcity. Nevertheless, sustainable use of water is of key importance to us, and of material concern to our stakeholders. For instance, if customers are in a business where water is highly relevant they require good water stewardship, or need compliance from their stakeholders.

We use water to process our raw materials, and for cooling purposes. Our 33 paper and board operations under review used 119 million m³ of water in 2016, of which 109 million m³ was discharged in good condition. The supply of good quality water is therefore of material concern to our business.

The figures above indicate we are more a processor of water than a consumer. Apart from returning over 90% of the water we take in, we also reuse water several times at various production stages before it is processed in our water treatment facilities and returned to public water bodies. Of the water discharged, 77 million m³ was used for processing purposes and 34 million m³ for cooling. Since 2014 we perform water risk assessments across all our sites.

Risks, challenges and opportunities

A significant decrease in the availability of water, or an increase in the cost, will materially impact the ability of our business to operate.

Incorrect use and treatment of water poses risks to the ecosystems or environments in which we operate. Water that is being returned to the environment by an industry can impact an ecosystem by creating a nutrition imbalance, polluting the water, or changing its temperature.

Regulatory requirements and continued scrutiny means that the quality and safety of the treated water we return to the public water bodies must always remain high, to mitigate any impact on biodiversity. To achieve this, we have invested €60 million since 2005 in the development of our process water treatment plants.

The challenge for Smurfit Kappa is to maintain and demonstrate our responsible approach to water use, as a low consumer of water. We must ensure that companies within our sector and more broadly, do not tolerate water waste even when they operate in areas with no water scarcity. Indeed, customers whose production processes are water intensive have demonstrated an interest in sharing knowledge with Smurfit Kappa on water management practices.

We have set ourselves a clear target of reducing the organic content of water (COD) by one-third by 2020, including the mills that directly discharge to surface water. We are also performing water impact assessments at our mills.

Smurfit Kappa Piteå halves COD-emissions

Smurfit Kappa Piteå, in the northern part of Sweden, is situated in an area known for its rich water surroundings. The city is located at the mouth of the Pite River at the shore of the Bay of Bothnia. To protect the popular tourist archipelago in which Smurfit Kappa operates, much attention is given to the Waste Water Treatment Plant (WWTP) as Ingemar Lundstrom, Environmental Manager, points out.



Ingemar Lundström

'We have been improving our WWTP since 2013', explains Ingemar. 'Back then our mill exceeded the limit values for COD-emissions. The reason was uncontrolled abundant growth of filamentous bacteria resulting in an overload of the secondary clarifier. To solve the issue, we conducted a detailed investigation with the assistance of internal and external experts. We also

visited mills with similar WWTP-facilities, and received valuable input that we could use for our own operations.'

Action plan

The team in Piteå developed an action plan with four main points. The first was to improve dosage and control of nitrogen and phosphorous by using an online TOC-device. Secondly, they intended to

improve oxygen-control in the different aeration basins by installing automatic control valves and online oxygen read-outs. Following that, the team aimed to distribute return sludge from the secondary clarifier to one better positioned in the WWTP aeration basin. Finally, they sought ways to reduce waste water volumes to the WWTP.

Support from authorities

'It was essential for the project to get approval from the Environmental Court', says Ingemar. 'We received a four-year temporary permit with less strict conditions, allowing us to implement the action plan. After four years, we have to return to the conditions stipulated in the old permit. Once we acquired the permit we proceeded as planned. Some optimisation trials are still to be completed.'

COD-emissions halved

The WWTP process in Piteå is back under control. Achieving good sludge properties by controlling the share of filamentous bacteria is a key factor. Emissions of COD, suspended solids and nitrogen are now well below the maximum values in the permit and even below the ranges in the new BAT-AEL, the Best Available Techniques and Associated Emission Levels. Phosphorus is also well below the permitted values and within the BAT-AEL range. Final optimisation is still in progress but, COD-emissions during 2013-2014 were 3,400 tonnes/year, which has decreased to 1,500 tonnes during 2016.



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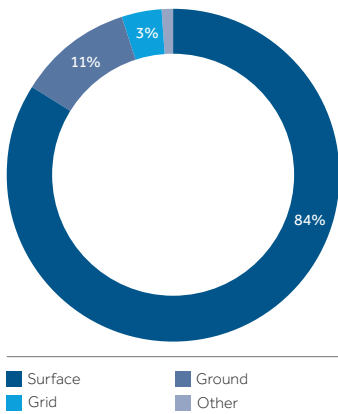


Supplementary information

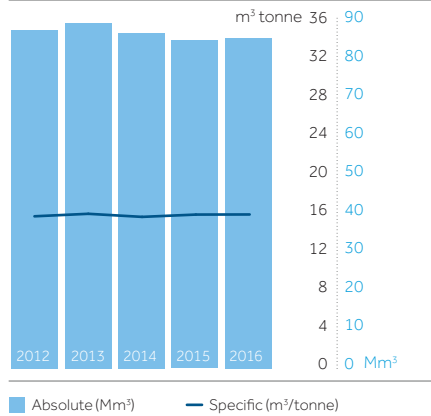


Our priorities and performance
Water continued

Water sources
All operations



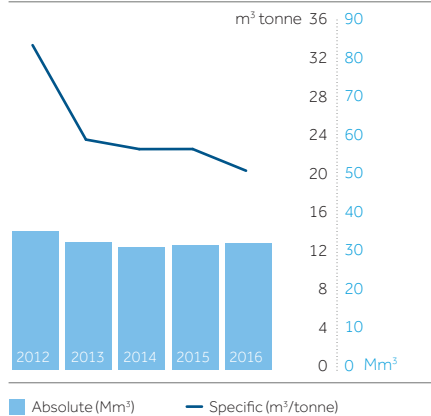
Water intake
European mills



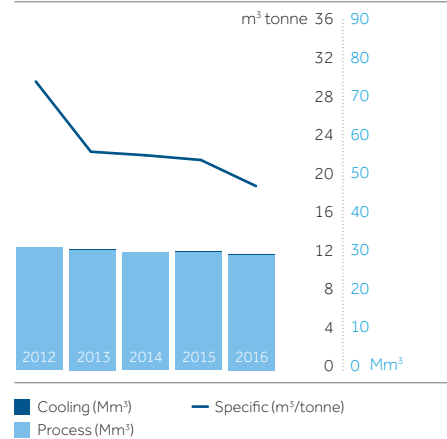
Water released
European mills



Water intake
The Americas mills



Water released
The Americas mills



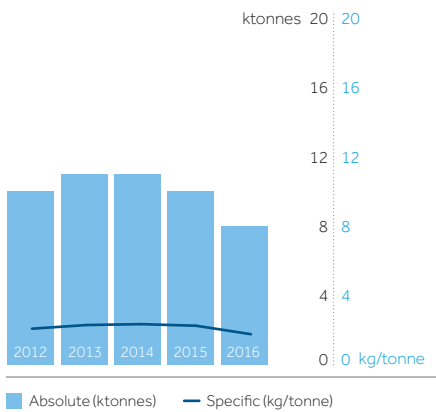
Progress in 2016

Understanding our relationship with water is crucial. It comprises our impact on the water we use as well as understanding the environment in which we operate. For us there are two material approaches to water: improving the quality of water we discharge (for which we have set a relative target), and understanding the risks associated with water availability and use. Focusing our actions in these areas will enable us to positively change

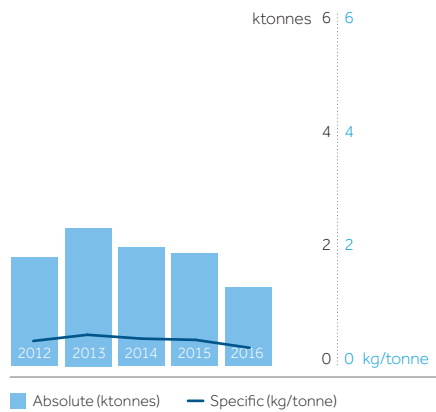
the way we operate, and influence our working environment as well.

In light of the above we continually implement best practices in our mills' water treatment. In 2016, over 90% of paper and board was produced at mills where best practice water treatment systems are in place. This involves treating process water to decrease the organic charge of effluent, through anaerobic and/or aerobic treatments, before returning it to public water bodies.

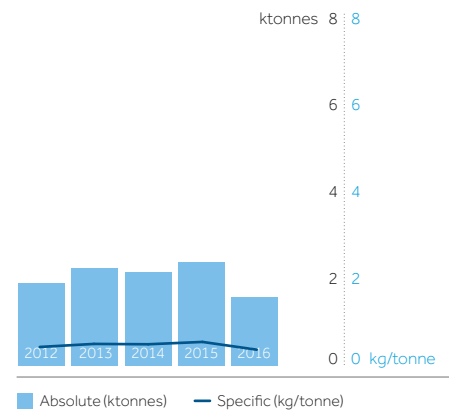
Process water discharges
European mills:* COD



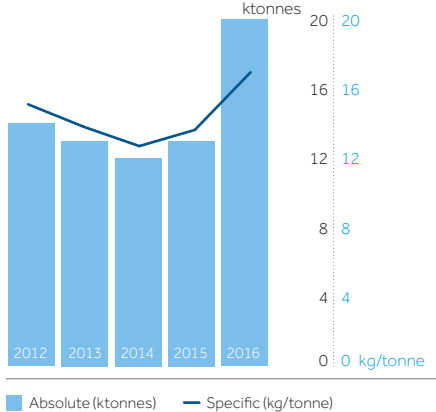
Process water discharges
European mills:* TSS



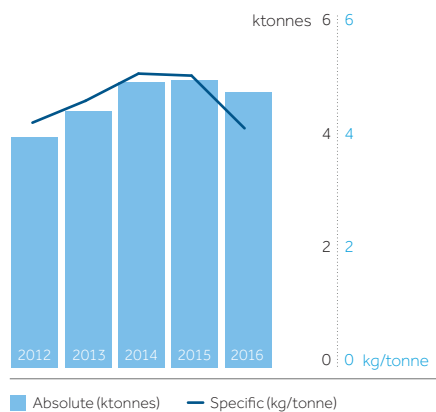
Process water discharges
European mills:* BOD



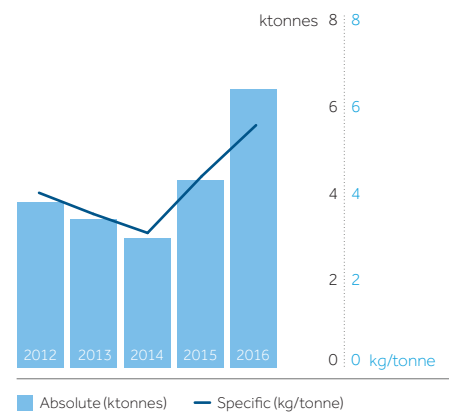
Process water discharges
The Americas mills:* COD



Process water discharges
The Americas mills:* TSS



Process water discharges
The Americas mills:* BOD



* figures of mills releasing to environment (mills that released water to external WWTP are not reported)

In 2016, we continued our water risk assessment programme, aiming to investigate the impact our water use has on regions where we are located, and the global water risks for our mills. During 2016 and early 2017 we carried out in-depth assessments at our paper mills in Ania (Italy), Barbosa and Barranquilla (Colombia), Bernal (Argentina), Forney (USA) and SSK (UK). All confirmed that our mills' use of water has no material impact on the availability of water to the region where

they are located. We expect to be able to assess approximately six mills each calendar year.

The significantly expanded water treatment plant at our Saillat paper mill started in January 2016. Since then the COD levels have decreased by 76%, and TSS levels by 84% compared to previous years. We expect these levels to decrease further once the facility reaches its optimal operating level.



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Water continued

Cleaner water in Italy and Spain

Smurfit Kappa plants across the globe devote much attention to their water consumption and seek continuous improvements. In 2016 our production facilities in Italy and Spain implemented new ways to improve the quality of discharged water by enabling more effective removal or re-use of ejected ink and glue.

A bucket full of ideas in Italy

Smurfit Kappa Susegana is located close to an Italian city famous for its waterways: Venice. To improve its water management the plant had to create a more efficient and eco-friendly way to clean ink buckets used in the flexo printing process. These buckets need to be cleaned with detergent and water after each use to avoid contamination with other inks in printing.

Usually this involves high water volumes, intensive labour, and production interruption issues. To solve all these issues the team came up with a machine that can wash six buckets at a time with hot water. This not only improves speed and continuity, but it creates a closed loop which saves water, and opens up the possibility of washing without a detergent.

In the past, each cycle of fresh water used for cleaning buckets went to the waste water treatment. Now twelve times less water is needed, which means less water to clean and less use of chemicals to do so. In 2016, water savings totalled 66% to 92%, annually saving 95m³. On top of that the new approach saves 575 operator hours per year.

COD reduction of 78% in Spain

Smurfit Kappa Canovelles, near Barcelona, is committed to optimising natural resources, reducing auxiliary materials, and preventing pollution, based on Smurfit Kappa sustainability values. In their search for further improvements they developed an approach that enables the plant to re-use glue from water by returning it to the corrugating process.

The glue used in the corrugator process is composed of water, corn starch, borax, soda, and biocide. When the corrugator process is finished, the glue water resulting from corrugator cleaning goes to the treatment plant. The water in the treatment plant is composed of 20% glue water and 80% ink water. The newly installed method reduces water consumption from the grid by 53% or 778 m³ per year, use of additives by 20% or 3.9 tonnes annually, and organic load in the treatment process, dubbed COD or BOD, by 78%.



Performance in 2016

Between 2005 and 2016 the COD content of processed water returned to the environment has decreased by 31.9% relative to production. This had decreased by 29.4% in 2015, representing an incremental improvement of 2.5% year on year. These figures are exclusive of the three paper mills in Brazil acquired in December 2015. These are being integrated into the Smurfit Kappa reporting system, and are implementing our measurement and reporting frequency.

In 2016, water intake of all our operations increased to 121 Mm³ from 120 Mm³ in 2015, including the Brazilian mills. The minimal water intake increase after this acquisition is mainly due to stabilised production after start-up in Townsend Hook. Calculating the water intake without the Brazilian acquisitions, we continued to decrease our water intake from 120 Mm³ in 2015 to 119Mm³ in 2016. For 2016, compared to 2015, the average water intake by our paper and board mills decreased to 17.4 m³ per tonne of paper produced from 17.5 m³, but remained above the 2014 17.2 m³ level. This represents a 0.6% improvement year on year.

Water

Scope

This priority area covers the water intake and discharge to and from our processes. Reporting covers all Smurfit Kappa paper mills discharging process water directly to water bodies. Mills that have their process water treated externally are not included. Only paper production is taken into account because this contributes to 95% of all organic discharges and 98% of the total water intake.

Our target is set against chemical oxygen demand (COD) in water which an indicator of the organic content in water.

Commitment #1

A reduction of COD in water returned to the environment from our mill plants by one-third compared to 2005 levels.

Timeframe: Target to be reached by 2020

Progress made: At the end of 2016, we achieved 31.9% of COD reduction per tonne of paper produced compared to 2005 for mills discharging directly to surface.

Commitment #2

Perform environmental impact assessments of water use at our sites (where relevant), and develop water usage measurements.

Timeframe: Target to be reached by 2017

Progress made: Overall environmental impact assessment of water use at our sites was carried out during 2014. As a result, a tool to assess mill-specific risks related to water was created, and we aim to assess each mill by the end of 2020. Eleven mills have been assessed using this tool since 2014. We expect to assess approximately six mills per year, completing the programme by 2020. The assessment programme on high water stress areas was completed in early 2017.

Our perspective

Water lies at the core of sustainable development. Ensuring the global availability and sustainable management of water and sanitation for all could transform the UN 2030 Agenda. Sustainable water management is also of utmost importance for Smurfit Kappa, because our business needs ample water availability. As we rely on natural raw materials, water is vital for the ecosystems and environments where we operate.

Over 90% of the water we use is returned to nature and we also focus on improving the quality of water we discharge, as well as understanding the risks associated with water availability and use in the areas where we operate. This strategy positions us to deliver positive change to the environment and our processes.

To make an ongoing difference, we will continue to invest in water treatment facilities that improve the quality of water released to nature, and perform water assessments of our paper and board mills. The findings will guide appropriate actions to reduce the impact our operations have on the water balance in their region.



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Waste

Waste

Resource availability and the efficient use of resources are two key global challenges alongside climate change. As the global population is expected to reach 9 billion, with a parallel increase in consumption, we must find innovative ways of using our materials to their maximum.

Summary

- Reducing waste begins at product design, using methods like 'right weighting'
- Our target is to reduce waste sent to landfill by 30% by 2020, and have achieved 13.3% so far
- We create circularity within our operations, and links with other industries, and 75% of our raw material is recycled fibres
- We support and contribute to initiatives to reduce waste and increase material efficiency

At the same time, reducing waste going to landfill is increasingly important. The UN calls for responsible consumption and production through its SDG No 12, and more and more businesses seek opportunities from the circular economy.

Smurfit Kappa's aim is to contribute to a world without waste, supporting the concept of circularity. Avoiding waste is a material issue for our stakeholders, and many of our customers have stated objectives to reduce waste. Food waste, damaged products, and packaging waste, are important sources of waste sent to landfill, and our packaging solutions help avoid that. Packaging protects food and other products from being damaged or spoiled, and, after use, our products are recyclable. In addition to protecting the contents, our packaging is reducing its own impact by employing the concept of being 'right-weighted'.

It seems paradoxical that the products we produce are 100% recyclable, but at the same time we generate over 100 kg of non-hazardous waste per tonne of paper and board, of which approximately 58% is sent to landfill. There is a simple explanation for this. The recovered paper bales we receive, from which we produce our recycled paper, contain unwanted plastic, metals, glass, textiles, sand, and other non-usable that have not been separated from the recovered paper stream by recycling companies before being delivered to our mills. On average we need 1.070 kg of recovered paper to produce one tonne of paper and board. To reuse as much of the recovered materials as possible, we separate these unwanted

elements from the production process by using water. Some of this water is retained by the non-usable materials and therefore contributes as much as 50% to the waste we 'generate'.

To minimise the amounts of waste we send to landfill, we reuse our waste as far as is economically and technically feasible. Currently, approximately 42% of our waste is already being recovered. Our short term ambition is to reduce the waste produced at our paper and board mills which we send to landfill on a per tonne basis by 30% compared to 2013 by 2020.

Risks, challenges and opportunities

One concerning risk is that our principal raw material, recovered paper, can be 'wasted', either by being discarded instead of being recovered for recycling, or used as fuel for heating or electricity production. Our challenge is to prevent that from happening. We are committed to working with not only the recycling and paper producing industries to achieve this, but also welcome initiatives from other stakeholders in this area. Furthermore we support legislation that promotes using the value of materials in the economy as long as possible.

Fortunately, we have ample opportunities to reduce the amounts we send to landfill ourselves either through partnerships with third parties or by developing our own solutions. One example of this is our UK SSK mill's project concerning the sludge from water treatment. The sludge is being sent to other water treatment plants, to function as 'starters' in biological water treatment.

Paper and paper-based packaging are highly recyclable materials and currently the most recycled packaging materials worldwide. While the overall paper industry in Europe generally achieves 71.5% recycling rates (which is lower than the 82% recycling rate for paper based packaging shown in the graph alongside), in the US and in Latin America 66.8% and 45% recycling rates respectively have clear upward potential.

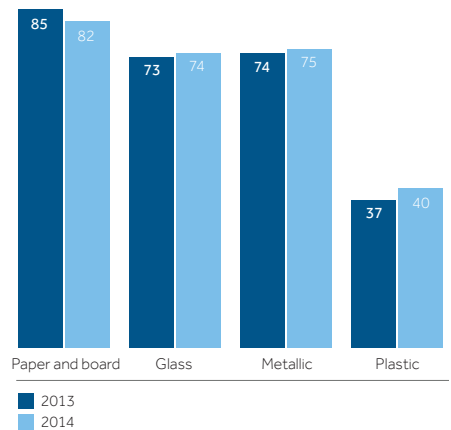
Progress in 2016

We approach the issue of waste from a pragmatic perspective, which defines the materiality of challenges we want to tackle around different wastes and waste generation. Therefore, our starting point is to look at the waste sent to landfill generated at our paper mills.

After finalising a group-wide assessment in 2015, we set a target to reduce waste sent to landfill from our paper and board mills by 30% per tonne of paper by 2020.

Over 90% of our waste is generated in our paper mills. Most of it is generated by the recovered paper pulping and screening process, including reject materials. Other waste sources include sludge from the process water treated in our water cleaning facilities, calcium carbonate residues from lime kilns and ashes from biomass boilers. A large part of what is registered as waste actually has a water content of approximately 50%.

Packaging recycling rate in EU 28 (%)
Source Eurostat



60% less sludge sent to landfill in Monterrey

In an important industrial region in the northeast of Mexico, at the foothills of the Sierra Madre Oriental, Smurfit Kappa operates a mill near the city of Monterrey. Monterrey is considered one of the most developed cities in the entire country. Rapid industrial development places even more focus on environmental issues and Smurfit Kappa is keen to continually look for ways to improve and contribute positively to the environment surrounding the operations.

Ricardo García, General Manager of the mill, explains how the mill has recently improved its waste streams: 'It all began with the actual environmental situation, which inspired us to further reduce landfill waste. We made it a top priority, and committed ourselves to look for a more efficient way to handle our waste. In our case the waste consists mainly of sludge, so we looked into new ways to improve our forming section and implement a drainage and retention system.'

'We found out that the primary sludge generated in our waste water treatment facilities could also be used in the production process without compromising our efficiency. We allocated resources that

enabled us to use chemicals in a more efficient way, to implement a drainage system with formation wire, start data collection for analysis, and devote development time. We invested three months in research and planning, and another three months in implementing the new set-up.'

What were the biggest bottlenecks of the project? Ricardo: 'We started the optimisation by testing the sludge from the flotation tank. Looking back, the hardest part was finding the delicate equilibrium that allowed us to incorporate this sludge in our system without reducing our machine efficiency. To recover all the sludge from our water treatment plant we



Ricardo García

had to make an inversion in our pipe lines, and we reconfigured our equipment. The sludge now goes directly to the hydrapulper. Our perseverance paid off and we managed a reduction of 60% in sludge waste sent to landfill.'



Our priorities and performance

Waste continued

Trimming the trim in France and Russia

In a corrugated plant, one of the main causes of paper waste is caused by the trimming of paper. Trim is the edge of the board that needs to be cut away to prevent issues with the alignment of the three or five paper layers. To reduce trim waste, Smurfit Kappa plants in France and Russia screened their production process and came up with improvements that significantly reduce paper waste at their plants.

Annual paper waste drop of 630 tonnes in France

Smurfit Kappa Vernon in France decided to take up trim reduction on their corrugator, because it accounts for about half of the total waste from this machine. In 2015, the trim waste totalled 3.8% of total plant paper consumption. The team wanted to reduce that to 2.5%.

The first step was to improve the paper alignment between flute and liner paper. A newly-innovated sensor was installed on a motorised carriage to exactly determine the position of the cover paper's edge and to compare it to the fluting paper. The value of misalignment is communicated to the splicers, to realign the paper.

The second step optimised the trim by improving good practices, followed by a third step of stabilising the process and reducing the minimum trim. All the efforts paid off, resulting in a significant reduction in paper waste at Smurfit Kappa Vernon of 630 tonnes per year. By the end of October 2016 the trim waste had already dropped to 2.7%.

Russia saves 480 tonnes trim waste in six months

Smurfit Kappa plants in Vsevolozhsk and Kommunar joined forces to reduce their trim waste. This was an urgent matter, as is easily understood considering that only 1% of trim waste translates into over 500 tonnes of discharged paper for the two operations.

The team discovered that the paper reel widths was not always optimally used on the corrugator, that there was a possibility to cut back on the technological trim, and that design changes in sheet optimisation could also have an impact.

Manufacturing corrugated sheets normally requires an edge trimming of 15-20 mm of the blank sheet, but sometimes this 'rule' can be omitted since edge quality does not matter for the die-cut press. Design improvements further contributed to the solution. Examples include decreasing internal dimensions of boxes with flexible pouches and making gluing flaps smaller. In just six months Vsevolozhsk and Kommunar were able to reduce trim waste by 480 tonnes in just six months.



The amount of non-hazardous waste generated per tonne of paper and board in our mills decreased by 2% in 2016, in comparison to 2015, not including the newly acquired mills in Brazil. Since 2013 this figure has decreased by 10%.

The total amount sent to landfill from our paper and board mills decreased slightly in 2016, compared to 2015. From 2013 until the end of 2016, our mills reduction of waste sent to landfill was 13.3% per tonne of produced paper and board. This figure does not include the new Brazilian mills, which are being integrated into the Group's reporting structures.

Less than one percent of our waste is classified as hazardous, most of which is ink sludge from printing and converting operations and some irregular hazardous wastes generated during mill and plant maintenance. Per operation, the amount of hazardous waste is fairly small. Through our hazardous waste assessment, we learned that the key issue we must address is the correct classification of waste. Many materials are being treated as hazardous even if they do not meet the criteria or concentration, and thus should be regarded as non-hazardous. We are working on addressing this issue.

The amount of hazardous waste has decreased in 2016 compared to 2015 from 7,100 tonnes to 6,800 tonnes for the Group in total.

Work towards optimised use of raw materials

Paper recycling is fundamental for our raw material sourcing, and globally, 75% of our raw material comes from recycled sources. Producing paper from recycled raw material converts our customers' waste into valuable raw material, creating a circular loop at a macro level.

Our converting operations send their paper clippings directly back to our paper mills, thereby delivering high-quality recovered fibre. This helps us keep recovered fibre at maximum quality. The recycled paper from our corrugating and converting operations comes with minimal auxiliary materials, which decreases the amount of waste generated in the recovered fibre pulping process.

Our virgin and recycled paper production processes produce various side streams, most of which are being utilised in a productive way. We continually look for new uses for those side streams, which would otherwise be our waste.

Other uses of our side streams include agriculture, cement, food and pharmaceutical industries, and we continually collaborate with other sectors to find more outlets for our side streams.

The collected waste and by-products from our industry can become new raw materials. A central challenge for our sector is finding a means to process the many auxiliary materials added to paper by downstream industries. Although paper is recyclable, these materials cannot be sorted from paper in the dry-sorting steps before they reach paper mills.

In collaboration with the World Economic Forum Project Mainstream, we developed guidelines for the paper-based industry to improve the recyclability of paper. This ranges from the specifying of paper-based products, and using easily soluble inks and glues to improving opportunities to increase already high recycling rates.

Waste

Scope

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.

Commitment #1

Reduce waste generated at our paper and board mills and sent to landfill by 30% per produced tonne of paper by 2020 in comparison to the baseline year 2013.

Timeframe: Target to be reached by 2020

Progress made: We reached a reduction of 13.3% waste sent to landfill from our paper and board mills in 2016. Projects to avoid unnecessary waste sent to landfill have been started within the Group. One example is a project to reuse ashes in other industries in Cali, Colombia, which has a relatively high level of waste per tonne of paper produced.

Our perspective

We believe the circular economy is the business model for the future, and that we have an important role to play in it. Avoiding waste is a material issue for our stakeholders, and many of our customers have stated objectives to reduce waste.

Our products are designed to prevent loss and damage to the consumer goods they protect. Our packaging is produced efficiently and is 'right-weighted' to optimise resource use and minimise waste. As fibres are made from 100% renewable and recyclable materials, our packaging can be recycled up to approximately eight times. Once fibres are depleted the remaining material is typically used for energy generation or in agriculture.

Given that paper production itself generates almost no waste, it is interesting to consider why waste is so important for our industry. Put simply, our principal raw material – bales of recovered paper – contains unwanted materials such as plastic, metal, textile, wood and sand. These are separated and removed during the water-intensive pulping of recovered paper fibres.

Our goal is to abolish all avoidable waste from our production system and limit the waste sent to landfill of materials that can no longer be recycled or recovered.



Overview



Our approach to sustainable business



Our priorities and performance



Supporting data



Supplementary information



Our priorities and performance

People

People

To be one of the world's leading paper-based packaging businesses, our global production and services must go hand in hand with strong sustainability and corporate social responsibility performance.

Summary

- We are a good corporate citizen to employees and communities, in accordance with UN guidelines
- The People Strategy offers work satisfaction, engagement and development in a meritocratic, safe environment of respect and diversity, ensuring gender equality
- On an annual basis we provide numerous training programmes to our people in the countries where we operate including the 'Open Leadership' programme developed with the INSEAD business school (France)
- We consult our employees through the MyVoice survey, which inspired 1,200 local actions and three global commitments
- Consultation with our workers has improved safety; Lost-Time Accident frequency has decreased by 10% since 2015
- During 2016 we donated over €5 million to community projects, especially for disadvantaged children

The success of all these elements depends on our own people, and the people that we interact with or have an impact upon, directly or indirectly. We strive not only to be well-respected by our employees and customers, but also to earn the respect of the people and communities where we are active. In this way, we contribute to the following SDGs: No poverty (No 1), Quality education (No 4), Gender Equality (No 5), Decent work and Economic Growth (No 8), Reduced Inequalities (No 10), and Sustainable cities and communities (No 11). It is of great importance to us to act as a good corporate citizen.

People Values

To achieve sustainable long-term success, our aim is to attract and retain the best people by being a leading and attractive employer. Smurfit Kappa unites some 45,000 people around the globe, and together our employees make a difference for our customers. At Smurfit Kappa we are committed to make a difference for our team, and actively support them to realise their personal goals and full professional potential.

Smurfit Kappa is committed to managing its business in accordance with its declared values. We recognise that good social citizenship, reflected in how we interact with our employees, business partners and host communities, is an essential ingredient in creating and maintaining a sustainable future.

Smurfit Kappa fosters meritocracy and respect, in a safe and open work environment. In keeping with the United Nations Declaration of Human Rights and the Fundamental Principles and Rights at Work developed by the International Labour Organisation, the following

principles and conditions are maintained in every country in which we have a presence.

Respect

We value the contribution our employees make to the business. Smurfit Kappa is committed to creating and maintaining a working environment which is safe, respects individuality, is non-discriminatory, appoints and promotes people on suitability, rewards fairly, encourages personal and professional development, and has effective mechanisms of communication.

Higher participation of women

Smurfit Kappa's policy is to strive for an increasing level of participation of women in management roles within the Group. We reviewed the areas and roles where the retention and further advancement of women has the greatest potential for success. We promote female participation in our management training programmes – in our Graduate Programme, for instance, female participation is 57% and in the Advanced Management Development programme, the participation rate of women has increased and is stable at 30% since 2015. We also pay extra attention to female managers and people with high potential when reviewing our succession plans.

Working fairly

We prohibit child labour. We will not employ, in any capacity, anyone who has not reached the minimum school leaving age or the minimum age for employment in any country in which we operate. No issues under this heading were identified in 2016. We do not approve or tolerate forced labour or physical abuse, from ourselves or from those with whom we do business.

Fair pay, compensation and benefits

We compensate fairly, and review wage and salary levels at regular intervals. Smurfit Kappa does not discriminate between genders in terms of salary, benefits or any other consideration. We apply the policy of 'same job, same pay'.

We reward employees based on market best practice. When the salary of an individual employee differs from a colleague's in a similar role, this will be because of, for example, differences in responsibility, size of job, experience, performance and country of residence.

In common with many large businesses, Smurfit Kappa provides a range of employee benefits. Some, such as maternity and paternity leave, are provided under the legislation of specific countries. Other employee benefits, such as Pension Plans and Life Insurance, form an integral

part of the remuneration package provided by Smurfit Kappa in various countries.

No discrimination

Smurfit Kappa prohibits discrimination on the grounds of race, gender, sexual orientation, age, religion, national origin, disability or other legally protected status in the countries in which we conduct business. One significant incident occurred in 2016, and corrective actions were immediately taken in collaboration with employees and their representatives.

Compliant acquisition practices

Due diligence, in any acquisition process involving Smurfit Kappa, involves an examination of the target organisation's human resource policies and practices. This will be in terms of their compliance with local, national and international laws, and these laws' day-to-day interpretation and application within the organisation.

If any potentially serious issue arises, such as child labour, the acquisition will be reconsidered. There were five acquisitions during 2016, and no such issues arose.

Inclusiveness

We include our employees in three ways:

- **Align:** We want to align our employees behind a strategic focus to maximise value and innovation for our customers, and to deliver operational excellence and results. We do this through training, globally aligned approaches such as Innootools, a focus on capabilities, and health and safety
- **Empower:** We empower and develop our people; we also inspire and engage them in change, and we value diversity
- **Inspire:** We are authentic and consistent across our global and local activities, and we always support our people to embrace a culture of learning.

Helping women return to work in Portugal

A project to help women who have been absent from working life for a long period of time, earned the Smurfit Kappa plant in Sorpel, Portugal, not only much local recognition, but also the compliments of fellow Smurfit Kappa managers across Europe.

Smurfit Kappa Sorpel employs temporary staff, many of whom work on the shop floor, and these jobs were part of this project. One of the women whose life was greatly impacted by the project is Susana Maria Dias Ferreira. She is 41 years old, married, and has two children aged 16 and 14. Both Susana and her husband work, but financial pressure forced her to find a job with better pay and prospects.

Overcome financial difficulties

'I got in contact with Smurfit Kappa through a friend. It offered me the opportunity to solve a tough financial situation that was

getting worse. The job was vital to overcome our financial difficulties, but the truth is that it was more than a financial problem as it also took a huge toll on us emotionally. I will always fight for my family, and do my utmost to keep financial stress at bay. In March of 2016 I joined the Smurfit Kappa Sorpel plant', says Susana. 'I work in the finishing sector of displays, mostly manual work. I like the position. It offers me a very pleasant work environment and is a well-respected job.'

Changed my life around

'I was relieved that after a very insecure time working as a beautician, I now had the chance to turn things around. My first day on the job proved to be extremely busy. I did not have any experience, but gave it my best and worked as hard as possible to keep up. At the end of my shift the shift leader approached me, and smilingly congratulated me for my excellent work. It made me feel very proud, and earned the respect of my colleagues who are keen to team up with me. I take my job as I take life one day at a time and full of energy to make the best of it!', Susana adds.



Our priorities and performance People continued

Freedom of association and collective representation

We support the right of our employees to join trade unions, and the right of representatives to negotiate on their behalf. If freedom of association and collective bargaining are restricted, or employees do not want trade union membership, we will work with them to establish alternative means of representation that are mutually acceptable.

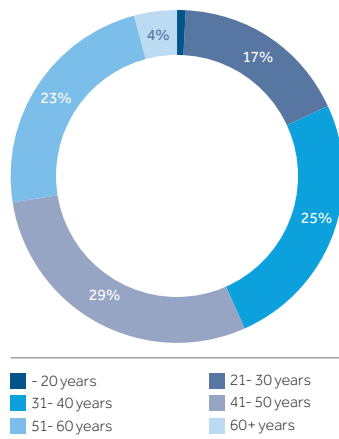
We provide good access for employee representatives, ensuring they do not suffer any disadvantage or discrimination because of their role. We have not had a confirmed case where either the association or bargaining rights of any individual or group of employees have been denied to them in 2016. Collective agreements, currently applicable in some 90% of the Group's sites and covering 74% of our employees, are the result of either local or national negotiations in the countries concerned.

Local Works Councils and the European Works Council

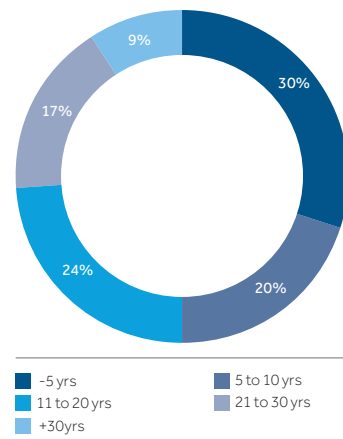
In many countries, Smurfit Kappa conducts formal employee consultations with local Works Councils (WC), and by far the largest representative group in our European operations is the European Works Council (EWC). The EWC, which covers the entire workforce of the Group in the European Union, was created to develop an open two-way communication process with all employees in line with European regulations. An agreement, renewed in January 2017, governs the functioning, rights and duties of the EWC, and will remain in place for four years. During 2016, we had two regular EWC forums and two Select Committee meetings.

The council currently consists of 28 members representing all employees. The procedure for selection, nomination, and election of the various members is determined by national regulations or practices. The EWC is not a negotiating forum, but complements existing local structures where information dissemination and consultation take place. Management is represented by the Chief Executive Officer Europe, appropriate European Divisional

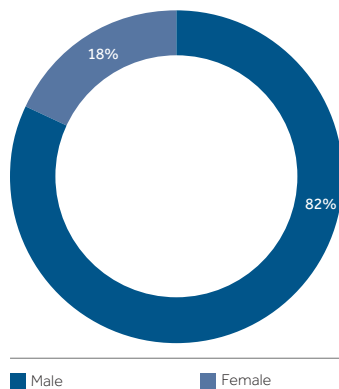
Total employees by age



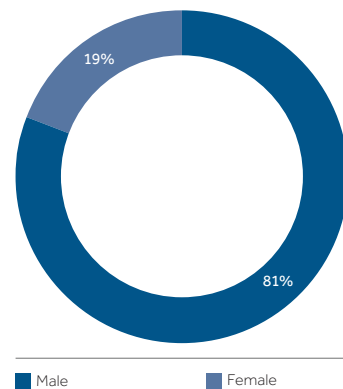
Total employees by length of service



Total Employees by Gender



Management by Gender



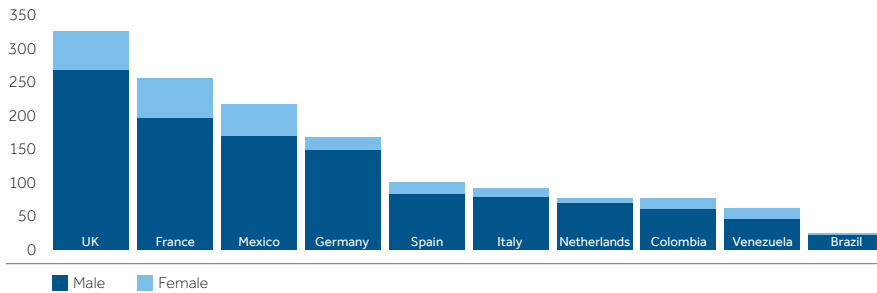
COOs, and assisted by HR representatives (Group VP Human Resources and Europe VP Human Resources).

When changes are proposed, employee consultation takes place promptly, and the impact, along with implementation plans, is discussed with employees and their representatives. Experts, who may be full-time trade union officials, may attend a pre-EWC meeting at the request of the relevant EWC members. When employees or representatives have queries or meeting requests, our policy is to respond in a timely manner.

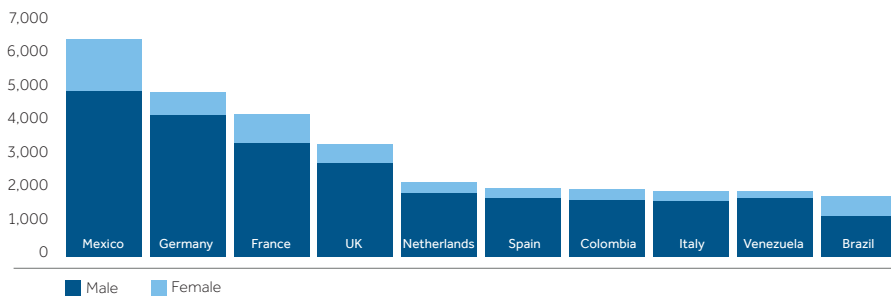
When a local operation ceases, any negative economic effect on its host community is mitigated by actions agreed with local and, if applicable, country, Works Councils. The outcome, reflecting local and national custom, practice, or legislation, will result in one or more of the following: severance pay, career counselling, job search workshops, financial advice, and early retirement schemes.

Where the change has transnational implications, or significantly affects employees in two or more EU member states, a consultation process with the EWC

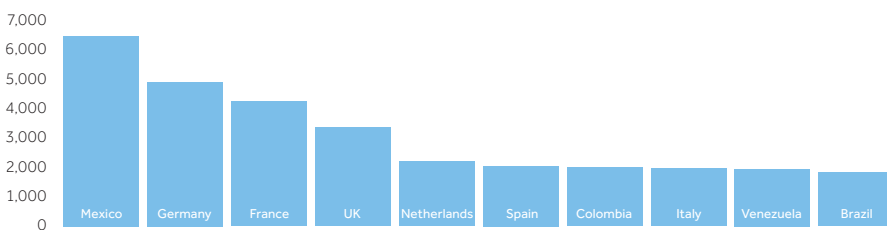
Management Gender - Top 10 countries 2016



Total Employee Gender - Top 10 countries 2016



Top 10 countries headcount 2016



must take place prior to any decision being made.

This is in addition to local and country actions and consultations.

These actions ensure the concerns of our employees are considered whenever an operation is discontinued, without compromising our ability to act appropriately in protecting commercial interests. The period of notice, between initial communications to the employees concerned and introduction of the changes, ranges from 6-24 weeks.

Retired employees

Our retirees have a special relationship with Smurfit Kappa, and we are grateful for their contribution to our success over so many years. Today there are approximately 13,000 Smurfit Kappa pensioners, and there are a variety of different associations in various countries that manage a host of social activities. Such events help to maintain the bonds the pensioners enjoyed as working colleagues, and provide a social platform. While most of the activities are managed by the pensioner associations themselves, there is also Group support at local level.

Employee Profile

At the end of 2016, Smurfit Kappa had some 45,000 employees, including our own employees as well as contracted labour.

Around 43% of our own employees are 40 years old or under, and a third of the total workforce is between 41 and 50. 50% of our employees have been with us for 11 years or more, and 9% have been with Smurfit Kappa for over 30 years. Approximately 6% of our employees are on temporary contracts. In 2016, 18% of all Smurfit Kappa employees were female, 82% were male, and 37% of indirect labour positions are held by women. In the same year, 1% of our workforce took parental leave, of which nearly 80% returned to work after their parental leave period.

Almost 70% of our permanent workforce is involved in production and manufacturing activities categorised as direct labour. Employees engaged in management, administrative or clerical activities – such as sales and marketing, finance, human resources and procurement – are categorised as indirect labour. Of our total direct workforce, 75% are employed in ten countries (Mexico, Germany, France, United Kingdom, The Netherlands, Spain, Colombia, Italy, Venezuela, and Brazil), with the remaining 25% distributed between the other 24 countries where we have a production presence.

During 2016, some seventeen nationalities were represented at the most senior levels in the organisation. While our policy is to select the best person for a position, in practice by far the greater proportion of senior operational positions are held by managers of local nationality, which is appropriate to our business needs. In general, the composition of Smurfit Kappa's workforce typically reflects local ethnic diversity, thereby enhancing the bond with local communities.

Employee turnover in 2016 was stable at 4.1%. Retirement, and the pursuit of other careers or interests, were the main reasons for over 64% of departures of employees, while rationalisation and redundancies accounted for less than 20%. For further detail, please see Social Data table on page 83.

Our priorities and performance

People continued

People Vision and Strategy 2020

As part of our overall business vision, we have developed a People Strategy to attract, engage, develop and retain talented people, offering both employees and potential employees the opportunity to become high-performers and achieve their full potential.

The People Strategy is a key facilitator for achieving our short- and long-term business targets, and is based on six major pillars:

- Talent attraction
- Employee engagement
- Training and leadership development
- Safety and well-being
- Performance review
- Diversity

Talent Attraction

Smurfit Kappa aims to get the right person in the right position at the right time, every time. The underlying process is two-fold: ensuring our existing talent is properly developed, and that the company attracts new talent with the correct skill set.

In terms of talent attraction, recruitment is done in a decentralised fashion by our HR and recruitment teams in each country. They are very familiar with local markets and sources of talent, for example particular schools and universities with which they build long-term, fruitful relationships.

The Group offers many graduate programmes. Some, for example in Colombia, Ireland, Germany and the UK, are well-established, while others are more recent – for example in the Benelux countries, Mexico and Poland. These programmes typically last two years and offer challenging assignments and real jobs,

typically for 6-8 months. The aim is to attract top talent in various disciplines, and offer the candidates the prospect of a long-term career at Smurfit Kappa.

We always place importance on helping employees develop their diverse talents, to drive the company's success.

Employee Engagement

We believe that a company with engaged employees shows better results, higher growth, faster innovation, greater customer satisfaction, and that employees thrive in a working environment they have contributed to. These are the reasons why we launched MyVoice in 2014, our first global employee engagement survey, building on similar surveys already in place across the Group.

MyVoice had an excellent response rate of 80%, or over 34,000 employees, voicing their opinions on their work experience, managers, and working environment, as well as suggesting areas for improvement.

From the survey information, we have designed and implemented over 1,200 actions across the Group, showing that the survey results have led to tangible improvements.

These local actions are in addition to three Group-wide actions, relating to areas that emerged from the survey as main priorities:

- **Communication:** regular communication meetings with employees on the overall performance of the organisation, and any other relevant social issues
- **Recognition:** recognition given to individual employees, or teams at various levels of the organisation, for excellent performance above and beyond their daily role and normal job

- **Career Opportunities:** career progression opportunities for all employees at all levels in the organisation, through internal employment opportunities across the Group.

The next MyVoice survey will be conducted in 2017 as part of a continuous effort to make Smurfit Kappa an even more engaging work environment.

An employee said: 'I really like the fact that, through MyVoice, the opinion of a regular operator is valued, not only that of management. The employee is provided with the opportunity to express an opinion and to actively participate in the solution. That way we can achieve an appealing working atmosphere at all levels.'

Another said: 'MyVoice shows a very good and representative picture of the engagement of all the employees at our plant. With this important information, we can identify the right activities to improve engagement and to become a better place to work.'

A manager said: 'MyVoice is important because it gives the opportunity to all our people to express what they think about the company, about their job and their managers. MyVoice puts our employees 'at the centre'. I like the fact that MyVoice enables me as a manager to improve my role, helping me to understand where I was successful and where I should focus my attention to improve.'

The People strategy is a key facilitator for achieving Smurfit Kappa's business targets, and is based on six pillars



Training and Leadership Development

We believe strongly in offering people, at all levels of the organisation, the chance to increase their skillsets and knowledge, helping them fulfil their potential and widen their career prospects. To achieve this, a broad range of training and development initiatives are driven centrally and at local levels. Overall in 2016, each employee spent on average 20 hours in training.

400 high-potential talents across the Group have successfully finished our Advanced Management Development Programme (AMD) since 2000, and 134 managers have completed our General Manager and Mill Manager Programme (GMMP) since its inception in 2012.

Furthermore, in line with our Brand Strategy, we also embarked on a journey to deliver sales excellence throughout Smurfit Kappa. The strategic objective was to create, communicate and capture value for our customers, who want to see measurable proof of value. One of the key components of this initiative is the "Smurfit Kappa Value Selling Process" (VSP). We have completed over 150 training sessions across Europe, training more than 2,000 sales executives in VSP and over 350 in Value Management and Coaching.

The Graduate Workshop for young talented graduates was successfully piloted in 2016 in Europe. 47 graduates completed this workshop in Europe and the same programme will be launched in the Americas in 2017.

Our business language is English. We work with a leading language school to run up to seven programmes a year to improve the English language skills of non-native English speaking employees, and we offer an e-learning tool. Since 2007, over 500 employees have improved their English with an immersive learning experience, while 1,300 employees have completed the online training. There are also many additional locally delivered programmes which are often the first step in developing new language skills.

During 2015/2016, we launched our new leadership model, 'Open Leadership', helping to identify the leadership qualities we expect our managers to develop, so we can continue to improve performance and anticipate the changing demands of the markets we serve.

Our leadership model is based on four main areas: Leading Self, Leading People, Leading the Organisation and Leading the Market. Nine key capabilities are identified as essential components of the open leadership style we wish to foster in our managers. These enable them to become true leaders, and promote employee engagement.

The Open Leadership training programme was initiated in partnership with INSEAD, the prestigious Fontainebleau business school (France), one of the world's largest executive education providers with a top spot in the Financial Times rankings for MBA programmes during 2016 and 2017. More than 60 managers have already started the programme during 2016, and two new groups will join in 2017. The programme will continue over the following years, until we achieve coverage of our entire global management population of over 400 managers.

In addition to that, many countries are also designing and implementing similar leadership programmes for local middle managers, supervisors and shift leaders – for example, in Colombia, the UK, the Netherlands and Germany.

— In **Germany**: We implemented a comprehensive programme on Open Leadership that covers the areas of Leading Self and Leading People. The programme familiarises local managers with the Smurfit Kappa Open Leadership Model, and will encourage them to reflect on their current leadership skills to improve their leadership behaviour. It consists of a three-day workshop, with a follow-up day several months later, to reflect on experience and progress. Each workshop includes fifteen participants, from all levels of

management in the country. It has been extended to Austria, Switzerland and The Netherlands (Roermond). We plan ten workshops per year in 2017 and 2018

— In the **Netherlands**: We have implemented a leadership training programme aligned with the Open Leadership model. It is called SKYPE – Smurfit Kappa Young Professional Expedition, and supports the leadership evolution of local general managers and recently-appointed mill managers. It covers the areas of Leading Self, Leading People and Leading the Organisation, in three modules of two to three days each. Training in the classroom is supported by external coaching and company visits. We run one session per year, and ten participants attended in 2016

— In **Colombia** and **Central America**: a full set of leadership and training programmes have been implemented to support the personal and professional development of local managers. Areas covered include:

- How to be recognised as a good manager from direct reports
- How to build and lead high performing teams
- How to develop Open Leadership capabilities and promote effective leadership

More than 200 managers attended these programmes in 2016 across the region, including Costa Rica, Ecuador, El Salvador and the Dominican Republic.

Performance Management

Smurfit Kappa is committed to the continuous personal and professional development of all its people. To deliver on this commitment there is a continual dialogue between employees and managers, focusing on the skills, capabilities, strengths and areas of improvement of each employee.

We recently reviewed our Performance Appraisal practices, renaming them as



Our priorities and performance
People continued

INSEAD and equivalent leadership training

Smurfit Kappa implements INSEAD and equivalent leadership training programmes at a local level for alignment purposes, and to support the personal and professional development of local managers. The goal is to teach Open Leadership capabilities to managers so that everyone is on the same page and talks the same language. Smurfit Kappa helps managers reflect on the way they lead their teams, and shows how they can improve their leadership behaviours even further. Two participants reflect on their experiences with the programme.



Plant and mill managers were the first to participate in the programme directly at INSEAD business school (France), followed by country and cluster CEO's. Smurfit Kappa country organisations have started to design and implement similar leadership programmes for local middle managers, supervisors and shift leaders.

Jennifer Victory is Group Compliance Manager, and participated in two Open Leadership modules. 'The first module focused on Leading Self and Leading People, and the second on Leading the Organisation and the Market', says Jennifer. 'They offered us an opportunity to learn from and interact with colleagues from across operations in an open learning environment. The course provided me with new insights, and combined theory with experiential learning very effectively. In a changing environment, it is important to understand yourself and embrace learning on a continual basis. It is not just what you say, but how you say it. Open



Leadership training equips our leaders to thrive in difficult and changing circumstances.'

Financial Director Argentina & Chile, Pablo Luque, agrees and adds: 'It is valuable to interact with a wide variety of colleagues from different cultures, both professionally and personally. The course is the best training I have experienced, and promotes our Open Leadership model by teaching us skills to create a better overview of difficult situations, plan effectively, and to deal with group dynamics. It addresses feelings, being authentic, inspiration and understanding to be able to develop yourself and the team in a continuous process. Alignment of all these aspects enables me to successfully grow in my interaction with employees and customers.'



'Performance Dialogue', and stressing the two-way nature of this communication between managers and employees. Among the outcomes is an agreed-upon development plan for employee progression.

Appraisal is a key element in our performance-management process, and its main objective is to enable every employee to reach their performance potential, contribute to their team, and meet Smurfit Kappa's overall objectives.

We aim to increase the number of employees engaging in Performance Dialogue, with the long-term goal of all our employees taking part.

To participants in our Open Leadership programme and GMMP programme, we also offer the opportunity to be part of a 360 degree feedback exercise. In this, not only their managers, but also their colleagues and peers assess their leadership styles, and identify areas for improvement.

Diversity

Smurfit Kappa promotes all forms of diversity at all levels in the organisation, as we strongly believe it enriches our company's perspective, improves corporate performance, increases shareholder value and aids achieving our objectives.

There are three main areas of interest we have identified in relation with diversity:

- Attracting and retaining people who enrich diversity within the company
- Ensuring our culture and management systems are aligned with, and promote, the attainment of diversity
- Monitoring, reviewing and reporting on the achievement of diversity within the company, with a specific focus on gender diversity.

Diversity is now embedded in our 'Open Leadership' model as one of the nine leadership capabilities: 'Open up and make the most of diversity'. Our leaders value diversity, appreciating and utilising the range of ideas that come from a diverse team.

Through our engagement survey 'MyVoice', we are aware of the perspectives of our entire 45,000-person workforce on diversity and inclusion, with specific questions on this subject.

Although within Smurfit Kappa diversity is approached in a broad sense, including all common forms of diversity, a specific focus is ensured on gender gaps. We want to accomplish an equal gender balance in our graduate programmes, and aim to have at least 30% women as shortlisted external candidates in management vacancies. All vacancies and job descriptions are formulated to demonstrate that we are an equal opportunity company, embracing a diverse workforce.

Our company is continuously progressing in this area, and, under the current policy, we believe we are establishing a number of good practices. We keep our eyes open for successful diversity practices in other companies, and continually take on board new information from research in this important area.

Health and Safety

The well-being of our employees is of the utmost importance to Smurfit Kappa. Our top management is committed to more comprehensive accident reporting across the Group, improving awareness of precise reporting requirements within plant management, and closer monitoring by divisional and group management of the Health and Safety of our people.

Smurfit Kappa has a structured and systematic approach to Health and Safety, through which we aim to continuously improve our safety performance. The commitments described in our updated Group Health and Safety policies are consistent with those of the internationally recognised OHSAS 18001 occupational Health and Safety system application.

We are committed to promote and ensure safe behaviour and well-being: reporting near-misses and taking pre-emptive action to prevent accidents, reducing lost-time

accidents and injury rate by 5% annually over 2013-17, and achieving zero fatalities. We have an unwavering commitment to the Health and Safety of our workforce.

Key to our approach are the following principles and measures:

- Educating and engaging safe behaviour through training, briefings, sharing incident information, and having Health and Safety regularly on the meeting agendas of management and employees
- Rewarding Health and Safety through our annual 'Excellence in Health and Safety' awards programme
- Promoting technical and engineering improvements, and benchmarking performance internally
- Conducting cross audits in Health and Safety with our panel of trained internal Health and Safety coordinators.

The management of critical hazards with potentially severe or fatal consequence continues to be a key priority. All serious accidents undergo a detailed accident investigation where deeper underlying causes are identified. It is established practice that Group management immediately receives a preliminary serious accident notification. A safety incident bulletin is prepared and shared across all divisions.

When compared with 2015, the Group has recorded the following Health and Safety performance changes in 2016:

Europe:

- We restructured the business by product stream, and took this as an opportunity to strengthen Health and Safety by recruiting a European VP for Health and Safety
- The new business structure was used to set up a new European Health and Safety forum, to promote consistency and share good practice



Our priorities and performance People continued

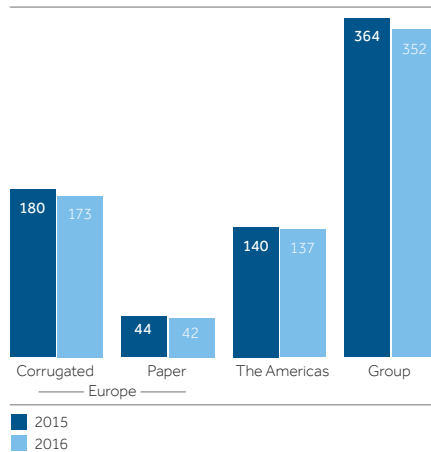
- We embarked on a journey of making safety one of our core operational values, rather than just a priority
- We focused on ensuring we learn from our mistakes, with a stronger culture of accident investigation
- During the April 28th Safety Day, we involved employees and contractors in activities on all of our sites
- We conducted the Safety Opinion Survey. Our employees' feedback on safety improvement rose by 11.18%, from 49.2% in 2014 to 54.7% in 2016. The safety perception of our employees has therefore improved, despite the inclusion of new acquisitions

- The frequency of lost time accidents decreased by 3.8% from 0.52 in 2015 to 0.50 in 2016 in the European region
- The number of lost time accidents decreased by 4% from 224 in 2015 to 215 in 2016
- Of our 252 operations, a total of 134 reported zero lost time accidents
- Regrettably, one contractor at our Ibi site in Spain suffered a fatal injury whilst using a mobile work platform.

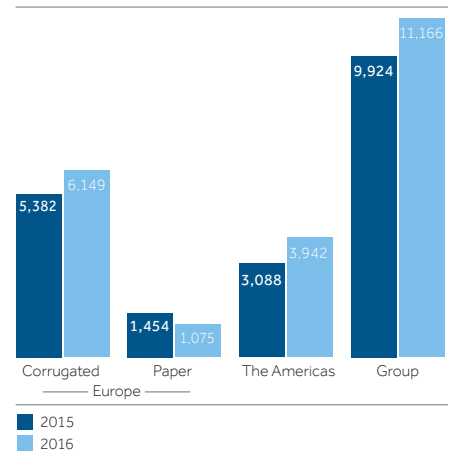
The Americas:

- All our operations continued to update and improve Risk Assessments and accident investigations at all our sites
- We continued to work on creating a Safety Culture among all our employees by promoting self-awareness, leading by example and providing the necessary resources for their daily duties
- During the April 28th Safety Day we involved employees, their families and contractors in activities at all our sites
- We conducted the Safety Opinion Survey, and 74% of our employees gave us feedback for improvement. Results indicated that the safety perception of our employees has improved, despite the inclusion of new acquisitions

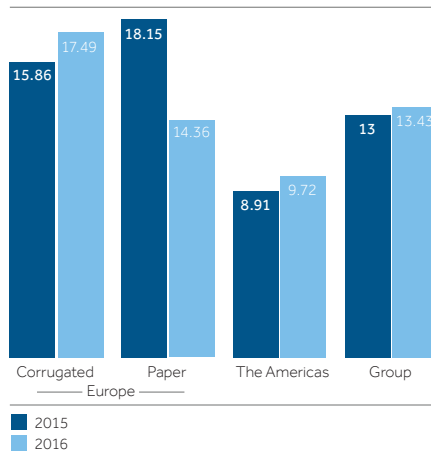
Number of accidents
Full year 2015 vs 2016



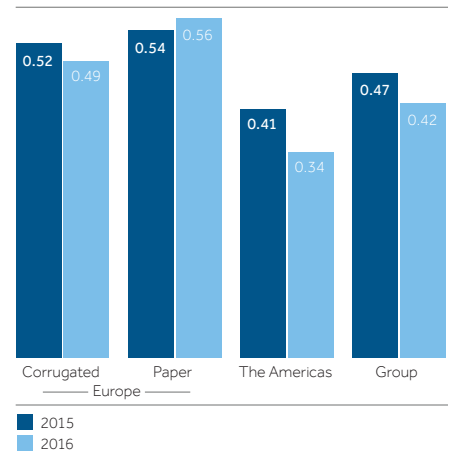
Days lost due to accidents
Full year 2015 vs 2016



Lost time accident severity rate
Full year 2015 vs 2016



Lost time accident frequency rate
Full year 2015 vs 2016



- The number of lost time accidents decreased by 2%
- The frequency of lost time accidents decreased by 17% in The Americas region
- Of our 117 operations, a total of 55 reported zero lost time accidents

- Regrettably, one employee at Los Reyes Mill in Mexico had a fatal injury when a paper bale collapsed over him. We have revised our material handling procedures at our sites and adjusted all our mills' operations.

Walk the walk with BOSS Safety Talks

Claudio Costa works as EHS manager for Smurfit Kappa Italy. He is passionate about his job and is continuously looking for ways to further improve health and safety. He joined forces with a specialised consulting firm and together they developed their own system dubbed BOSS Safety Talks.



Marco Perciballi, Supervisor converting department, leads a BOSS talk with Marco Pompei, Operator Martin Line 618.

Talk the talk, walk the walk. Back up your words with actions, that is exactly what BOSS Safety Talks promotes. During 2016 Smurfit Kappa Italy performed over 4,000 observations, resulting in 1,000 hours of managers, supervisors and operators talking about safety. 'The method is easy and effective', says Claudio. 'The goal is to change unsafe behaviour and reinforce safe behaviour. I found the most effective way to confront a person with behaviour at work is to speak to him/her personally. A short observation by a colleague, followed by a

dialogue. Not in the office, but right at the spot where the person operates.'

Involve & Share

BOSS Safety Talks does not require much investment in terms of money, but does require personal attention. 'The next step is observations not only conducted by Health and Safety people, but that employees take turns in evaluating each other, and addressing unsafe behaviour. That requires proper training, just like 160 supervisors were trained at the start of the project. We organised an intensive

training day and coached the plant safety coordinators of our 22 plants throughout Italy. We provided them with supporting materials such as an instructional video, and the necessary checklists. In a pilot, two plants now also have received access to a BOSS IT-platform to better document and monitor behaviour.'

Significant Results

Employees are usually monitored three times a year. BOSS Safety Talks meetings are short, usually lasting only 15 minutes. Widespread use in Italy was initiated after three years of experience with the system at the Smurfit Kappa plants in Lunata and Massa Lombarda. Claudio continues: 'The implementation at those locations resulted in a 60% drop in LTA. In general, 90% of work related accidents are linked to behaviour. The combination of employee involvement and sharing best practice, fuels the success of BOSS Safety Talks. BOSS is an acronym for Behaviour Observation Safety System.'

Safety roll-out

Now that over 2,000 Smurfit Kappa employees in Italy work with BOSS Safety Talks, it is time to focus attention on temporary personnel and people from on-site contractors. Claudio concludes: 'We have managed a 30% reduction in accidents since we introduced the methodology in January 2016 for all Smurfit Kappa locations in Italy. I am convinced that we can further improve in the coming years, as the system becomes even better integrated and the attitude of our people will be positively influenced in the long-term.'



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A true game-changer in Brazilian health and safety

In December 2015 Smurfit Kappa acquired operations in Brazil opening the door to a huge market for paper-based packaging solutions. The acquisition provided an integration challenge, as our Health and Safety standards differed from those of the previous owners. Our goal was to offer the new 1,700 Brazilian Smurfit Kappa colleagues the protection that is standard at all our plants. A creative training approach enabled us to quickly create a new and lasting safety culture, which was enthusiastically embraced by employees from all factory levels.



Januária de Vita and Deize Martins

Throughout the region, we developed a series of initiatives to support the implementation of four words that we consider vital for safety: STOP, ASK, THINK, and ACT. Regionally the terms are known as the 4P's because the words start with the letter P in Spanish and Portuguese (Pare, Pergunte-se, Pense, Prossiga). The most successful awareness initiative was a game developed by John J. Lozano and his

co-workers. He has been working for Smurfit Kappa Colombia for 25 years and is currently employed as a maintenance assistant. His high impact game approach teaches employees safe and unsafe actions and conditions and the importance of always applying the 4P's.

1,033 trainees in 1 month

The HR leaders in Brazil embraced the safety game to promote fundamental

knowledge for an effective safety culture and embedding the 4P's in the day-to-day activities of employees at work and home. An all-day "train the trainers" session was organised in Rio de Janeiro in April with Health and Safety teams from Brazil, Argentina and Chile. The objective and methodology was explained, tools were shared, and all attendees played the game and had a turn at conducting it as well. Just one month later 1,033 people from the operations in Brazil had been trained in the 4P's.

Part of our daily actions

Deize Martins, HR manager for Smurfit Kappa INPA, shares: 'Safety became part of our daily actions, mostly after the 4P's training day. With the use of this simple game Smurfit Kappa reached every employee. Once they understood the message, we had taken the first step! Nowadays, the 4P's training is part of the integration process, and taught to all new employees. They learn why safety is a core value, and how to identify unsafe acts and conditions.'

Importance of taking care

Januária de Vita, print process technician, received the training and states: 'One day, my husband was waiting for me at home with my nine-month old son in his arms, but it was in vain because I had an accident at work. Today, my son is five years old and it was only after the 4P's training that I realised how my behaviour affected the accident. Now, I think of my safety first, how I can work in a safe way and how important my safety is for my colleagues and myself. I have my part, and my colleagues should do theirs, so we can go home and be with our beloved families. I keep myself safe for my husband and son.'



Challenges

One of the most important challenges for Smurfit Kappa is attracting top talent, to ensure a strong and enduring talent pipeline for internal succession planning and leadership continuity. Due to the nature of our industry, and the business-to-business environment in which we operate, competition with companies with stronger brand awareness means Smurfit Kappa needs to identify new ways to recruit talent, with specific focus on younger people and 'Millennials'. In addition, many of our operations are in rural areas with relatively low population density, making it a daily challenge to recruit people with the professional qualifications we need for certain jobs. Due to the nature of our industry, attracting female applicants is a specific challenge and there we have dedicated programmes to promote recruitment of female talent, making sure we get the best people for our company.

Since the launch of our first company-wide engagement survey 'MyVoice' in September 2014, employee engagement has become one of the pillars of our business strategy wherever we operate. Increasing the level of engagement in the company, and maintaining good workplace environments is one of our main challenges, and specific programmes and processes are in place to ensure progress in this area. We strongly believe that a company with engaged employees can show better results, higher growth, faster innovation and greater customer satisfaction, in line with our values of respect and authenticity as good employer towards all our 45,000 employees.

The health and safety of every member of our workforce is a daily challenge for us. Our health and safety performance improved in 2016 with a reduction in the number of accidents compared to previous years, due to health and safety actions and initiatives implemented during the year. The continual challenge is the pursuit of zero accidents globally, to make Smurfit Kappa the safest company to work for in our industry. We strive to position Health and Safety as a value, to be continually reinforced in the hearts and minds of all our managers and employees.

We use our social investment initiatives to make a positive contribution towards the economic and social development of the communities in which we are active. The challenge is to keep generating well-being and improvement through our core business in areas that are vital for the future, such as education, income generation, collaboration, and participation. This way we can make positive and lasting changes in the communities with which we are privileged to work.

Communities

We engage with, and actively support, local communities through our Smurfit Kappa Foundations and local operations. Internally and externally we adhere to high ethical and professional standards, making the well-being of people a priority throughout our organisation.

Community Involvement

Smurfit Kappa invests significantly in its host communities, contributing to their economic and social development. We also consider the concerns of wider communities at national and international level. Community involvement builds trust, and serves as a link to issues important to us. Local general managers are expected to represent the company as part of the local community, and play a positive part in its development. We focus on self-help initiatives, education and health programmes, and contribute through financial donations and volunteering by local employees.

Smurfit Kappa Foundation

The Smurfit Kappa Foundation supports projects in countries where we operate, with focus on disadvantaged children's health and nutrition, basic care, and early education. Currently, the Foundation supports many such projects in Colombia, Germany, Ireland, The Netherlands, Italy and the UK.

Although no central record is kept of charitable donations by our operations, we estimate that as a Group, including our Smurfit Kappa Foundation, over €5 million was donated in cash and kind in 2016. This was for a wide range of activities, including children's education, health and social inclusiveness projects, and research into areas such as biodiversity.



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People



Health and Safety

Boundary: Health and Safety reporting applies to our own employees. When applicable to subcontracted labour workers this is specifically indicated.

Commitment:

- Zero fatalities
- Injuries: reduce the lost-time and injury rate by 5% annually for the period of 2013-2017
- Provide regular Health and Safety training to employees and sub-contractors
- Promote and ensure safe behaviour of our employees and sub-contractors
- Embed process safety in the way we design, develop and operate all our sites

Timeframe: Continuous

Progress made: Regrettably, there was one fatal accident within the Group at our Los Reyes mill (Mexico) and another with our contractor in Ibi (Spain). The LTA frequency rate decreased by 10% compared to 2015, however the LTA severity rate increased by 3.3%.

Our perspective: We believe that a safe and healthy workplace is the fundamental right of every person, and also a business imperative. We are committed to maintaining a productive and safe workplace in every part of our company by minimising the risk of accidents, injuries and exposure to health hazards for all our employees and sub-contractors.

Citizenship

Boundary: All Smurfit Kappa operations both in Europe and the Americas

Commitment:

- Strive to offer employees at all levels of the organisation the chance to increase and broaden their skillsets and knowledge, helping them to fulfil their potential and widen their career prospects
- Strive to stimulate and encourage employee engagement by regularly surveying our employees company-wide, and following up appropriately
- Maintain a good faith reporting policy ("Whistle blower Code"), where employees can safely report any unethical or illegal conduct they perceive within the Group
- Support and respect the protection of internationally proclaimed human rights
- Not engage in child labour, and disengage from suppliers that do
- Support freedom of association, and the recognition of the right to collective bargaining
- Not engage in forced and compulsory labour, or employment discrimination on the grounds of race, colour, gender, sexual orientation, age, religion, disability or national origin
- Work against corruption in all its forms, including extortion and bribery

Timeframe: Continuous

Progress made: Progress in these areas have been discussed in the **chapters People and Ethically and responsibly.**

Our perspective: We believe that everyone at Smurfit Kappa, the employees and the employer, is committed to reach our business objectives through expertise, innovation and performance. We want to be recognised as a great place to work by our current employees and as one of the employers of choice by our prospective employees.

Community involvement

Boundary: The local communities or regions where we have the privilege to operate

Commitment:

Smurfit Kappa and our related Foundations aim to contribute to end the cycle of poverty and dependence that exist in some of the communities and countries in which we operate by investing in social and research projects.

- Focus on the education of (disadvantaged) youth
- Focus on (scientific) research in areas related to our business, for example forestry and biodiversity
- Benefit the local communities in which we operate

Timeframe: Continuous

Progress made: Our management teams in sites throughout the Group and its related Foundations have undertaken local community initiatives and supported voluntary work, ranging from charity fundraising and social inclusiveness investments to volunteering activities in local projects and activities. We contributed over €5 million in 2016.

Our perspective: We believe that a company can only prosper when it is an integral part of the society it operates in. Therefore, investing in these communities and helping them flourish is important to us, with a particular focus on people who have less opportunity to succeed. By supporting our communities we help to focus their resources to stay vital and flourishing.



Community Inclusivity

Our operations and our related foundations supported projects that help young people to remain involved in society with funding of some €5million.



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
Supporting data





Supplementary information


Supporting data



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Supporting data Input/Output 2016

Europe

Input

Wood and fibre

Wood ⁽¹⁾	5,038	ktonnes ar
Market virgin pulp	94	ktonnes ar
Other pulp	28	ktonnes ar
Recovered Paper	4,110	ktonnes ar
Paper or Board purchased	1,658	ktonnes ar
Plastic films, other plastic item (BIB)	23	ktonnes
Starch (all types)	262	ktonnes ar
Inorganic raw materials	225	ktonnes ar
Other organic raw materials	178	ktonnes ar

Energy

Energy from fossil fuels	27,784	TJ
Energy from purchased biofuels	4,363	TJ
Electricity from grid	1,757	GWh

Water

Water intake ⁽²⁾	88	Mm ³
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Notes

(1) wood & sawmill chips as delivered to the mill

(2) water intake includes rainwater and waste water from another operation

ktonnes ar: kilotonnes as received

* partly produced with SKG paper or board

Output

Production

Papers (all grades)	4,788	ktonnes
Corrugated Packaging *	4,802	ktonnes
Board and laminated Boards *	567	ktonnes
Converted Board *	128	ktonnes
Sacks *	–	ktonnes
Other packaging	22	ktonnes

Direct emissions to air

CO ₂ fossil	1,651	ktonnes
CO ₂ biogenic	3,199	ktonnes
Dust from fuels	0.45	ktonnes
SO _x from processes	0.9	ktonnes
NO _x from processes	3.7	ktonnes

Energy output

Electricity to third party	307	GWh
Thermal energy to third party	202	TJ
Biomass sold	1,465	TJ

Wastes

Hazardous wastes	5.6	ktonnes
Non Hazardous Wastes sent to landfill	220	ktonnes
Non Hazardous wastes recovered	302	ktonnes
Other Non Hazardous wastes	8.1	ktonnes

Discharges to water

Water released	81	Mm ³
COD	21	ktonnes
BOD	7.7	ktonnes
Total Suspended Solids	3.8	ktonnes
N	0.52	ktonnes
P	0.08	ktonnes

The table reports total energy consumption of the site, taking into account the fuels used to produce electricity and/or thermal energy sold externally. This results in different figures for these parameters compared to those on pages 76 – 78. The latter pages show the energy consumption for the production of the paper or board manufactured.

The Americas

Input

Wood and fibre

Wood ⁽¹⁾	951	ktonnes ar
Market virgin pulp	5.8	ktonnes ar
Other pulp	21.35	ktonnes ar
Recovered Paper	1,397	ktonnes ar
Paper or Board purchased	492	ktonnes ar
Plastic films, other plastic item (BIB)	2.1	ktonnes
Starch (all types)	55	ktonnes ar
Inorganic raw materials	76	ktonnes ar
Other organic raw materials	55	ktonnes ar

Energy

Energy from fossil fuels	16,605	TJ
Energy from purchased biofuels	2,304	TJ
Electricity from grid	863	GWh

Water

Water intake ⁽²⁾	34	Mm ³
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Notes

(1) wood & sawmill chips as delivered to the mill

(2) water intake includes rainwater and waste water from another operation

ktonnes ar: kilotonnes as received

* partly produced with SKG paper or board

The table reports total energy consumption of the site, taking into account the fuels used to produce electricity and/or thermal energy sold externally. This results in different figures for these parameters compared to those on pages 79 – 80. The latter pages show the energy consumption for the production of the paper or board manufactured.

Output

Production

Papers (all grades)	1,438	ktonnes
Corrugated Packaging *	1,497	ktonnes
Board and laminated Boards *	140	ktonnes
Converted Board *	66	ktonnes
Sacks *	45	ktonnes
Other packaging	2.1	ktonnes

Direct emissions to air

CO ₂ fossil	1,066	ktonnes
CO ₂ biogenic	762	ktonnes
Dust from fuels	0.14	ktonnes
SO _x from processes	2.2	ktonnes
NO _x from processes	1.7	ktonnes

Energy output

Electricity to third party	–	GWh
Thermal energy to third party	–	TJ
Biomass sold	–	TJ

Wastes

Hazardous wastes	1.3	ktonnes
Non Hazardous Wastes sent to landfill	267	ktonnes
Non Hazardous wastes recovered	37	ktonnes
Other Non Hazardous wastes	4.9	ktonnes

Discharges to water

Water released	31	Mm ³
COD	20	ktonnes
BOD	6.6	ktonnes
Total Suspended Solids	4.8	ktonnes
N	0.46	ktonnes
P	0.05	ktonnes



Supporting data
Environmental data 2016

Paper and board mills Europe

		Nettingsdorf, Austria	Sangüesa, Spain	Cellulose du Pin, France	Piteå, Sweden	Morava, Czech republic	Wrexen, Germany ⁽⁵⁾	Hoya, Germany ⁽⁵⁾	Zülpich, Germany	Mengibar, Spain
		kibkl, tI	mg paper, tI	bkl, wtkl, wttI	bkl, wtkl	tI, fl	wttI, sb, tI, fl	fl, tI, cart	fl, tI	fl, tI, wttI
Production	ktonnes	442	61	479	692	65	317	442	494	205
Energy										
Electricity										
Co Generated	GWh	156	56	320 (1)	323	-	70	85	180	103
Self generated	GWh	-	-	-	-	-	-	-	-	-
Hydro power	GWh	-	-	-	-	1.6	0.2	-	-	-
Net Grid supply	GWh	121	79	59	265	21	27	89	13	-(2)
Total electricity	GWh	277	134	379	587	23	97	174	193	103
Fuel usage										
Biofuels	TJ	3,592	2,225	8,611	10,113	15	55	69	264	41
Fossil fuels	TJ	1,135	176	670	160	321	1,541	2,236	3,147	1,491
Total fuels	TJ	4,727	2,401	9,281	10,273 (3)	336	1,596	2,305	3,411	1,533
Water withdrawal										
Surface	Mm ³	12.5	4.8	8.6	33.3	0.4	0.6	-	1.5	1.6
Ground	Mm ³			0.8		0.0	0.8	2.2	0.4	-
Grid	Mm ³	0.0	0.0	0.0	0.1	0.0	-	0.2	0.0	0.0
Total water ⁽⁴⁾	Mm ³	12.7	5.0	9.5	33.8	0.4	1.4	2.3	2.0	1.6
Discharges										
To air										
CO ₂ fossil direct	ktonnes	65	12	38	15	18	87	126	246	84
CO ₂ fossil indirect	ktonnes	20	19	4	3	11	13	43	6	-
CO ₂ biogenic	ktonnes	396	241	1,017	1,091	1	4	7	29	6
Dust	tonnes	31.0	8.1	29.3	314.2	0.1	0.0	0.0	0.2	1.1
NO _x as NO ₂	tonnes	252	125	622	696	10	43	88	209	415
SO _x as SO ₂	tonnes	22	145	109	56	7	0	5	90	48
To water										
Process water	Mm ³	4.86	4.55	9.96	12.00	0.26	0.41	1.78	-	1.22
Cooling water	Mm ³	7.34	-	-	21.93	-	0.56	0.02	0.87	-
COD	tonnes	7,513	308	4,025	2,032	24	91	283	-	306
BOD	tonnes	4,535	57	1,046	397	1	5	16	-	14
Total Suspended Solids	tonnes	665	145	603	249	5	3	56	-	104
Total N	tonnes	41.9	28.2	90.7	40.4	6.4	0.4	17.4	-	49.3
Total P	tonnes	3.6	4.8	20.8	14.4	0.5	0.2	1.6	-	2.4
Wastes										
Total Non hazardous wastes	tonnes	21,934	20,303	44,942	34,794	7,859	15,374	33,399	21,340	25,982
Landfill	tonnes	3,663	13,427	10,454	2,480	4,314	-	-	11,301	25,895
Recovery	tonnes	18,268	6,876	34,488	32,314	3,544	15,374	32,051	10,039	87
Other	tonnes	2	-	-	-	-	-	1,347	-	-
Hazardous wastes	tonnes	297	83	571	220	2	57	70	49	41

Notes

(1) CHP partly or totally outsourced

(2) electricity exported by CHP

(3) part of heat exported outside the Group

(4) Total water includes rainwater and waste water from another organisation

(5) Both Hoya and Wrexen consist of two mills on one site. Data are aggregated data per site.

Water discharges: in italic mills that do not discharge their process water to surface

Alfa D'Avignon, France	Rethel, France	Saillat, France	Ania, Italy	Roermond, the Netherlands	SSK, United Kingdom	Townsend Hook, United Kingdom	Baden Karton, Germany	Herzberger, Germany	Nervión, Spain	Total mills
tl	tl	fl, tl	fl, tl	tl, fl	tl, fl	fl, tl	cart	sb	sack paper, kl	
72	63	261	220	566	213	208	144	259	153	5,356
-	-	19	73	120	61	76 (1)	63	73	120	1,897
0.0	-	-	-	-	-	-	-	-	0.0	0.0
-	-	1.6	-	-	-	-	1.3	0.8	-	5.4
28	24	92	-(2)	36	-(2)	4	-(2)	17	65	938
28	24	113	73	155	61	80	64	90	185	2,841
-	32	29	24	160	50	40	-	-	2,900	28,220
374	314	1,336	1,397	2,718	1,291	1,726	1,082	1,621	108	22,844
374	346	1,365	1,421	2,878	1,341	1,767	1,082	1,621	3,008	51,064
0.7	-	1.9	-	1.9	-	0.9	1.5	4.3	2.4	76.8
-	0.4	-	1.6	-	1.0	-	-	0.0	-	7.2
-	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.7
0.7	0.5	1.9	1.6	2.1	1.1	0.9	1.5	4.3	2.6	85.8
21	18	76	79	154	73	97	61	92	7	1,367
2	2	6	-	16	-	2	1	8	16	173
2	3	4	2	13	5	5	-	-	332	3,160
0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.0	53.4	443.1
36	29	73	60	132	134	216	24	35	374	3,572
8	1	2	1	12	1	3	1	18	301	830
0.55	0.37	1.56	1.38	1.51	0.89	0.62	1.24	1.36	1.83	46.36
-	-	-	-	-	-	-	0.09	2.79	-	33.61
24	28	202	124	238	2,624	101	137	124	1,560	19,743
2	2	13	18	6	754	6	6	8	371	7,256
2	6	73	13	23	1,144	25	14	25	145	3,298
27.3	3.5	20.6	15.6	21.5	103.5	17.7	2.8	1.8	1.2	490.3
1.8	0.6	1.2	1.0	2.3	19.1	0.6	0.2	0.3	0.3	75.8
4,387	3,294	16,512	25,828	34,968	22,741	30,848	16,677	24,164	79,667	485,011
4,314	992	16,459	6,797	2,266	12,038	23,286	-	199	76,401	214,287
72	2,302	54	19,031	32,517	10,702	7,562	16,677	23,965	3,266	269,189
-	-	-	-	185	-	-	-	-	-	1,535
15	2	11	26	23	27	10	32	21	13	1,569

bkl: brown kraftliner
cart: carton board
fl: recycled fluting

mg paper: machine glazed paper
sb: solid board
tl: testliner

wtk: white top kraftliner
wtt: white top testliner
N/A: not available



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Operations total Europe

		Paper & Board mills	Integrated corrugated operations	Other packaging operations	Other operations	Total operations
Production	ktonnes	5,356	4,492	461	2,416	
Energy						
Electricity						
Co-Generated	GWh	1,897	-	-	-	1,897
Self-generated	GWh	0	-	-	-	0
Hydro power	GWh	5	-	-	-	5
Net Grid supply	GWh	938	526	91	3	1,559
Total electricity	GWh	2,841	526	91	3	3,462
Fuel usage						
Biofuels	TJ	28,220	129	-	-	28,350
Fossil fuels	TJ	22,844	4,087	167	79	27,176
Total fuels	TJ	51,064	4,216	167	79	55,526
Water withdrawal						
Surface	Mm ³	76.8	0.0			76.8
Ground	Mm ³	7.2	0.3	0.0		7.5
Grid	Mm ³	0.7	1.3	0.1	0.0	2.1
Total water ⁽¹⁾	Mm ³	85.8	1.7	0.1	0.0	87.6
Discharges						
To air						
CO ₂ fossil direct	ktonnes	1,367	233	10	6	1,616
CO ₂ fossil indirect	ktonnes	173	171	32	1	377
CO ₂ biogenic	ktonnes	3,160	14	-	-	3,174
Dust	tonnes	443	3	0	0	447
NO _x as NO ₂	tonnes	3,572	82	4	4	3,661
SO _x as SO ₂	tonnes	830	36	1	4	871
To water						
Process water	Mm ³	46.4	0.6	0.0	-	47.0
Cooling water	Mm ³	33.6	0.1	0.0	0.0	33.7
COD ⁽²⁾	tonnes	19,743	1,766			21,499
BOD ⁽²⁾	tonnes	7,256	464			7,719
Total Suspended Solids ⁽²⁾	tonnes	3,298	460			3,758
Total N ⁽²⁾	tonnes	490	30			520
Total P ⁽²⁾	tonnes	76	1			77
Wastes						
Total Non hazardous wastes	tonnes	485,011	29,578	5,889	8,893	529,370
Landfill	tonnes	214,287	4,174	607	567	219,635
Recovery	tonnes	269,189	19,634	4,711	8,104	301,637
Other	tonnes	1,535	5,770	571	222	8,098
Hazardous wastes	tonnes	1,569	3,424	510	47	5,551

Notes

(1) Total water includes rainwater and waste water from another organisation

(2) Sum of available data (for mills details are reported in individual tables)

Paper and board mills the Americas

		Bernal, Argentina fl, tl	Coronel Suárez, Argentina fl, tl	Bento, Brazil (2) fl	Pirapetinga, Brazil (2) tl, fl, wttl	Uberaba, Brazil (2) tl, fl	Cali, Colombia p&w, sack p, bkl, carton, sc fl, tl, pulp, wtkl	Barranquilla, Colombia tl, fl	Barbosa, Colombia fl, tl	Los Reyes, Mexico fl, tl, carton	Cerro Gordo, Mexico tl, carton, fl	Monterrey, Mexico fl, tl	Caracas, Venezuela carton, tl	Valencia, Venezuela carton	San Felipe, Venezuela sc fl, bkl	Forney, USA tl, fl	Total mills
Production	ktonnes	73	48	38	130	46	267	65	78	81	308	33	8	20	74	311	1,579
Energy																	
Electricity																	
Co Generated	GWh	-	-	-	-	-	221	35	23	-	-	-	-	9	81	30	399
Self generated	GWh	-	-	-	-	-	-	-	-	-	-	-	0	24	8	-	33
Hydro power	GWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Grid supply	GWh	34	15	16	61	29	108	3	16	50	163	19	5	4	16	115	656
Total electricity	GWh	34	15	16	61	29	329	38	39	50	163	19	6	37	105	145	1,088
Fuel usage																	
Biofuels	TJ	-	-	233	1,011	472	4,536	-	-	-	-	-	-	-	632	560	7,445
Fossil fuels	TJ	401	214	0	42	6	5,207	671	559	582	1,397	246	125	953	3,346	1,268	15,016
Total fuels	TJ	401	214	233	1,053	478	9,743	671	559	582	1,397	246	125	953	3,978	1,829	22,461
Water withdrawal																	
Surface	Mm ³	0.2	-	0.1	1.5	0.4	21.1	1.2	0.7	-	-	-	0.2	-	-	-	25.2
Ground	Mm ³	0.7	0.2	-	-	0.1	0.1	-	-	0.3	1.6	0.1	-	0.2	2.5	-	5.9
Grid	Mm ³	-	-	0.0	0.0	-	-	0.0	-	-	-	0.1	0.2	0.1	-	1.0	1.4
Total water ⁽¹⁾	Mm ³	0.9	0.2	0.1	1.5	0.5	21.3	1.2	0.7	0.4	1.6	0.2	0.4	0.3	2.5	1.0	32.7
Discharges																	
To air																	
CO ₂ fossil direct	ktonnes	22.6	12.1	0.0	3.0	0.4	403.0	37.7	38.9	32.7	78.6	13.8	7.0	54.1	192.5	71.2	967.4
CO ₂ fossil indirect	ktonnes	12.6	5.6	2.2	8.2	3.9	19.6	0.6	3.1	25.3	82.5	9.8	1.3	1.0	3.9	56.4	236.1
CO ₂ biogenic	ktonnes	0.9	-	20.1	104.6	48.3	414.2	-	-	-	-	0.2	-	-	87.3	64.4	740.2
Dust	tonnes	0.0	0.1	38.3	34.1	4.6	27.1	1.7	2.9	0.0	5.0	0.0	0.0	0.1	23.3	4.1	141.2
NO _x as NO ₂	tonnes	22.2	13.9	22.5	30.0	12.5	987.5	53.1	36.6	28.0	68.6	5.6	3.3	80.9	188.8	60.2	1,613.6
SO _x as SO ₂	tonnes	7.4	0.1	0.0	22.4	0.0	1,982.6	0.1	84.5	0.0	0.7	0.7	0.0	2.5	6.4	18.6	2,126.1
To water																	
Process water	Mm ³	0.6	0.1	-	1.4	0.3	22.3	1.0	0.5	0.2	1.2	0.1	0.4	0.2	1.0	0.5	29.9
Cooling water	Mm ³	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2
COD	tonnes	43.6	30.8	-	3,882.5	1,380.0	7,303.1	2,634.4	2,309.9	31.4	851.5	14.3	531.0	60.1	497.5	633.1	20,203.3
BOD	tonnes	14.1	5.0	-	1,487.8	76.6	2,022.1	1,441.8	1,026.4	2.0	48.0	2.1	234.1	6.8	62.8	137.0	6,566.5
Total Suspended Solids	tonnes	6.0	10.1	-	141.4	24.5	2,247.9	1,508.4	264.3	1.8	95.5	7.2	391.2	12.9	56.3	57.0	4,824.7
Total N	tonnes	4.9	3.2	-	2.6	0.6	354.8	16.9	6.8	1.1	6.7	1.0	15.1	1.6	13.6	33.5	462.4
Total P	tonnes	0.2	0.1	-	1.7	-	37.4	0.1	0.8	0.4	3.3	0.1	0.6	0.1	1.0	3.7	49.5
Wastes																	
Total Non hazardous wastes	tonnes	7,288	3,134	6,668	21,540	9,574	128,652	2,236	7,960	5,817	41,281	4,376	452	6,816	6,822	35,053	287,669
Landfill	tonnes	7,037	3,123	5,883	20,464	5,784	126,748	2,198	6,460	1,613	18,098	4,292	419	6,718	3,464	34,920	247,220
Recovery	tonnes	29	11	865	36	125	1,712	38	1,500	4,183	23,183	84	33	98	28	134	32,058
Other	tonnes	222	-	-	-	-	192	-	-	21	-	-	-	-	3,330	-	3,766
Hazardous wastes	tonnes	8	12	-	7	2	131	20	8	14	24	5	-	5	23	0	259

bkl: brown kraftliner
sack p: sack paper

P&W: printing and writing grade
sc fl: semi-chemical fluting

wtkl: white top kraftliner
fl: recycled fluting

pulp: virgin pulp sold externally
tl: testliner

cart: carton board

Notes

(1) Total water includes rainwater and waste water from another organisation

(2) We have obtained data from the Brazil mills for Q4 only for water intake, water discharges and wastes. This data has been multiplied by four for this report and not included in result against the targets for accuracy reasons.

Water discharges: in italic mills that do not discharge their process water to surface



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Operations total the Americas

		Paper & Board mills	Other operations	Total operations
Production	ktonnes	1,579	3,451	
Energy				
Electricity				
Co-Generated	GWh	399	-	399
Self-generated	GWh	33	0	33
Hydro power	GWh	-	-	-
Net Grid supply	GWh	656	207	863
Total electricity	GWh	1,088	208	1,295
Fuel usage				
Biofuels	TJ	7,445	219	7,663
Fossil fuels	TJ	15,016	1,589	16,605
Total fuels	TJ	22,461	1,807	24,268
Water withdrawal				
Surface	Mm ³	25.2	0.1	25.3
Ground	Mm ³	5.9	0.3	6.2
Grid	Mm ³	1.4	0.5	1.9
Total water ⁽¹⁾	Mm ³	32.7	0.9	33.6
Discharges				
To air				
CO ₂ fossil direct	ktonnes	967	99	1,066
CO ₂ fossil indirect	ktonnes	236	78	314
CO ₂ biogenic	ktonnes	740	22	762
Dust	tonnes	141	3	144
NO _x as NO ₂	tonnes	1,614	38	1,652
SO _x as SO ₂	tonnes	2,126	37	2,163
To water				
Process water	Mm ³	29.9	0.2	30.1
Cooling water	Mm ³	0.2	-	0.2
COD ⁽²⁾	tonnes	20,203.3	91.6	20,294.9
BOD ⁽²⁾	tonnes	6,566.5	40.3	6,606.8
Total Suspended Solids ⁽²⁾	tonnes	4,824.7	13.0	4,837.7
Total N ⁽²⁾	tonnes	462.4	0.9	463.3
Total P ⁽²⁾	tonnes	49.5	0.1	49.6
Wastes				
Total Non hazardous wastes	tonnes	283,043	26,156	309,199
Landfill	tonnes	247,220	19,738	266,958
Recovery	tonnes	32,058	5,256	37,313
Other	tonnes	3,766	1,162	4,927
Hazardous wastes	tonnes	259	1,017	1,276

Notes

(1) Total water includes rainwater and waste water from another organisation

(2) Sum of available data (for mills details are reported in individual tables)

We have obtained data from the Brazil mills for Q4 only for water intake, water discharges and wastes. This data has been multiplied by four for this report and not included in result against the targets for accuracy reasons.

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Total Group operations

		All operations				
		2016	2015	2014	2013	2012
Energy						
Electricity						
Co-Generated	GWh	2,297	2,239	2,308	2,350	2,405
Self-generated	GWh	33	26	44	33	-
Hydro power	GWh	5	6	6	7	5
Grid supply	GWh	2,422	2,379	2,333	2,330	2,081
Total electricity	GWh	4,757	4,651	4,692	4,720	4,491
Fuel usage						
Biofuels	TJ	36,013	35,232	34,545	34,461	31,936
Fossil fuels	TJ	43,781	42,700	43,320	43,868	44,723
Total fuels	TJ	79,794	77,931	77,865	78,329	76,659
Water withdrawal						
Surface	Mm ³	102	101	101	106	104
Ground	Mm ³	14	14	16	15	16
Grid	Mm ³	4	4	3	3	3
Total water ⁽¹⁾	Mm ³	121	120	121	125	126
Discharges						
To air						
CO ₂ fossil direct	ktonnes	2,683	2,607	2,647	2,681	2,775
CO ₂ fossil indirect	ktonnes	691	678	659	683	584
CO ₂ biogenic	ktonnes	3,936	3,764	3,698	3,716	3,622
Dust	tonnes	590	442	562	561	665
NO _x as NO ₂	tonnes	5,313	5,239	4,887	4,367	4,688
SO _x as SO ₂	tonnes	3,034	2,951	2,728	2,411	3,334
To water						
Process water	Mm ³	77	79	80	81	79
Cooling water	Mm ³	34	32	33	34	34
COD ⁽²⁾	tonnes	41,794	37,690	39,116	38,188	35,665
BOD ⁽²⁾	tonnes	14,326	14,072	12,100	12,253	11,473
Total Suspended Solids ⁽²⁾	tonnes	8,596	9,205	9,840	9,526	7,752
Total N ⁽²⁾	tonnes	983	877	796	888	711
Total P ⁽²⁾	tonnes	126	139	114	86	91
Wastes						
Total Non hazardous wastes	tonnes	838,569	819,448	836,816	906,764	919,084
Landfill	tonnes	486,593	450,107	444,604	512,101	565,346
Recovery	tonnes	338,950	362,165	365,411	363,976	322,712
Other	tonnes	13,025	7,175	26,801	30,686	31,026
Hazardous wastes	tonnes	6,827	7,112	8,767	9,523	12,813

Notes

(1) Total water includes rainwater and waste water from another organisation

(2) Sum of available data (for mills details are reported in individual tables)

We have obtained data from the Brazil mills for Q4 only for water intake, water discharges and wastes. This data has been multiplied by four for this report and not included in result against the targets for accuracy reasons.



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Management system certifications

Forestry, wood sourcing and mills

Europe		Quality management system	Environmental management system	Health and Safety system	Hygiene management for foodstuffs packaging	Energy management system	Chain of custody		
		ISO 9001	ISO 14001	OHSAS 18001	EN 15593	ISO 50001	FSC	PEFC	SFI
Wood Sourcing									
ES	Central Forestal			•			•	•	
FR	Comptoir du Pin Aquitaine			•			•	•	
Virgin mills									
AT	Nettingsdorf	•	•	•	•		•	•	
ES	Nervión	•	•	•	•	•	•	•	
	Sangüesa	•	•	•	•		•	•	
FR	Cellulose du Pin	•	•	•	•		•	•	
SE	Piteå	•	•	•	•(1)	•	•	•	
CZ	Morava	•	•	•	•	•	•	•	
ES	Mengibar	•	•	•	•		•	•	
FR	Alfa D'Avignon	•	•		•		•	•	
	Rethel	•	•		•		•	•	
	Saillat	•	•	•	•		•	•	
DE	Badenkarton	•	•	•	•	•	•	•	
	CD Haupt	•	•	•	•	•	•	•	
	Herzberger	•	•	•	•	•	•	•	
	Hoya	•	•	•	•	•	•	•	
	Zülpich	•	•	•	•	•	•	•	
IT	Ania	•	•	•	•		•	•	
Recycled mills									
NL	Roermond	•	•	•	•	•	•	•	
UK	SSK	•	•	•	•(2)	•	•	•	
	Townsend Hook	•	•	•	•		•	•	
The Americas									
Forestry									
CO	Colombian Forest						•		
VE	Venezuela Forest						•		
Virgin mills									
CO	Cali		•				•		
VE	San Felipe		•				•		
Recycled mills									
AR	Bernal		•				•		
	Coronel Suarez		•				•		
BR	Bento						•		
	Pirapetinga	•					•		
	Uberaba	•					•		
CO	Barbosa		•				•		
	Barranquilla		•				•		
ME	Cerro Gordo	•	•				•		
	Los Reyes	•	•				•		
	Monterrey	•	•				•		
USA	Forney		•				•	•	•
VE	Caracas		•				•		
	Valencia	•	•				•		

(1): FSSC 22000

(2): re-certification audit passed in March 2017

Social data

	2016	2015	2014	2013	2012
Social citizenship					
Total number of employees ⁽¹⁾	45,314	44,599	41,816	40,654	37,757
of whom female (%) ⁽²⁾	18%	17%	17%	17%	16%
Employees leaving the company ⁽³⁾	1,687	1,971	1,675	1,598	1,596
of whom resignation and retirement (%)	64%	62%	62%	59%	53%
Employees joining the company ⁽³⁾	2,054	2,217	1,826	1,743	1,890
Age distribution (%)					
<20 years	1%	1%	1%	1%	1%
21-30 years	17%	17%	16%	16%	16%
31-40 years	25%	25%	25%	26%	26%
41-50 years	29%	30%	31%	31%	32%
51-60 years	24%	23%	23%	22%	22%
>60 years	4%	4%	4%	4%	3%
Employees turnover (%) ⁽³⁾	4.1%	4.9%	4.4%	4.3%	4.7%
Length of service, above 11 years (%)	50%	50%	51%	52%	54%
Females in management (%)	19%	17%	17%	16%	16%
Health and safety					
Lost time accidents (LTA)	352	364	414	405	440
Contractor lost time accidents (CLTA)	45	62	227	na	na
Days lost due to accidents (DLA)	11,166	9,924	11,460	10,211	10,362
Accident severity rate (ASR) (%)	13.43	13%	15%	14%	15%
Frequency rate (FR)*	0.42	0.47	0.55	0.55	0.65
Fatalities					
Own employees	1	0	0	1	0
(Sub)contractors	1	1	1	1	2
Sourcing data					
Number of audits					
Strategic suppliers	20	26	22	23	26
Important suppliers	7	23	21	31	9
Satisfactory scores					
Strategic suppliers	19	21	19	22	26
Important suppliers	4	18	18	28	8

(1): Based on full time equivalent number of employees and contractors.

(2): Based on Smurfit Kappa employees only (excluding contractors).

(3): This data has been derived from the Hyperion Financial Management data system (HFM). Most of the countries in the American region have not yet registered the information on this indicator in HFM. We aim to have this information about joiners and leavers for all countries included in near future.



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Geremías Aguilar and Luis García, Smurfit Kappa Tijana, Mexico

Supplementary information

About this report

The information in this report covers the international activities of the Smurfit Kappa Group for the calendar year 2016 and also includes some information for early 2017, where mentioned specifically. In this report, we cover the business, environmental and social activities at our own operations, as well as our approach to sourcing and how we support our customers' sustainability targets.

The report also describes Smurfit Kappa's vision and approach to sustainability.

At the end of 2016, our operations comprised 367 facilities in 34 countries across Europe and the Americas. Information from all these operations is included in this report excluding the operations acquired in 2016 (see below). For these companies, 2016 data is only included when specifically mentioned in the relevant section of the report.

Employee demographics covers our own employees. Contract labour is only included if specifically indicated.

Acquisitions, divestitures and closures 2016

During 2016, Smurfit Kappa acquired the following companies and/or activities:

- Acquisitions are covered on page 2, **Our year in highlights.**

There were two closures of recovered fibre plants in Venezuela: Guatire (Caracas) and Ciudad Barinas.

Environmental data on the acquired and closed sites is not included in the 2016 data presented in this report. The acquisitions and closures do not significantly impact our targets that are being measured on specific volume performance.

The acquisition of the three paper mills in Brazil (2015) instead has a significant impact on the baseline of the targets that are being measured on specific volume performance. With the purchase of these sites, we have added their data to the 2005 baseline as well as the 2016 data and the 2015 data to which it is compared. Since the mills were acquired at the end of December 2015, they were added to the Group reporting system as of 1 January

2016 as per Smurfit Kappa's reporting rules. However, the sites weren't fully compliant with the Group reporting protocol before the last quarter of 2016. Therefore certain conversions and assumptions explained by the data have been used for the full year data.

Smurfit Kappa applies a two-year integration policy to the acquired operations. The new operations have to obtain certified management systems required by the Group within this period. The operations start to report about the management systems immediately after obtaining the certificate, issued by a third-party. This has the greatest effect on the certified Chain of Custody related reporting.

Apart from the impact on the baseline and reporting of the data of the mills acquired in Brazil, no significant changes in the scope, boundary and measurement methods were applied to the report compared to previous years. For the indicators related to the targets, the Brazilian mills have only been included in the CO₂ emissions and Energy data in 2016 reporting.

The reporting of employee data reflects the situation at the end of 2016.

Topics, issues and targets

Smurfit Kappa fully recognises that sustainable development embraces social and business issues as well as environmental ones. These issues have been selected on the basis of input from various stakeholder groups. Smurfit Kappa collected data from all its manufacturing operations that were operational at the end of 2016 with the exception of the mentioned acquired and closed operations.

Our targets are measured against produced tonnes of paper rather than absolute values as the company is in dynamic growth and also subject to opening and closing facilities. Other information is reported in absolute figures, unless otherwise stated.

Reporting guidelines, data collection

Among the various references used for the development and identification of baseline data included in this report are the G4 Sustainability Reporting Guidelines issued by the Global Reporting Initiative (GRI). GRI is an international independent organisation that helps businesses, governments and other organisations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others.

Every effort has been made to provide data that is as accurate as possible. Data relating to environmental factors is gathered through a Group-wide IT-based reporting system implemented in all Smurfit Kappa operations.

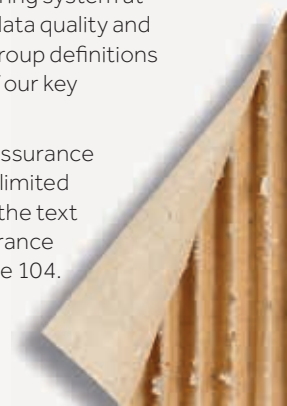
This tool is integrated into the Group's intranet, enabling sites to report their environmental data online according to GRI guidelines. As the information is stored centrally, this allows for easier and faster processing.

We make continuous efforts to increase our data quality. This includes improving the user friendliness of our data collection and developing mill individual reporting protocols, a project completed in 2015.

For the most part, data is based on measured or metered quantities, or on best estimates based on industry knowledge and established calculation factors. CO₂ emission calculations have been based on established fuel consumption and specific CO₂ emission factors. Definitions and calculations for the performance indicators can be found in the glossary on pages 102 – 104.

Ongoing initiatives continue to further standardise the data gathering system at Smurfit Kappa to improve data quality and consistency in the use of Group definitions and scope requirements of our key indicators.

We appointed an external assurance provider, KPMG, to provide limited assurance on the data and the text of the report. KPMG's assurance report can be found on page 104.



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GRI-G4	Description	Source/comment	Page(s)
Strategy and Analysis			
1	Statement from the most senior decision-maker of the organisation (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organisation and the organisation's strategy for addressing sustainability	SDR	4-5
2	Description of key impacts, risks, and opportunities		
Organisational profile			
3	Name of the organisation	SDR	Cover
4	Primary brands, products, and/or services	SDR	Cover flap page,
5	Location of organisation's headquarters	SDR	Outside back cover
6	Report the number of countries where the organisation operates, and names of countries where either the organisation has significant operations or that are specifically relevant to the sustainability topics covered in the report	SDR AR	Cover flap page 10-11
7	Nature of ownership and legal form	AR	55-85
8	Markets served	Website	
9	Report the scale of the organisation, including: Total number of employees Total number of operations Net sales (for private sector organisations) or net revenues (for public sector organisations) Total capitalisation broken down in terms of debt and equity (for private sector organisations) Quantity of products or services provided	SDR AR	Cover flap page 4-5, 10-11
10	a. Report the total number of employees by employment contract and gender b. Report the total number of permanent employees by employment type and gender c. Report the total workforce by employees and supervised workers and by gender d. Report the total workforce by region and gender e. Report whether a substantial portion of the organisation's work is performed by workers who are legally recognised as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors f. Report any significant variations in employment numbers (such as seasonal variations in employment in the tourism or agricultural industries)	SDR	60-62
11	Report the percentage of total employees covered by collective bargaining agreements	SDR	60
12	Describe the organisation's supply chain	SDR	14, 24, 30-38
13	Report any significant changes during the reporting period regarding the organisation's size, structure, ownership, or its supply chain, including: Changes in the location of, or changes in, operations, including facility openings, closings, and expansions Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organisations) Changes in the location of suppliers, the structure of the supply chain, or in relationships with suppliers, including selection and termination	SDR AR	86 140
14	Report whether and how the precautionary approach or principle is addressed by the organisation	AR	60, 142
15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organisation subscribes or which it endorses	SDR	22-23



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GRI-G4	Description	Source/comment	Page(s)
16	List memberships of associations (such as industry associations) and national or international advocacy organisations in which the organisation: Holds a position on the governance body Provides substantive funding beyond routine membership dues Participates in projects or committees Views membership as strategic This refers primarily to memberships maintained at the organisational level	SDR	33
17	a. List all entities included in the organisation's consolidated financial statements or equivalent documents b. Report whether any entity included in the organisation's consolidated financial statements or equivalent documents is not covered by the report The organisation can report on this Standard Disclosure by referencing the information in publicly available consolidated financial statements or equivalent documents	SDR AR	86 156
18	a. Explain the process for defining the report content and the Aspect Boundaries b. Explain how the organisation has implemented the Reporting Principles for Defining Report Content	SDR	28-29
19	a. List all the material Aspects identified in the process for defining report content	SDR	28-29
20	a. For each material Aspect, report the Aspect Boundary within the organisation, as follows: Report whether the Aspect is material within the organisation. If the Aspect is not material for all entities within the organisation (as described in G4-17), select one of the following two approaches and report either: – The list of entities or groups of entities included in G4-17 for which the Aspect is not material or – The list of entities or groups of entities included in G4-17 for which the Aspect is material Report any specific limitation regarding the Aspect Boundary within the organisation	SDR	38, 46, 53, 57, 70
21	a. For each material Aspect, report the Aspect Boundary outside the organisation, as follows: Report whether the Aspect is material outside of the organisation. If the Aspect is material outside of the organisation, identify the entities, groups of entities or elements for which the Aspect is material. In addition, describe the geographical location where the Aspect is material for the entities identified Report any specific limitation regarding the Aspect Boundary outside the organisation	SDR	28-29, 38, 46, 53, 57, 70
22	a. Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements	SDR	86
23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	SDR	86
24	Provide a list of stakeholder groups engaged by the organisation	SDR	20-21
25	Report the basis for identification and selection of stakeholders with whom to engage	SDR	19
26	Report the organisation's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process	SDR	19-21
27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns	SDR	19-21, 30, 40, 48, 54, 58

GRI-G4	Description	Source/comment	Page(s)
Report profile			
28	Reporting period (e.g. fiscal/calendar year) for information provided	SDR	86
29	Date of most recent previous report (if any)	SDR/ 30 May 2016	
30	Reporting cycle (annual, biennial, etc.)	SDR: Annual	86
31	Contact point for questions regarding the report or its contents	SDR	Back cover
32	Report the 'in accordance' option the organisation has chosen	SDR	86
33	<p>a. Report the organisation's policy and current practice with regard to seeking external assurance for the report</p> <p>b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided</p> <p>c. Report the relationship between the organisation and the assurance providers</p> <p>d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organisation's sustainability report</p>		
34	Report the governance structure of the organisation	AR	55-85
35	Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees	SDR	22-24
36	Report whether the organisation has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether postholders report directly to the highest governance body	SDR	22
37	Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body	SDR	19-21
38	Report the composition of the highest governance body and its committees by: Executive or non-executive/Independence/Tenure on the governance body/Number of each individual's other significant positions and commitments, and the nature of the commitments/ Gender/Membership of under-represented social groups/ Competences relating to economic, environmental and social impacts/Stakeholder representation	AR	55-85
39	Report whether the Chair of the highest governance body is also an executive officer	AR	56
40	Report the nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members, including: Whether and how diversity is considered Whether and how independence is considered Whether and how expertise and experience related to economic, environmental and social topics are considered Whether and how stakeholders (including shareholders) are involved	AR	55-85
41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed Report whether conflicts of interest are disclosed to stakeholders, including, as a minimum: Cross-board membership/Cross-shareholding with suppliers and other stakeholders/Existence of controlling shareholder/Related party disclosures	AR	60
42	Report the highest governance body's and senior executives' roles in the development, approval and updating of the organisation's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts	AR	56-58



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GRI-G4	Description	Source/comment	Page(s)
43	Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics	AR	61
44	a. Report the processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics. Report whether such evaluation is independent or not, and its frequency. Report whether such evaluation is a self-assessment b. Report actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, including, as a minimum, changes in membership and organisational practice	AR	62
45	a. Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities. Include the highest governance body's role in the implementation of due diligence processes b. Report whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks, and opportunities	SDR	22-24
46	Report the highest governance body's role in reviewing the effectiveness of the organisation's risk management processes for economic, environmental and social topics	AR	60-64
47	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks and opportunities	AR	62
48	Report the highest committee or position that formally reviews and approves the organisation's sustainability report and ensures that all material Aspects are covered.	SDR AR Website	22 60
49	Report the process for communicating critical concerns to the highest governance body	SDR AR	22 60-64
50	Report the nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them	SDR	22-23
51	a. Report the remuneration policies for the highest governance body and senior executives for the below types of remuneration: Fixed pay and variable pay: Performance-based pay/ Equity-based pay/ Bonuses/ Deferred or vested shares Sign-on bonuses or recruitment incentive payments Termination payments Clawbacks Retirement benefits, including the difference between benefit schemes and contribution rates for the highest governance body, senior executives, and all other employees b. Report how performance criteria in the remuneration policy relate to the highest governance body's and senior executives' economic, environmental and social objectives	AR	71-84
52	Report the process for determining remuneration. Report whether remuneration consultants are involved in determining remuneration and whether they are independent of management. Report any other relationships which the remuneration consultants have with the organisation	AR	71-84
53	Report how stakeholders' views are sought and taken into account regarding remuneration, including the results of votes on remuneration policies and proposals, if applicable	AR	71
54	Report the ratio of the annual total compensation for the organisation's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country	AR	78-79

GRI-G4	Description	Source/comment	Page(s)
55	Report the ratio of percentage increase in annual total compensation for the organisation's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country	AR	79
56	Describe the organisation's values, principles, standards and norms of behaviour such as codes of conduct and codes of ethics	SDR AR	22-23 63
57	Report the internal and external mechanisms for seeking advice on ethical and lawful behaviour, and matters related to organisational integrity, such as helplines or advice lines	SDR Website: Whistleblower policy	22-23
58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behaviour, and matters related to organisational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines	SDR Website: Whistleblower policy	22-23
DMA	a. Report why the Aspect is material. Report the impacts that make this Aspect material b. Report how the organisation manages the material Aspect or its impacts c. Report the evaluation of the management approach, including: The mechanisms for evaluating the effectiveness of the management approach The results of the evaluation of the management approach Any related adjustments to the management approach	SDR AR	28-29 89
Economic indicators			
EC1	Direct economic value generated and distributed	AR	4-5, 94-101
EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change	SDR CDP 2015 Climate Change	40-46 Module: risks and opportunities
EC3	Coverage of the organisation's defined benefit plan obligations	AR	133: Note 24
EC4	Financial assistance received from government a. Report the total monetary value of financial assistance received by the organisation from governments during the reporting period, including, as a minimum: Tax relief and tax credits/Subsidies/Investment grants, research and development grants, and other relevant types of grants/Awards/ Royalty holidays/Financial assistance from Export Credit Agencies (ECAs)/Financial incentives/Other financial benefits received or receivable from any government for any operation b. Report the information above by country c. Report whether, and the extent to which, the government is present in the shareholding structure	AR	109
EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operations a. When a significant proportion of the workforce is compensated based on wages subject to minimum wage rules, report the ratio of the entry level wage by gender at significant locations of operation to the minimum wage b. Report whether a local minimum wage is absent or variable at significant locations of operation, by gender. In circumstances in which different minimums could be used as a reference, report which minimum wage is being used c. Report the definition used for 'significant locations of operation'	SDR	59
EC6	Proportion of senior management hired from local community at significant locations of operation a. Report the percentage of senior management at significant locations of operation that are hired from the local community b. Report the definition of 'senior management' used c. Report the organisation's geographical definition of 'local' d. Report the definition used for 'significant locations of operation'	SDR	60-61



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GRI-G4	Description	Source/comment	Page(s)
EC7	Development and impact of infrastructure investments and services supported a. Report the extent of development of significant infrastructure investments and services supported b. Report the current or expected impacts on communities and local economies. Report positive and negative impacts where relevant c. Report whether these investments and services are commercial, in-kind, or pro bono engagements	SDR AR	42-43, 48 100-101, 140
EC8	Significant indirect economic impacts, including the extent of impacts a. Report examples of the significant identified positive and negative indirect economic impacts the organisation has. These may include: Changing the productivity of organisations, sectors, or the whole economy/Economic development in areas of high poverty/ Economic impact of improving or deteriorating social or environmental conditions/ Availability of products and services for those on low incomes/Enhancing skills and knowledge amongst a professional community or in a geographical region/ Jobs supported in the supply chain or distribution chain/Stimulating, enabling, or limiting foreign direct investment/Economic impact of change in location of operations or activities/Economic impact of the use of products and services b. Report the significance of the impacts in the context of external benchmarks and stakeholder priorities, such as national and international standards, protocols, and policy agendas	AR	30-35
EC9	Proportion of spending on local suppliers at significant locations of operations a. Report the percentage of the procurement budget used for significant locations of operation spent on suppliers local to that operation (such as percentage of products and services purchased locally) b. Report the organisation's geographical definition of 'local' c. Report the definition used for 'significant locations of operation'	SDR	24
Environmental indicators			
EN1	Materials used by weight or volume	SDR	74-75
EN2	Percentage of materials used that are recycled input materials	SDR	36
EN3	Energy consumption within the organisation	SDR	43-44, 76-77, 79-80
EN4	Energy consumption outside of the organisation	SDR	44
EN5	Energy intensity	SDR	43-44, 76-77, 79
EN6	Reduction of energy consumption	SDR	42-44, 76-77, 79
EN7	Reductions in energy requirements of products and services	SDR	14-17, 42-44
EN8	Total water withdrawal by source	SDR	50-51, 76-77, 79
EN9	Water sources significantly affected by withdrawal of water a. Report the total number of water sources significantly affected by withdrawal by type: Size of water source/ Whether or not the source is designated as a protected area (nationally or internationally)/Biodiversity value (such as species diversity and endemism, total number of protected species)/ Value or importance of water source to local communities and indigenous peoples b. Report standards, methodologies, and assumptions used	SDR	51, 53
EN10	Percentage and total volume of water recycled and reused	SDR	16, 48
EN11	Location and size of land by protected areas and areas of high biodiversity value	SDR Website	36-38
EN12	Description of significant impacts of activities, products and services on biodiversity	SDR	36-38
EN13	Habitats protected or restored	SDR Website	36-38

GRI-G4	Description	Source/comment	Page(s)
EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	SDR Website	36-38
EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	SDR	76-77, 79
EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	SDR	76-77, 79
EN17	Other relevant indirect greenhouse gas emissions by weight	SDR	44
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	SDR	40-47
EN19	Reduction of greenhouse gas (GHG) emissions	SDR	Cover flap page, 2, 4, 40, 43, 47
EN20	Emissions of ozone-depleting substances by weight	SDR	76-77, 79
EN21	NO _x , SO _x and other significant air emissions by type and weight	SDR	76-77, 79
EN22	Total water discharge by quality and destination	SDR	76-77, 79
EN23	Total weight of waste by type and disposal method	SDR	76-77, 79
EN24	Total number and volume of significant spills	SDR	No significant spills in 2016
EN25	Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel convention 2 Annex I, II, III and VIII and percentage of transported waste shipped internationally	SDR	76-77, 79
EN26	Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the organisation's discharges of water and runoff a. Report water bodies and related habitats that are significantly affected by water discharges based on the criteria described in the Compilation section below, adding information on: Size of water body and related habitat Whether the water body and related habitat is designated as a protected area (nationally or internationally) Biodiversity value (such as total number of protected species)	Website	
EN27	Extent of impact mitigation of environmental impacts of products and services	SDR	30-38
EN28	Percentage of products sold and their packaging materials that are reclaimed by category	SDR	Smurfit Kappa produces packaging materials for other industries
EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	SDR	21-22
EN30	Significant environmental impacts of transporting products and other goods and materials for the organisation's operations, and transporting members of the workforce	SDR	44
EN31	Total environmental protection expenditures and investments by type a. Report total environmental protection expenditures by: Waste disposal, emissions treatment, and remediation costs Prevention and environmental management costs	SDR	48
EN32	Percentage of new suppliers that were screened using environmental criteria a. Report the percentage of new suppliers that were screened using environmental criteria	SDR	24, 83



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GRI-G4	Description	Source/comment	Page(s)
EN33	<p>Significant actual and potential negative environmental impacts in the supply chain and actions taken</p> <p>a. Report the number of suppliers subject to environmental impact assessments</p> <p>b. Report the number of suppliers identified as having significant actual and potential negative environmental impacts</p> <p>c. Report the significant actual and potential negative environmental impacts identified in the supply chain</p> <p>d. Report the percentage of suppliers identified as having significant actual and potential negative environmental impacts with which improvements were agreed upon as a result of assessment</p> <p>e. Report the percentage of suppliers identified as having significant actual and potential negative environmental impacts with which relationships were terminated as a result of assessment, and why</p>	SDR	24, 83
EN34	<p>Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms</p> <p>a. Report the total number of grievances about environmental impacts filed through formal grievance mechanisms during the reporting period</p> <p>b. Of the identified grievances, report how many were:</p> <p>Addressed during the reporting period</p> <p>Resolved during the reporting period</p> <p>c. Report the total number of grievances about environmental impacts filed prior to the reporting period that were resolved during the reporting period</p>	SDR	22-23
<p>Respecting the environment we operate in, is part of our Code of Business Conduct. We collect grievances about environmental impacts filed, addressed and resolved through our environmental questionnaire (See About this report, page 86). We record all non-compliances with our permits regardless of a form of grievance mechanism. In 2016, no significant grievances were reported.</p>			
Labour practice indicators			
LA1	Total number and rates of new employee hires and employee turnover	SDR	60-69, 83
LA2	<p>Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation</p> <p>a. Report the benefits which are standard for full-time employees of the organisation but are not provided to temporary or part-time employees, by significant locations of operation. These include, as a minimum:</p> <p>Life insurance/Health care/Disability and invalidity coverage/ Parental leave/Retirement provision/ Stock ownership/Others</p> <p>b. Report the definition used for 'significant locations of operation'</p>	SDR	60-69
LA3	<p>Return to work and retention rates after parental leave, by gender</p> <p>a. Report the total number of employees that were entitled to parental leave, by gender</p> <p>b. Report the total number of employees that took parental leave, by gender</p> <p>c. Report the total number of employees who returned to work after parental leave ended, by gender</p> <p>d. Report the total number of employees who returned to work after parental leave ended who were still employed twelve months after their return to work, by gender.</p> <p>e. Report the return to work and retention rates of employees who took parental leave, by gender</p>	SDR	Parental leave is entitled to any employee within the national legislation and agreements, paid and/or unpaid. Smurfit Kappa had 490 employees on parental leave during 2016 (of which 332 men and 158 women). In 2016, 401 employees returned from parental leave, of which 289 men, and 112 women.
LA4	Minimum notice period(s) regarding significant operational changes	SDR	60
LA5	<p>Percentage of total workforce represented in formal joint management / worker health and safety committees that help monitor and advise on occupational health and safety programs</p> <p>a. Report the level at which each formal joint management-worker health and safety committee typically operates within the organisation</p> <p>b. Report the percentage of the total workforce represented in formal joint management-worker health and safety committees</p>	SDR	60

GRI-G4	Description	Source/comment	Page(s)
LA6	Type of injury and rates of injury, occupational diseases, lost days, absenteeism, and total number of work-related fatalities, by region and by gender	SDR	67-68, 70
LA7	Workers with high incidence or high risk of diseases related to their occupation a. Report whether there are workers who are involved in occupational activities who have a high incidence or high risk of specific diseases	SDR	67-68, 70, 83
LA8	Health and safety topics covered in formal agreements with trade unions a. Report whether formal agreements (either local or global) with trade unions cover health and safety b. If yes, report the extent, as a percentage, to which various health and safety topics are covered by these agreements	SDR	60
LA9	Average hours of training per year per employee by gender, and by employee category	SDR	65
LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	SDR	21, 60
LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	SDR	63, 65-66
LA12	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	SDR	58-70
LA13	Ratio of basic salary of men to women by employee category	SDR	59
LA14	Percentage of new suppliers that were screened using labour practices criteria	SDR	24
LA15	Significant actual and potential negative impacts for labour practices in the supply chain and actions taken a. Report the number of suppliers subject to impact assessments for labour practices b. Report the number of suppliers identified as having significant actual and potential negative impacts for labour practices c. Report the significant actual and potential negative impacts for labour practices identified in the supply chain d. Report the percentage of suppliers identified as having significant actual and potential negative impacts for labour practices with which improvements were agreed upon as a result of assessment e. Report the percentage of suppliers identified as having significant actual and potential negative impacts for labour practices with which relationships were terminated as a result of assessment, and why	SDR	24
LA16	Number of grievances about labour practices filed, addressed, and resolved through formal grievance mechanisms a. Report the total number of grievances about labour practices filed through formal grievance mechanisms during the reporting period b. Of the identified grievances, report how many were: Addressed during the reporting period Resolved during the reporting period c. Report the total number of grievances about labour practices filed prior to the reporting period that were resolved during the reporting period	SDR	23, 59



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GRI-G4	Description	Source/comment	Page(s)
Human rights indicators			
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	SDR	59
HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained a. Report the total number of hours in the reporting period devoted to training on human rights policies or procedures concerning aspects of human rights that are relevant to operations b. Report the percentage of employees in the reporting period trained in human rights policies or procedures concerning aspects of human rights that are relevant to operations	SDR	Employees have received training on Group's Code of Business Conduct which covers human rights in 2013-2014 when the latest code was published. New employees receive training and information when beginning their employment. See SDR 2014 p. 26.
HR3	Total number of incidents of discrimination and actions taken	SDR	23, 59
HR4	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	SDR	24
HR5	Operations with significant risk for incidents of child labour, and measures taken to eliminate	SDR	24, 58-59
HR6	Operations with significant risk of forced or compulsory labour, and measures to eliminate	SDR	59
HR7	Percentage of security personnel trained in the organisation's policies or procedures concerning aspects of human rights that are relevant to operations	N/A	
HR8	Incidents of violations involving rights of indigenous people and actions taken	SDR	58-59
HR9	Percentage and number of operations subject to human rights reviews	SDR	58-59
HR10	Percentage of new suppliers that were screened using human rights criteria	SDR	24, 83
HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken	SDR	24, 83
HR12	Number of grievances related to human rights addressed and resolved	SDR	23, 58-59
Social			
SO1	Percentage of operations with implemented local community engagement, impact assessments and development programmes	SDR	21, 69
SO3	Percentage and total number of business units analysed for risks related to corruption	SDR	22-23
SO4	Percentage of employees trained in organisation's anti-corruption policies and procedures	SDR	22-23
SO5	Confirmed incidents of corruption and actions taken a. Report the total number and nature of confirmed incidents of corruption a. Report the total number and nature of confirmed incidents of corruption b. Report the total number of confirmed incidents in which employees were dismissed or disciplined for corruption c. Report the total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to corruption d. Report public legal cases regarding corruption brought against the organisation or its employees during the reporting period and the outcomes of such cases	SDR	22-23

GRI-G4	Description	Source/comment	Page(s)
SO6	Total value of political contributions by country and recipient/ beneficiary a. Report the total monetary value of financial and in-kind political contributions made directly and indirectly by the organisation by country and recipient/beneficiary b. Report how the monetary value of in-kind contributions was estimated, if applicable	SDR	23
SO7	Total number of legal actions for anti-competitive behaviour, anti-trust and monopoly practices and their outcomes	SDR	23
SO8	Monetary value of significant fines and total number of non- monetary sanctions for non-compliance with laws and regulations	SDR	23
SO9	Percentage of new suppliers that were screened using criteria for impacts on society	SDR	24, 83
SO2	Operations with significant actual and potential negative impacts on local communities Report operations with significant actual and potential negative impacts on local communities, including: The location of the operations The significant actual and potential negative impacts of operations	SDR	Flap cover page, 21, 69
SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken a. Report the number of suppliers subject to assessments for impacts on society b. Report the number of suppliers identified as having significant actual and potential negative impacts on society c. Report the significant actual and potential negative impacts on society identified in the supply chain d. Report the percentage of suppliers identified as having significant actual and potential negative impacts on society with which improvements were agreed upon as a result of assessment e. Report the percentage of suppliers identified as having significant actual and potential negative impacts on society with which relationships were terminated as a result of assessment, and why	SDR	24
SO11	Total number of grievances about impacts on society filed through formal grievance mechanisms during the reporting period	SDR	23
Product responsibility indicators			
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures	SDR	10-17
PR2	Incidents of non-compliance with regulations and voluntary codes on health and safety impacts of products and services during their life cycle, by type of outcomes	SDR	22-23
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	SDR	Not applicable. Our products are business to business and in general no such information is required.
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes	SDR	Not applicable. Our products are business to business and in general no such information is required.
PR5	Practices related to customer satisfaction, including results of surveys that measure customer satisfaction	SDR	14-15, 19-20



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GRI-G4	Description	Source/comment	Page(s)
PR6	Sale of banned or disputed products a. Report whether the organisation sells products that are: Banned in certain markets The subject of stakeholder questions or public debate b. Report how the organisation has responded to questions or concerns regarding these products	SDR	Not applicable. Our products are not under such regulations or public debate.
PR7	Total number of incidents of non-compliance with regulations and voluntary codes on marketing communications, including advertising, promotion and sponsorship by type of outcomes	SDR	22-23
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	No substantiated complaints identified.	
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	No material fines and/or substantiated claims for non-compliance with laws or regulations concerning the provision and use of products and services were identified	

Business in the community Ireland

Commentary on the Smurfit Kappa Sustainable Development Report 2016

Smurfit Kappa Group's tenth annual Sustainable Development Report is an important milestone for a company with 45,000 employees in 34 countries, 367 production sites, 300 global strategic suppliers and revenue in 2016 of €8.2 billion.

It is evident that sustainability is embedded in the fabric of Smurfit Kappa operations. The company's commitment to transparency, stakeholder engagement, the circular economy, innovation and continuous improvement is palpable throughout.

We were particularly interested this year to see the organisation map its strategy against the UN Sustainable Development Goals. As noted by Tony Smurfit in his introduction, "the profitable companies of the future will be the ones that align business goals with the needs of the world around them".

Seeking to be ever resource efficient, Smurfit Kappa is producing packaging solutions with a closed loop focus, not just in their own operations but in collaboration with customers and suppliers.

For customers striving to integrate the goals of sustainability into their own operations, Smurfit Kappa must surely be the supplier of choice. As a leading provider of paper-based packaging solutions, they use a 100% renewable, primary raw material that is fully recoverable for recycling. Organic by-products of production processes are used as biofuel.

In analysing customer packaging needs, supply chain challenges and logistic issues, Smurfit Kappa delivers a tailored solution that calculates the carbon footprint of the packaging life cycle. The result is increased efficiency, reduced waste and most importantly, reduced cost.

From this report, Smurfit Kappa is well on its way to achieving many of its 2020 targets. 90.1% of packaging is Chain of Custody Certified. Per tonne of paper since 2005, Smurfit Kappa has achieved a reduction of 22.9% of fossil CO₂ emissions and 31.9% of the COD (Chemical Oxygen Demand) in their water discharge. Since 2013, the amount of waste sent to landfill has reduced by 13.3%. Biofuels now account for 48.5% of the paper mills fuel mix.

We were impressed by the initiative to digitalise transport management to reduce CO₂ emissions, by examining freight demand, combining freight loads and using alternative modes of transport. In 2016, this yielded cost savings for Smurfit Kappa of €1 million. The potential of this cloud-based transportation platform is immense when made available to other freight sourcing companies.

Sourcing of materials, goods and services is the single largest cost item for Smurfit Kappa which in 2016 was €4.9 billion. Worth noting, considering the company's size and reach, is that 74% of supplier deliveries are classified as local. Risk mapping of suppliers continues and in 2016, 75 supplier audits were performed.

With regard to employee consultation, we were interested to see that the Group-wide actions are to 1) enhance internal communications; 2) increase recognition for excellent performance; and 3) increase career opportunities for staff. These three areas of focus are common in leading companies continuously striving to improve every facet of operations.

We noted the company policy to strive for an increasing level of participation of women in management roles across the group and that a broad range of training and development initiatives are driven both centrally and locally. The Open Leadership training programme (run in partnership with INSEAD in France) is likely to pay dividends in the long term.

Even with a relentless focus on health & safety, it still presents a challenge with a fatality of an employee at a mill in Mexico and a contractor in Spain.

Smurfit Kappa's commitment to sustainability is its key differentiator in the marketplace. Now a FTSE 100 company, Smurfit Kappa also holds an impressive array of sustainability credentials, most recently, being added to the STOXX Global ESG Leaders Index.

Over the last 10 years, Smurfit Kappa has made massive strides on its sustainability journey. Further to the intensive materiality assessment conducted in 2016, we look forward to seeing what Smurfit Kappa is capable of achieving over the next decade with its continued focus on sustainable forest management, the circular economy, tailored solutions for customers and a strong emphasis on leadership development.



Tina Roche.
Chief Executive,
Business in the Community Ireland



Overview



Our approach to sustainable business



Our priorities and performance



Supporting data



Supplementary information

Supplementary information

UN Global Compact

Smurfit Kappa became a supporter of the United Nations Global Compact ('UNGC'), a worldwide corporate citizenship initiative, in 2010.

As a network of more than 12,000 corporate participants and other stakeholders in some 170 countries, it is the largest voluntary corporate responsibility initiative in the world. Supporters of the UNGC promote ten core principles in the areas of human rights, labour, environment and anti-corruption. These principles are listed in the table below.

As a part of this commitment, Smurfit Kappa will report on the Company's

corporate responsibility activities and performance in an annual Communication on Progress (COP), using the annual Sustainable Development Report as the platform for this communication.

The Sustainable Development Report provides a number of examples of ongoing activities, as well as relevant key performance indicators, which illustrate Smurfit Kappa's support for the ten Global Compact principles in its everyday business. Measurements of performance related to the Global Compact principles are given using indicators provided by the Global Reporting Initiative (GRI), wherever

feasible. In particular, GRI performance indicators relating to human rights, labour and anti-corruption principles are presented in the Social Development section while environmental performance indicators reported in the Environment section. A complete GRI index can be found on pages [91] to [95] of the Report.

The following table shows how our performance in relation to each UN Global Compact principle can be reported using a number of GRI performance indicators. This is based on guidance documents published by the UN Global Compact.

UNGC principles	GRI indicators
Human Rights	
1 Businesses should support and respect the protection of internationally proclaimed human rights; and	HR1-11, LA5, LA7-8, LA13-15, PR8
2 Businesses should make sure that they are not complicit in human rights abuses.	HR1-11
Labour	
3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	LA4-5
4 Businesses should uphold the elimination of all forms of forced and compulsory labour;	HR7
5 Businesses should uphold the effective abolition of child labour;	HR6
6 Businesses should uphold the elimination of discrimination in respect of employment and occupation.	EC7, LA2, LA13-15, HR4
Environment	
7 Businesses are asked to support a precautionary approach to environmental challenges;	EC2, EN18-19, EN26-27
8 Businesses should undertake initiatives to promote greater environmental responsibility; and	EN1-30, PR3-4
9 Businesses should encourage the development and diffusion of environmentally friendly technologies.	EN2, EN5-7, EN10, EN18-19, EN26-28
Anti-corruption	
10 Businesses should work against corruption in all its forms, including extortion and bribery.	SO2-4



Glossary

Climate change, energy and air emissions

Biofuels	Fuels coming from biomass: wood rejects, bark, black liquor, pitch oil, certain parts of mixed wastes and biogas produced during the anaerobic treatment of water.
Black liquor	Residue from pulping containing organic compounds (like lignin). This residue is burnt to produce energy and to recover the chemicals.
Carbon dioxide equivalent CO₂-eq	A measure used to compare the emissions from various greenhouse gases based upon their climate change potential (CCP). The CO ₂ -eq carbon dioxide equivalent for other emissions is derived by multiplying the amount of the emission by the associated CCP factor.
Carbon Footprint	Carbon released to the atmosphere during the life cycle of a product from cradle to grave.
CDP	CDP (formerly the «Carbon Disclosure Project») is an organisation based in the United Kingdom which encourages large corporations from the world's major economies to disclose their greenhouse gas emissions and climate change strategies. In 2014, nearly 2,000 businesses reported climate change data to CDP.
CHP	Combined Heat and Power: a combination of a boiler and a gas and/or steam turbine that simultaneously produces electricity and thermal energy (steam) by burning fuels. This system is considered to be the most efficient technology in industries using both steam and electricity. When mills sell part of their produced steam to an external party or have net electricity export (selling more to an external party than purchasing), the consumption of fuel and emissions reported for these mills is adjusted to report only that part used to produce paper. This adjustment is based on a reference heat boiler with an efficiency of 90%, which is also used by CEPI and the European Commission for EU ETS benchmark calculations.
CHP (outsourced)	A CHP installation, belonging to an external party, located at or near a Smurfit Kappa site for delivering electricity and steam to the Smurfit Kappa production facility. All fuel and electricity used for the production of paper as well as emissions related to that are included in the figures for the Smurfit Kappa production facility.
Co-generated electricity	Electricity generated by a CHP system belonging to Smurfit Kappa or from an outsourced CHP system.
CO₂ biogenic	Carbon dioxide emitted when burning biofuels. This CO ₂ is considered to be carbon neutral as it is removed from the atmosphere and stored in biomass within a short period of time.
CO₂ fossil	Carbon dioxide emitted when burning fossil fuels for the production of paper. The calculation is made according to international guidelines from the carbon content of each fuel (WRI/WBCSD GHG protocol).
CO₂ indirect	Fossil carbon dioxide generated externally in the production of electricity purchased from the grid. Source: International Energy Agency Data Services for year 2012. 'CO ₂ emissions from fuel combustion – 2014 Edition'.
European Union Emissions Trading System – EU ETS	EU ETS, also known as the European Union Emissions Trading Schemes, is the most extensive greenhouse gas emissions trading scheme in the world. It was launched in 2005 to combat global warming and is a major pillar of EU climate policy. As of 2013, the EU ETS covers more than 11,000 large factories, power stations and other installations in 31 countries.
Dust	Particles coming from the combustion of fuels. Dust emissions are measured mainly by the mills. Where dust 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.
Fossil fuels	Fuels originating from non-renewable resources (gas, oil, coal, peat and lignite).
GJ	Gigajoule, a unit of energy that generally applies to fuel. 1 gigajoule (GJ) = one billion joules = 10 ⁹ joules.
Grid supply	Electricity purchased from a national distribution network.
GWh	Unit of energy, generally applies to electricity – 1 GWh (GigaWatt hour) = 1 million kWh (kiloWatt hour).
NO_x	Mix of nitrogen oxides (NO and NO ₂) calculated as NO ₂ (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.
Paris agreement	Agreement within the framework of the United Nations Framework Convention on Climate Change dealing with greenhouse gases, emissions mitigation, adaptation and finance starting in the year 2020. An agreement on the language of the treaty was negotiated by representatives of 195 countries during COP21.
Self-generated electricity	Electricity generated by an electricity generator without recovery of steam.
Sequestration	Carbon sequestration describes the long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming and avoid dangerous climate change.
SO_x	Mix of sulphur oxides calculated as SO ₂ coming from combustion of fuels. Sulphur dioxide contributes to the acidification of soil and water. SO _x emissions are measured mainly by the mills. Where SO _x is not measured (converting plants), emissions are calculated from fuel consumption using the emission factors listed in the Ecoinvent database version 2.1.
PJ	Petajoule, a unit of energy. 1 petajoule = 1,000 terajoules = 10 ¹⁵ joules.
TJ	Terajoule, a unit of energy that generally applies to fuel. 1 terajoule = 1,000 gigajoules = 10 ¹² joules.
21st Conference of the Parties – COP 21	The 2015 United Nations Climate Change Conference was held in Paris, France from 30 November to 12 December 2015. It was the 21st yearly session of the Conference of the Parties to the 1992 United Nations Framework Convention on Climate Change and the 11th session of the Meeting of the Parties to the 1997 Kyoto Protocol.



Supplementary information

Glossary

Organisations

CEPI	CEPI, the Confederation of European Paper Industries. It is a non-profit organisation representing the European pulp and paper industry.
ELCD	European Reference Life Cycle Database. The ELCD has been developed within the 'European Platform on Life Cycle Assessment' by the Commission's Joint Research Centre, Institute for Environment and Sustainability (JRC-IES).
DJSI	The Dow Jones Sustainability Index tracks the stock performance of the world's leading companies in terms of economic, environmental and social criteria.
Ethibel	The Ethibel Sustainability Index Excellence Europe lists 200 European companies that display the best performance in terms of corporate social responsibility.
Euronext Vigeo	The Euronext Vigeo indices comprise the highest-ranking listed companies as evaluated in terms of their performance in corporate social responsibility.
FTSE4Good	The FTSE4Good Index series is designed to measure the performance of companies demonstrating strong environmental, social and governance practices.
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.
The Supplier Ethical Data Exchange – Sedex	As the largest collaborative platform for sharing ethical supply chain data, Sedex is an innovative and effective supply chain management solution, helping companies to reduce risk, protect company reputation and improve supply chain practices.
Water Footprint Network – WFN	The Water Footprint Network is a non-profit international network whose mission is to promote the sustainable, fair and efficient use of fresh water resources worldwide.
World Business Council for Sustainable Development – WBCSD	The World Business Council for Sustainable Development is a CEO-led organisation of forward-thinking companies that galvanises the global business community to create a sustainable future for business, society and the environment.

Certifications: forest and other

Certified wood product	Certification is given to companies and landowners to verify that their forestry practices are consistent with requirements laid down in these standards. Only certified wood product may carry a label. The label on wood products guarantees that consumers can trust the sources. Actual certification is carried out by independent certification organisations that are accredited by FSC or PEFC or SFI to carry out audits.
CoC	Chain of Custody certification applying to wood/fibre material and products. Chain of Custody is an information trail about the path taken by products from the forest or, in the case of recycled materials, from the reclamation site to the consumer including each stage of processing, transformation, manufacturing and distribution where progress to the next stage of the supply chain involves a change of ownership.
FSC	The Forestry Stewardship Council is an independent, non-governmental organisation established to promote the responsible management of the world's forests through independent third-party certification.
FSSC 22000	These standards specify requirements for a food safety management system where an organisation in the food chain needs to demonstrate its ability to control food safety hazards in order to ensure that food is safe at the time of human consumption.
ISO 9001	Scheme certified by independent third party that ensures that the operation certified applies internationally recognised standards and procedures of quality management.
ISO 14001	Scheme certified by independent third party that ensures that the operation certified applies internationally recognised standards and procedures of environmental management.
ISO 50001	Scheme certified by independent third party that ensures that the operation certified applies internationally recognised standards and procedures of energy usage: improvement of efficiency, reduction of consumption and energy security.
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: <ul style="list-style-type: none"> 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.
OHSAS 18001	Scheme certified by independent third party that ensures that the operation certified applies internationally recognised standards and procedures of occupational health and safety management.
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.
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.

Water	
AOX	Absorbable Organic Halogens: amount of organic compounds containing chlorine and other halogens. AOX can be produced during bleaching of pulp when using halogenated bleaching agents.
BOD	Biochemical Oxygen Demand (one element of the COD, unit: mg O ₂ /litre) refers to the level of oxygen uptake by microorganisms in a sample of water measured over a period of five days.
COD	Chemical Oxygen Demand is the most commonly used test to measure the amount of organic compounds in water (unit: mg O ₂ /litre). The result indicates the level of all organic compounds that can be oxidised by a strong oxidising agent.
Process water	Quantity of water containing organic compounds released into the environment (river, sea) after internal water treatment or released to an external treatment plant (municipal water treatment). In all cases, levels of pollutants released are reported as outputs of the company even in the case of operations that send process water to external treatment
Total N (nitrogen)	Sum of organic nitrogen, ammonia (NH ₃) and ammonium (NH ₄ ⁺) discharged with the process water.
Total P (phosphorous)	Sum of phosphorous compounds discharged with the process water.
Total suspended solids (TSS)	Refers to the level of small solid particles discharged with the process water.
Water impact assessment	Assessing potential risk from water availability and quantity, covering multiple aspects specific to each geographical locations.
Products and raw materials	
Containerboard	Papers and boards mainly used in the manufacture of corrugated board. They are made from virgin or recovered fibres. Included are kraftliner, testliner, semi-chemical fluting and recycled fluting.
Corrugated board	Structured board made by a corrugator usually formed by gluing one wave-formed liner (called fluting) in the middle to two flat-facing sheets of containerboard (kraftliner or testliner).
Fluting	The wav-formed formed middle layer in corrugated board.
Kraftliner	Paper manufactured mainly from virgin wood fibres
Testliner	Paper manufactured from recycled fibres.
Inorganic raw materials	Raw material used for manufacturing our products that are not organic such as: fillers, sodium hydroxide, sodium sulphate and calcium oxide.
Other organic raw materials	Raw materials used for manufacturing our products that are organic excluding fibres, starch or plastic raw materials which are reported individually. This category includes oil, lubricant and organic additives such as colourant or dyes.
Raggers	In the beginning of repulping process in which recovered paper is returned into pulp, non-fibrous materials are being removed from the recovered paper. Plastics, strapping and other floating materials are collected from the mass with a rope called a 'ragger'.
Recovered paper	Recovered paper refers to used paper and board separately collected and classified for the purpose of recycling which is then used as raw material in the manufacture of new paper and paperboard.
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 recovered 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	Using a product or raw material again without changing its form in between.
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.
Health and Safety	
Lost time accident	Refers to a work-related injury incident sustained by a Smurfit Kappa employee while performing their work duties that results in their absence from their scheduled work after the day of the incident
Lost time accident frequency rate	Refers to the number of lost time accidents per 100,000 hours worked. [LTA frequency rate = number of LTA x 100,000/total number of hours worked].
Lost time accident severity rate	Refers to the total number of days lost per 100,000 hours worked. [LTA severity rate = number of days lost x 100,000/total number of hours worked]. We refer to LTA severity rate when speaking about our target to reduce the injury rate by 5% annually during 2013-2017.
Number of days lost	Refers to the number of days lost arising from any lost time accident. When counting the number of days lost due to an accident, the day of the accident is not counted as a lost day.
Wastes	
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.
Total non-hazardous wastes	Sum of all non-hazardous waste whatever its destination. Each category of non-hazardous wastes is defined and reported.
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.
Non-hazardous wastes other	Part of non-hazardous wastes that does not belong to the two previous categories. This includes wastes incinerated without energy recovery or wastes for which the final disposal is uncertain.
Hazardous wastes	Residues of oils and other hazardous wastes (building wastes containing asbestos, ink residues, etc.).



Supplementary information

Assurance report of the independent auditor

To the readers of the Sustainable Development Report 2016 of Smurfit Kappa Group plc.

Our conclusion

We have reviewed (limited assurance) the Sustainable Development Report 2016 (hereafter: the Report) of Smurfit Kappa Group plc (hereafter: Smurfit Kappa) based in Dublin, Ireland.

The Report comprises a representation of the policy of Smurfit Kappa with regard to corporate social responsibility and the thereto related business operations, events and achievements during the reporting year.

Based on our review, nothing has come to our attention to indicate that the Report is not prepared, in all material respects, in accordance with the GRI Sustainability Reporting Guidelines version G4.

The Report includes prospective information such as ambitions, strategy, plans, expectations and estimates. Inherently the actual future results may differ from these and are therefore uncertain. We do not provide any assurance on the assumptions and achievability of prospective information in the Report.

Basis for our conclusion

We have performed our review on the Report in accordance with Dutch law, including Dutch Standard 3810N: 'Assurance-opdrachten inzake maatschappelijke verslagen' (Assurance engagements relating to sustainability reports), which is a specified Dutch standard that is based on the International Standard on Assurance Engagements (ISAE) 3000: "Assurance Engagements other than Audits or Reviews of Historical Financial Information".

This review engagement is aimed to obtain limited assurance. Our responsibilities under this standard are further described in the section 'Our responsibilities for the review of the Report' below.

We are independent of Smurfit Kappa Group plc 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) and other

relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

We believe that the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Responsibilities of the Board of Directors for the Report

The Board of Directors of Smurfit Kappa is responsible for the preparation of the Report in accordance with the GRI Sustainability Reporting Guidelines version G4.

The Board of Directors is also responsible for such internal control as it determines is necessary to enable the preparation of the Report that is free from material misstatement, whether due to fraud or error.

Our responsibilities for the review of the Report

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

A review is aimed to obtain a limited level of assurance. Procedures performed to obtain a limited level of assurance are aimed at determining the plausibility of information and are less extensive than a reasonable assurance engagement. The level of assurance obtained in review engagements is therefore substantially less than the level of assurance obtained in an audit engagement.

We apply the 'Nadere voorschriften accountantskantoren ter zake van assurance opdrachten (RA)' (Regulations for Audit Firms Regarding Assurance Engagements) 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.

Misstatements can arise from fraud or errors and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users taken on the basis of the Report. The materiality affects the nature, timing and extent of our review procedures and the evaluation of the effect of identified misstatements on our conclusion.

We have exercised professional judgement and have maintained professional scepticism throughout the review, in accordance with the Dutch Standard 3810N, ethical requirements and independence requirements.

Our main procedures consisted of:

- Performing an analysis of the external environment, obtaining an understanding of relevant social trends and issues, and of the organisation's business;
- Evaluating the design and implementation of the reporting systems and processes related to the information in the Report;
- Interviewing relevant staff responsible for providing the information in the Report;
- Visits to production sites in Alicante (Spain), Atlas (Mexico), Cerro Gordo (Mexico), Lunata (Italy), Pitea (Sweden) and Roermond (the Netherlands), to review the source data and the design and implementation of internal controls and validation procedures at local level;
- An analytical review of the data and trends submitted for consolidation at corporate level;
- Reviewing relevant data and evaluating internal and external documentation, based on limited sampling, to assess the accuracy of the information in the Report.

Amsterdam, 18 May 2017
KPMG Sustainability,
Part of KPMG Advisory N.V.

M.A.S. Boekhold-Miltenburg RA
Director

Confirmation of rights to use the trademarks:



The mark of
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