Sappi - Climate Change 2018

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Sappi is a global diversified woodfibre company with just over 12 000 employees focused on providing dissolving wood pulp, specialities and packaging papers, graphic/printing papers as well as biomaterials and biochemicals to its direct and indirect customer base across more than 150 countries. Manufacturing operations are located in North America, Europe and South Africa, where the company also owns and leases 387,291 hectares of 100% FSC-certified plantations. In FY2017, production included:
* 5.4 million tons of paper
* 2.2 million tons of paper pulp
* 1.4 million tons of dissolving wood pulp.

In FY2017, in terms of production of group sales, Europe accounted for 48%, North America for 26% and South Africa for 26%.

Sappi's dissolving wood pulp (specialised cellulose) products are used worldwide by converters to create viscose fibre for fashionable clothing and textiles, pharmaceutical products, as well as a wide range of consumer and household products. Quality specialities and packaging papers are used in the manufacture of such products as soup sachets, luxury carry bags, cosmetic and confectionery packaging, boxes for agricultural products for export, tissue wadding for household tissue products and casting and release papers used by suppliers to the fashion, textiles, automobile and household industries. The group's market-leading range of coated and uncoated graphic paper products are used by printers in the production of books, brochures, magazines, catalogues, direct mail, newspapers and many other print applications.

The wood and pulp needed for products is either grown by Sappi, produced within Sappi or bought from accredited suppliers. Across the group, Sappi is close to 'pulp neutral', meaning that the group sells almost as much pulp as it buys.

Sappi Trading operates a network for the sale and distribution of our products outside the group's core operating regions of North America, Europe and Southern Africa. Sappi Trading also co-ordinates shipping and logistical functions for exports from these regions.

:

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	October 1 2016	September 30 2017	No	<Not Applicable>
Row 2	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Austria
Belgium
Finland
Germany
Netherlands
South Africa
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-AC0.6/C-FB0.6/C-PF0.6

(C-AC0.6/C-FB0.6/C-PF0.6) Are emissions from agricultural/forestry, processing/manufacturing, distribution activities or emissions from the consumption of your products – whether in your direct operations or in other parts of your value chain – relevant to your current CDP climate change disclosure?

	Relevance
Agriculture/Forestry	Both own land and elsewhere in the value chain [Agriculture/Forestry only]
Processing/Manufacturing	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Distribution	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Consumption	No

C-AC0.6g/C-FB0.6g/C-PF0.6g

(C-AC0.6g/C-FB0.6g/C-PF0.6g) Why are emissions from the consumption of your products not relevant to your current CDP climate change disclosure?

Row 1

Primary reason

Other, please specify (Not possible to isolate our own products)

Please explain

It is not possible to calculate the emissions from the consumption of our products as once these products go into the external upstream customer processes and consumption/recycling streams, our own particular products cannot be distinguished from those of other pulp, paper and packaging manufacturers. The majority of our products are recyclable and biodegradable. This means they can generally be kept out of landfill and this in turn helps to mitigate global warming as landfills generate methane, a greenhouse gas which has 25x the global warming potential of carbon dioxide.

C-AC0.7/C-FB0.7/C-PF0.7

(C-AC0.7/C-FB0.7/C-PF0.7) Which agricultural commodity(ies) that your organization produces and/or sources are the most significant to your business by revenue? Select up to five.

Agricultural commodity

Timber

% of revenue dependent on this agricultural commodity

More than 80%

Produced or sourced

Both

Please explain

Sappi's business is dependent on woodfibre. In Southern Africa, the fact that we own and lease 387,291 hectares (ha) of plantations with approximately 27.4 million tons of standing timber gives us a competitive advantage. We also have access to wood from a further 92,000ha via contracted timber suppliers. In North America and Europe, we buy in woodfibre and pulp. In Europe, we mitigate fibre supply risk through shareholdings in wood sourcing cooperatives and companies, and in this region and North America, through a combination of approaches which include both short- and long-term wood supply agreements. While our business is wholly dependent on woodfibre, given Sappi Europe's general risk mitigation strategy of sourcing pulp and woodfibre from a variety of sources and regions, we do not anticipate any material impact to raw material supply from climate change in the short to medium term. In North America, our operations do not currently face material risks associated with climate change. With the exception of fibre from Brazil for Westbrook Mill, we source from northern hardwood and softwood wood baskets that have not suffered under any drought conditions or from fire. In South Africa, our world-class tree improvement programmes help to mitigate the impacts of climate change. Sappi Southern Africa meets 83% of its own woodfibre needs.

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board/Executive board	Ulimate responsibility rests with the Chairman of the Social, Ethics, Transformation and Sustainability Committee, a fully constituted board committee.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action	The Social, Ethics, Transformation and Sustainability (SETS) Committee, a fully constituted Board Committee, has overall responsibility for climate change-related issues. The reporting structure is as follows: Regional Sustainable Councils (RSCs), in Europe, North America and South Africa, are responsible for establishing and implementing on-the-ground strategy regarding climate change issues. The RSCs report to the Group Sustainable Development Council (GSDC) which is chaired by the Group Head: Investor Relations and Sustainability. The GSDC reviews strategy and implementation, makes recommendations and in turn reports to the SETS committee.

C1.2

(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (Group Head Technology)	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

The Group Head: Technology reports directly to the CEO. The former individual is responsible for overseeing:

· Climate-change related research, such as the group's tree improvement research which focus on improving the sustainable supply of wood fibre in South Africa;

· Research related to the reduction of greenhouse gas emissions as well as more efficient water usage – particularly important in South Africa, where climate change is putting pressure on freshwater resources;

· Expansion projects where climate-related issues such as improved specific energy efficiency and a reduction in greenhouse gases are always a consideration.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Energy reduction target

Comment

The Management Incentive Scheme (MIS) for the management group and regional board of directors of the Sappi Southern Africa (SSA) mills are linked to SSA's sustainability performance in terms of energy reduction against a set target. For the North American and European Mills, these targets are included in the personal objectives of the various managers.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	1	Text field [maximum 2,400 characters] Fire is an ever-present risk. While, the Southern African landscape is prone to, and ecologically adapted to, frequent fires, the risk of uncontrolled fires entering and burning significant areas of plantation is high. In 2007 and 2008, Southern Africa experienced a number of abnormal weather events (hot, dry conditions fanned by extremely strong winds), which resulted in disastrous plantation fires across vast areas of eastern South Africa and affecting 14,000ha of our plantations. These abnormal weather conditions might be more frequent as a result of climate change. In 2017, despite better than expected rainfall, KwaZulu Natal suffered from a severe drought. In addition, because the transformation of land ownership and management in Southern Africa has been moving ownership and management of plantations to independent growers, we have less ability to directly manage fire risk, as well as risks of other catastrophic events, such as pathogen and pest infestations. As a consequence, the risk of plantation fires or other catastrophic events remains high and may be increasing. Continued or increased losses of our wood source could jeopardise our ability to supply our mills with timber from the region. However, Sappi has implemented an extensive fire protection strategy through which risks are now managed via an integrated Fire Risk Management System. Forest risk commodity Impact driver Impact Description of impact Financial impact Response strategy Description of response strategy Sappi has increased community participation in fire prevention to reduce the incidents of fires through regional and district Fire Protection Associations. In addition, significant investment has improved fire detection, while fire crew training and improved equipment has significantly improved response times to fires.
Medium-term	1	5	RESPONSE 1 Drought and pest infestations are potentially exacerbated by climate change as well as changing the species distribution. Sappi's exposure to climate change related risk in South Africa which is expected to be more severely impacted by climate change than any of the other regions in which we operate, is moderated by the diversity of commercial species and hybrids deployed across a wide range of climatic conditions. Sappi continually monitors and reviews forest best practices in the light of changing environmental factors, thus helping to mitigate any increased threat from water shortages or drought. The company's mitigation activities in this area include: •Maintaining wide genetic variability in planting material. This enables Sappi to breed trees for a wide range of conditions and the rate of change in conditions is probably slow enough for the company to respond in the breeding programme. In other words, we will produce better trees as conditions change. •Measuring permanent sample plots measured annually (eucalypts) or bi- annually (pines) to determine the effect of drought on current annual increment as an input to long-term planning. •Implementing extensive planting of more drought-tolerant eucalypt hybrids. •Engaging in research and collaboration with industry and tertiary institutions to develop bio control measures and breed genetically more resistant planting stock. We believe this approach is both a risk and an opportunity in that it gives us a strong competitive advantage. RESPONSE 2 Globally, there are concerns about fossil-fuel based packaging. We are capitalising on this by expanding our offering of sustainable packaging. In North America, for example, we are investing US$165 million in upgrading and enhancing the flexibility of Paper Machine 1 at Somerset Mill in Maine, to enable growth in paper-based packaging. The overall capacity of the mill, currently the largest coated mill in North America, will increase by 180,000tp. In addition, as viscose technology improves and gains market acceptance, so the economic and environmental case versus cotton and petroleum-based fibres grows. Accordingly, we are expanding our DWP capacity at Ngodwana and Saiccor Mills by 60,000tpa.
Long-term	5	10	In the longer-term, climate change could impact regions from which North America and Europe source woodfibre by altering the frequency and intensity of forest disturbances such as insect outbreaks, invasive species, wildfires and storms. In their annual global temperature analysis, NASA scientists found 2017 to be the second-warmest year since record keeping began in 1880, second only to 2016.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	The Global Risk Cluster presents key risks on an annual basis to the Sappi Global- and Regional Executive Committees, the Group Technology Management Team and the Group Risk Management Team, which in turn reports regularly (every three months) on risks to the Audit Committee and the Board.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

A

As woodfibre is an agricultural product, a key risk is that it could be affected by climate change. This is particularly true in Southern Africa, where Sappi owns and leases plantations, with the IPCC reporting that climate change will amplify existing stress on water availability in Africa. Water shortages, changes in precipitation and drought could reduce forest productivity, drought and fibre and could also exacerbate the potential for pests and disease

The increased emphasis on water footprint in Southern Africa is causing increased focus on the use of water by our operational units, on the quality of water released back into the water systems and on the control of effluent.

The costs of water used also have a direct bearing on our input costs and operating profit. Climate change could also cause the spread of disease and pestilence into our fibre sources for Europe and North America, far beyond

their traditional geographic spreads, increasing the risk that wood supply necessary to our operations may be negatively impacted. Concerns about global warming and carbon footprints, as well as legal and financial incentives favouring alternative fuels, are leading to the increased use of sustainable, non-fossil fuel sources for electricity generation – yet another risk. In terms of opportunities, we have witnessed a growing need for more sustainable

and environmentally-friendly packaging solutions from a wide variety of industries and sectors forced to review the effects that their packaging materials have on the environment. The advantage paper-based packaging has

over other competing materials such as plastics and foils in a well-designed product, is the relative ease with which the packaging can be recycled or even composted in some circumstances. In addition, we have seen a push for viscose manufacturers to source their DWP from sustainable forests – forests that are PEFC, FSC and/or SFI certified. The renewable nature of our primary raw material: woodfibre and the carbon sequestration of the sustainably managed forests and plantations from which we source woodfibre represent a significant opportunity in an increasingly environmentally conscious world: As forests grow, carbon dioxide (CO2) is removed from the atmosphere via photosynthesis. This CO2 is converted into organic carbon and stored in woody biomass. Trees release the stored carbon when they die, decay or are combusted. As the biomass releases carbon as CO2, the carbon cycle is completed. The carbon in biomass will return to the atmosphere regardless of whether it is burned for energy, allowed to biodegrade or lost in a forest fire. The net impact of these processes is that CO2 flows in and out of forests and through the forest products industry by both biomass combustion and sequestration in products. Overall, the flow of forest CO2 is carbon positive when forests are sustainably managed and the forest system remains a net sink of CO2 from the atmosphere. Globally, 73.5% of woodfibre supplied to our mills is certified and originates in forests, which are certified against PEFC, SFI and FSC forest certification systems. Sappi is working on enhancing forest certification and increasing the amount of certified fibre input in its products. The high percentage of certified fibre supplied to our mills represents a reputational and marketing opportunity.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	In terms of carbon taxes, we continue to monitor the situation in each region where we operate. In North America and Europe, carbon taxes do not appear to be an imminent risk.However, the EU ETS remains a key focus area. In Southern Africa, the Department of Environmental Affairs has accepted our proposed carbon budget which is valid until 2020. We are waiting to see if the carbon tax in South Africa, due to come into effect in January 2019, will impact this.
Emerging regulation	Relevant, sometimes included	Environmental legislation aimed at protecting forests and species habitats, as well as regulatory restrictions, may in the future cause significant reductions in the amount of timber available for commercial harvest. In addition, future claims and regulations concerning the promotion of forest health and the response to and prevention of wildfires could affect timber supplies in the jurisdictions in which we operate
Technology	Relevant, sometimes included	Technology is a core pillar of competitive advantage in our industry and represents a risk if we do not make ongoing technology investments. With a strong focus on innovation and R&D, Sappi is committed to developing new processes and biomaterials which extract more value from each tree and support our business strategy to move into new and adjacent markets. Our R&D initiatives focus on consolidating and growing our position in our targeted markets segments; driving cost competitiveness and cost reduction; as well as optimising our equipment and forestry assets. Our total R&D spend in 2017 was US$29.5 million, including spend of approximately US$9.8 million on our Exciter programme which focuses on core business (Exciter I) and new and adjacent business (Exciter II).
Legal	Relevant, sometimes included	We monitor legal and environmental compliance issues related to climate change in each region where we operate.
Market	Relevant, sometimes included	Trends in advertising, electronic data transmission and –storage, as well as the internet, are having adverse effects on traditional print media and other paper applications, including Sappi's products and those of its customers. Advertising expenditure has gradually shifted away from the more traditional forms of advertising (newspapers, magazines, radio and television) which tend to be more expensive, toward a greater use of electronic and digital forms of advertising (the internet, mobile phones and other electronic devices), which tend to be less expensive. In general terms, Sappi has changed its strategic by closing graphic paper capacity and focusing more on fibre-based products with growing demand and improved margins. Our aim is to leverage the key components of woodfibre to extract more value from each tree and in doing so, strengthen our overall core business model. Accordingly, in July 2016, we established a new business unit, Sappi Biotech, to accelerate our response to consumer trends for renewable products with a low carbon footprint, continue to innovate in new growth segments and take global responsibility for the commercialisation of new products. Under the auspices of Sappi Biotech, in FY2017 we commissioned a sugar extraction pilot plant at Ngodwana Mill and produced the first batch of cellulose nanofibrils (CNF) and cellulose microfibrils (CMF) at our pilot plant at Maastricht Mill. We also acquired technology from Plaxica, a firm based in the United Kingdom which specialises in sugar extraction from waste streams. Within the next four years we believe that Sappi Biotech could contribute as much as 10% of the group's EBITDA.
Reputation	Relevant, sometimes included	Many consumers erroneously equate deforestation with pulp and paper companies like Sappi. This is mitigated by responsible sourcing activities: Globally, 73.5% of fibre supplied to our mills is certified. In Europe, North America and Southern Africa, the percentage of certified fibre in FY2017 was respectively 74.1%, 54% and 83.1%. The balance is procured from known and controlled sources. In South Africa and North America, Sappi works with landowners to increase certification. In South Africa, 100% of Sappi's owned and leased plantations are FSC-certified. Reputational risk is also mitigated by our involvement in industry initiatives like TwoSides which work to dispel myths about paper usage. In FY2017 we supported the TwoSides organisations in Europe, North America, South America, South Africa and Australia and the Print Power campaign in Europe.
Acute physical	Relevant, sometimes included	As a natural resource, timber is subject to physical events like pests, diseases, fire, flood and drought.
Chronic physical	Relevant, always included	The availability of harvested timber may be limited by factors such as fire, insect infestation, disease, ice and wind storms, droughts, floods and other nature and man-made causes, thereby reducing supply and increasing stumpage, harvesting and logistics prices and expenses.
Upstream	Relevant, always included	The availability of harvested timber may be limited by factors such as fire, insect infestation, disease, ice and wind storms, droughts, floods and other natural and man-made causes, thereby reducing supply and increasing prices.
Downstream	Relevant, sometimes included	Many consumers erroneously equate deforestation with pulp and paper companies like Sappi. This is mitigated by responsible sourcing activities and by a strong consumer trend to move away from fossil-fuel based packaging.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

At a company (group) level, the Regional Risk Management Councils meet bi-annually to identify, assess and discuss risks. The top risks are then identified and plotted on a graph in terms of likelihood and severity. Risks, including indirect climate change risks, are monitored and publicly reported on annually. Sappi currently has a general process for determining materiality and priorities of all risks. Climate change risks considered include regulatory, reputational, weather related (fire and pests), forest management, operational resource management (water, energy), licence to operate and customer behavioural change risks.

At asset (regional and operating unit e.g. mills) level, risks pertaining to that specific asset are assessed and mitigation actions are managed by the management team of that specific asset. The risks to assets are reviewed on a six-monthly basis by the management team responsible for the asset and all major assets are covered by insurance. On an annual basis, the risks associated with Sappi's non-forestry assets are reviewed by external consultants. The results of these reviews are converted to mitigation action plans, if required. The results of these reviews are used together with the internal survey results of the company's forestry assets, to buy insurance to mitigate risk as required.

Climate change risk and opportunity factors such as regulatory, reputational, weather related (fire and pests), forest management, operational resource management (water, energy), licence to operate and customer behavioural change are assessed together with other non-climate change related risks and are plotted bi-annually on a risk matrix according to the probable severity of the monetary impact and the likelihood of occurrence, to determine possible risk exposure

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Supply chain

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Rising mean temperatures

Type of financial impact driver

Other, please specify (Constraint to growth)

Company- specific description

South African government restrictions on new plantation cultivation: South Africa's water resources are extremely limited and a significant limitation on future economic development. Climate change is expected to stress this limited resource even further.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Low

Potential financial impact

Explanation of financial impact
Not possible to quantify the financial impact

Management method
In Southern Africa, we work to mitigate fibre supply risk and drive shared value by expanding access to the forestry sector in a number of ways, including: Sappi Khulisa ('Khulisa' means 'to grow' in isiZulu), our enterprise development initiative, previously known as Project Grow. This initiative, which began in 1983, is aimed at community tree farming and has successfully uplifted impoverisheduplifted impoverished communities in KwaZulu-Natal and the Eastern Cape. The total area currently managed under this programme amounts to 22,362ha. In FY2017, under the programme, 448,221 tons (2016: 395,232 tons) worth approximately USD2.6 million wasmillion was delivered to our operations. Since 1995, a total volume of 3,313,581 tons has been purchased from small growers in terms of this programme. In recent years, we have expanded Sappi Khulisa beyond the borders of KwaZulu-Natal to the Eastern Cape. We have signed a Memorandum of Understanding with the Eastern Cape Rural Development Agency (ECRDA) to facilitate forestry development in this region. To date, the total area planted covers 4,782ha and a further 4,812ha is in the environmental impact assessment phase, with records of decisionof decision awaited on a further 1,250ha. We are also active in land reform. At 30 September 2017, Sappi was involved in 60 land reform projects. . To ensure sustainable production from these properties, we provide technical assistance to the beneficiaries.

Cost of management

Comment
Costs included under general management costs. Sappi's investment in Sappi Khulisa and in land reform projects is aligned with the Government of South Africa's strategy of promoting forestry in rural areas in order to alleviate poverty and drive socio-economic growth.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Physical risk

Primary climate-related risk driver
Chronic: Other

Type of financial impact driver
Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description
Climate change is impacting negatively on freshwater sources. Of all the regions where Sappi has operations, South Africa, which is a water-stressed country and which has been experiencing its worst drought in many years, has been most severely affected.

Time horizon
Current

Likelihood
Unlikely

Magnitude of impact
Medium-high

Potential financial impact

Explanation of financial impact
Not possible to quantify

Management method
To mitigate the impact of low flows on the Umkomazi River, the prime source of water to Saiccor Mill, in FY2016 we completed a project to raise the Comrie Dam wall, upstream of Saiccor Mill, significantly increasing the amount of water in the dam.

Cost of management

Comment
Considered confidential

Identifier

Risk 3

Where in the value chain does the risk driver occur?
Supply chain

Risk type
Physical risk

Primary climate-related risk driver
Chronic: Rising mean temperatures

Type of financial impact driver
Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description
The deployment of hybrids has become a priority in order to mitigate the risks associated with climate change and increased pests and disease introductions, as well as to meet the requirement for more hardwoods, necessitated by the conversion of Ngodwana Mill to include the manufacture of dissolving wood pulp.

Time horizon
Current

Likelihood
Likely

Magnitude of impact
Medium

Potential financial impact

Explanation of financial impact
The value of the PTT pine hybrid to Sappi has been estimated at US$5.5 million over a 20-year rotation, for the 3,500 hectares of PPT already commercially planted.

Management method
By crossing Pinus patula, which is highly susceptible to Pitch Canker Fungus (PCF), with the closely related but PCF-tolerant Pinus tecumanii, a disease tolerant hybrid known as PTT was created. The hybrid holds numerous benefits: – 45% more productive than pure P. patula – Better field survival – Easier to propagate in the nursery – More broadly adapted to a greater range of sites – Higher density and more uniform wood qualities – Rapid establishment on site, and – Good drought tolerance. More PTT be added every year over the next 20 years as the majority of the area currently planted to P. patula in the Mpumalanga province is gradually replaced with PPT. An additional benefit of the increased yield from PPT is the opportunity to reduce the area needed for softwoods in Mpumalanga, allowing more of Sappi's land to be converted to hardwoods, thereby increasing hardwood fibre output for the production of dissolving wood pulp. The deployment of PTT has been enhanced by the upgrade of the existing nursery at Ngodwana Mill and the addition cutting facilities. This has helped to promote the sustainability of our fibre base in two ways: – Firstly, by mitigating against crop losses in the nursery during the cold winter period, and – Secondly, by helping to meet our need for increased deployment of hybrid cuttings, rather than pure species seedlings, as, like PTT, the former are generally more disease resistant and faster growing and can only be economically deployed using cuttings

Cost of management

Comment
Confidential

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Supply chain

Risk type
Physical risk

Primary climate-related risk driver
Chronic: Other

Type of financial impact driver
Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description
Climate change has exacerbated the risk of uncontrolled fires entering and burning down significant areas of plantation.

Time horizon
Current

Likelihood
About as likely as not

Magnitude of impact
Low

Potential financial impact

Explanation of financial impact
Fires on Sappi's plantations have declined by 89% since 2015

Management method
In 2015, SSA's forestry division in KwaZulu-Natal set out to establish what it could do to simultaneously provide communities with opportunities and reduce the numbers of fires in its plantations. Research showed high unemployment within communities in Sappi regions and expectations that the company would provide more jobs than were possible, thus highlighting a critical need for enterprise development. This resulted in the implementation of a 12-month pilot community engagement and social mobilisation project, which involved the appointment of 18 unemployed youngsters called the Abashintshi (isiZulu for 'change agents'). Based on the asset-based community development (ABCD) methodology and with the objective of establishing and helping activate entrepreneurial enterprises among their communities, the Abashintshi were taught how to facilitate life skills and entrepreneurship training, activate the Ifa Lethu Legacy programme with elders, and offer holiday programmes for school children. They also provided Sappi with a new channel of communication, which has helped to improve the company's reputation significantly.

Cost of management

Comment
Covered under corporate social investment costs

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Supply Chain

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Type of financial impact driver
Reduced operational costs (e.g., through use of lowest cost abatement)

Company- specific description
In 2018, Sappi Southern Africa concluded an agreement with the Department of Energy to build a renewable energy plant at Ngodwana Mill in Mpumalanga province. Sappi and consortium partners KC Africa and African Rainbow Energy and Power will establish a 25MW biomass energy unit at the mill. Sappi will have a 30% stake in the facility, which is expected to contribute to the national grid from July 2020. Sappi already contributes to the national grid by selling surplus energy from Ngodwana and Saiccor Mills to Eskom, the state power utility.

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
Medium-high

Potential financial impact
1000000000

Explanation of financial impact
Given the project's extensive value chain, the value-add over the term of the power purchase agreement is significant due to its positive monetary, job creation and socio-economic impacts. We estimate it at approximately US$1 billion direct value add over 20 years.

Strategy to realize opportunity
The project falls under the South African government's renewable energy independent power producer programme

Cost to realize opportunity
134000000

Comment
With this project, Sappi has become one of only a few companies in South Africa to embark on a biomass energy project. The project will use biomass recovered from surrounding plantations and screened waste material from the mill production process. The power plant will burn up to 35 t/h of biomass in a boiler to generate steam and drive a turbine to generate electricity which will be fed into the grid as from 2020. The project is expected to generate in excess of 2 500 labour-months of employment for South African citizens during the project phase, while the biomass recovery process lends itself to sustainable job creation and skills development over the life of the plant. Sappi has a 30% stake in the facility, with consortium partners KC Africa and African Rainbow Energy and Power holding the rest. The consortium will spendUS$134 million on the biomass energy unit.

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Type of financial impact driver
Reduced operational costs (e.g., through use of lowest cost abatement)

Company- specific description
In FY2016, we announced the establishment of a pilot scale plant at Saiccor Mill to assess the use of anaerobic technology to treat evaporator condensate which we progressed in FY2017. The technology uses organic matter in the condensate to generate methane gas. Methane gas, in turn, can be used to generate electricity or generate steam. The pilot study showed that the technology can be successfully used to biologically convert the organic material present in the condensate into biogas (methane). The energy potential associated with the use of the generated biogas is 1.7MW electrical and 1.8MW thermal. The generated biogas has the potential to replace 17 tons of coal per day. The assessment has now been completed and we are currently evaluating the implementation of the technology.In FY2016, we announced the establishment of a pilot scale plant at Saiccor Mill to assess the use of anaerobic technology to treat evaporator condensate which we progressed in FY2017. The technology uses organic matter in the condensate to generate methane gas. Methane gas, in turn, can be used to generate electricity or generate steam. The pilot study showed that the technology can be successfully used to biologically convert the organic material present in the condensate into biogas (methane). The energy potential associated with the use of the generated biogas is 1.7MW electrical and 1.8MW thermal. The generated biogas has the potential to replace 17 tons of coal per day. The assessment has now been completed and we are currently evaluating the implementation of the technology.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
Medium

Potential financial impact

Explanation of financial impact
Considered confidential

Strategy to realize opportunity
The project is still in the assessment and evaluation phase.

Cost to realize opportunity

Comment
The project is still in the assessment and evaluation phase.

Identifier
Please select

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Type of financial impact driver
Other, please specify (Increased production capacity, revenues)

Company- specific description
Sappi will US$201,793,722 in 2018 and 2019 on expanding the capacity of its Saiccor mill, to produce 890 000 t/y of dissolving wood pulp (DWP). The mill currently produces 780 000 t/y of DWP. Sappi will also invest a further US$373,692,078 over five years in various continuous improvement initiatives at the mill. The investments are collectively called Project Vulindlela, and will include the installation of a new evaporator, recovery boiler and screening and washing plant, along with upgrades to the bleach plant and pulp machines, improved recovery circuits and additional magnesium digesters. Cost savings as a result of this investment will be at least US$22.4 million a year, carbon dioxide emissions will be cut in half, waste to landfill will reduce by 48%, sulphur dioxide emissions will reduce by 35% and water use efficiency will increase by 17%. Decreased fossil fuel and increase in renewable energy sources will significantly decrease GHG emissions.

Time horizon
Current

Likelihood
Virtually certain

Magnitude of impact
Medium-high

Potential financial impact
22400000

Explanation of financial impact
Cost savings as a result of this investment will be at least US$22.4 million a year, carbon dioxide emissions will be cut in half, waste to landfill will reduce by 48%, sulphur dioxide emissions will reduce by 35% and water use efficiency will increase by 17%.

Strategy to realize opportunity
Environmental efficiency and increased processing capacity

Cost to realize opportunity
201793722

Comment
Sappi will US$201,793,722 in 2018 and 2019 on expanding the capacity of its Saiccor mill, to produce 890 000 t/y of dissolving wood pulp (DWP). The mill currently produces 780 000 t/y of DWP.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	Consumer preference for renewable products with a lower carbon footprint from sustainabily managed forests is an opportunity.
Supply chain and/or value chain	Impacted	The global demand for woodfibre is expected to increase for the foreseeable future, driven partly by the demand for wood pellets and other wood-based fuels rather than finite fossil fuels as a green energy source and driven also by the fact that new applications for wood are being researched in quest for replacing oil –based products like plastic. This is expected to accelerate as more and more countries commit to mitigation actions on climate change and represents a risk.
Adaptation and mitigation activities	Impacted	Our high use of renewable energy represents a significant marketing opportunity. Globally, our renewable energy stands at 45.2%, of which just over 73% is own black liquor, a co-product of the pulping process in our integrated mills. Black liquor contains more than half of the energy content of the digested wood. As a renewable biomass-derived fuel, black liquor supplants fossil fuels, with a corresponding reduction in greenhouse gas emissions. Biomass-derived energy like black liquor is fundamentally different from fossil fuel-derived energy because biomass recycles carbon whereas fossil fuels introduce carbon, that had previously been 'locked away', to the atmosphere. Biomass is deemed 'carbon neutral' – the carbon dioxide (CO2) generated during combustion is equivalent to that which was originally bound from the atmosphere through photosynthesis.
Investment in R&D	Impacted	Our investment in tree improvement R& D represents an opportunity in that it gives us a competitive advantage in being able to manage and mitigate the impacts of climate change.
Operations	Impacted	A marketing opportunity is represented by the fact that over five years, we have increased global levels of energy self-sufficiency by 8.7%, while over the same period, globally, specific direct (Scope 1) GHG emissions have reduced by 4.6% and specific indirect (Scope 2) GHG emissions have decreased by 7.42%. Overall, there has been a reduction of 5.4% in GHG emissions intensity over five years.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Please select	
Operating costs	Impacted	Energy is a key input for our industry. Aggressively managing energy usage leads to a reduction in carbon emissions and enhanced cost efficiencies. Even though globally, our energy costs as a percentage of cost of sales have declined over five years due to actions taken, it makes business sense for Sappi to aggressively manage energy usage and promote the generation of renewable energy. Environmental impact is reduced not only by the amount of energy, but also by the type of energy consumed. We have made significant efforts to reduce reliance on fossil fuels, thereby reducing fossil-related greenhouse gas (GHG) emissions and separating our operations from the volatility of energy prices.
Capital expenditures / capital allocation	Please select	
Acquisitions and divestments	Please select	
Access to capital	Please select	
Assets	Please select	
Liabilities	Please select	
Other	Impacted	The increasing threat of pests and pathogens to commercial plantation forestry industries has led to an expansion of the Ngodwana and Clan nurseries in South Africa and also to the expansion of facilities at the Shaw Research Centre, near Howick in KwaZulu-Natal. The centre focuses on tree breeding and optimal efficiencies in Sappi's forestry sector. The centre has now accelerated efforts as regards pests and diseases by appointing a principal researcher officer and allocating dedicated funding towards the construction of a Tree Health Laboratory at the Research Centre. The aims of the tree health facilities at SRC are to augment services already received from the Tree Pathology Cooperative Programme (TPCP), of the Forestry and Agricultural Biotechnology Institute (FABI) at the University of Pretoria. The TPCP plant diagnostic clinic has, over the years provided valuable diagnostic, and in some cases research, services to Sappi and other members of the South African forestry industry. However, with the increasing demand on the clinic they cannot assist with larger batches of samples over extended periods of time. The Sappi Tree Health Laboratory will allow extra material to be analysed for Sappi plantations, and in a shorter time frame. This is especially important in the nursery situation where rapid responses are critical. It is envisaged that the laboratory will allow Sappi to conduct additional research into pest and disease management, and potentially initiate pilot studies in the selection and use of bacterial and fungal biological control agents of insects and pathogens. Plans are also already underway for the development and implementation of in-house rapid screening techniques for the most important pathogens affecting Sappi plantations, thus assisting tree breeding efforts.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Sappi's business strategy is encapsulated in its publicly stated 2020Vision: “Within the next five years, we want to maximize the returns from our mature businesses, expand our existing high-growth businesses and enter new businesses in adjacent fields as we unlock and commercialise the potential of plantation and forest-derived bio-products. The fact that we operate in a carbon-constrained world as a natural resource company has opened up many exciting opportunities to expand and diversity. Our business is based on woodfibre derived from trees – and it is in these fibres that we have found the key to unlock our sustainable future in a fast-changing world”.

Against this backdrop and given that climate change has the potential to negatively impact natural resources like woodfibre, climate change remediation is of particular strategic importance to Sappi.

ii) Key to this strategy is the reduction of fossil fuel usage- one of the major causes of climate change. Energy is one of Sappi’s key inputs, together with woodfibre, chemicals and water. Aggressively managing energy-use and increasing energy efficiency, positively impact profitability and environmental performance with reduced emissions and a lower carbon footprint. Globally, Sappi has achieved a reduction in absolute emissions intensity (Scope 1 and 2) of 8.8% over five years; an increase in energy self-sufficiency of 10.5% and we have also increased our generation of renewable energy by 5.1%.

iii) In the short term (i.e. less than five years), the most important components of Sappi’s strategy are the opportunity to reduce energy costs and take advantage of cogeneration opportunities. Even though globally Sappi’s energy costs as a percentage of cost of sales have declined over five years due to actions taken, it makes business sense for Sappi to aggressively manage energy usage and promote the generation of renewable energy. Most Sappi mills generate power onsite from fossil or renewable resources for internal consumption. In some instances (Westbrook Mill (North America), Gratkorn and Maastricht Mills (Europe) and Ngodwana Mill (Southern Africa)), excess power can be generated which is sold back into the power grid. This power is used for district heating in the vicinity of Sappi’s plants and for export into the public grid, thereby replacing fossil fuels.

In the long term (i.e. more than five years), Sappi aims to reduce its carbon footprint by improving energy efficiency and decreasing its reliance on fossil fuels. Sappi has, and will continue to achieve this by making process changes, installing more efficient equipment, reducing purchased energy (electricity and fossil fuel) by increasing its use of renewable energy – an approach that ultimately results in a reduction in CO2 emissions. In addition, the global demand for woodfibre is expected to increase for the foreseeable future, driven partly by the trend to use renewable resources like woodfibre, rather than finite fossil fuels for energy generation. Given that woodfibre is a key input to its manufacturing operations, maintaining continuity of supply is integral to Sappi's sustainability as a business. Accordingly, the group’s tree improvement research focuses on improving sustainable supply of wood fibre.

A key component of Sappi’s strategy focuses on extracting previously untapped value from woodfibre. Aligned with the group’s strategic move into adjacent markets, Sappi has invested in a nanocellulose pilot plant which offers the opportunity to build on its established presence in lightweight packaging and other materials – important given the need to reduce carbon emissions.

In addition, Sappi believes that climate and food security risks will affect cotton availability in the future. As dissolving wood pulp (DWP) is a raw material used in the manufacture of viscose, a direct competitor to cotton, the group has identified DWP as a high growth, high margin business of the future and has embarked on several expansion projects

There is a high level of consumer awareness, in all regions where Sappi operates, of the need to reduce fossil fuel emissions. In the USA, the country’s energy profile is only 17% renewable energy [Source: US Energy Information Administration, March 2018] whereas Sappi North America’s use of renewable energy is over 76%. This is a significant competitive benefit not just in terms of costs, but also in terms of customers choosing papers with a lower environmental footprint. Globally, Sappi’s generation of renewable energy stands at 45.2% (73% of which is own black liquor) – an important strategic advantage in terms of marketing and in the light of

possible carbon taxation and/or carbon levies.

Sappi has a long-standing commitment to control energy usage. Environmental impact is reduced not only by the amount of energy, but also by the type of energy consumed. Sappi has made significant efforts to reduce reliance on fossil fuels, thereby reducing greenhouse gas emissions and separating its operations from the volatility of energy prices.

Sappi's energy efficiency is enhanced through extensive use of cogeneration and through an ongoing drive to make process improvements and install more efficient equipment.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
Nationally determined contributions (NDCs)	In South Africa, we used legislated methodologies in preparing our carbon budget which the Department of Environmental Affairs (DEA) has accepted. Sappi SA's Pollution Prevention Plan (PPP) has also been approved by the DEA (until 31 Dec 2020). The PPP commits Sappi SA to reduce absolute GHG emissions.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

Given that Sappi depends on natural resources such as water and woodfibre, ensuring their renewability as we promote economic and social development makes sound business sense. Producing more efficiently and consuming more wisely is key to establishing resilient markets that stay within our planet's safe operating space, safeguard our natural wealth and contribute to overall economic and social well-being. We acknowledge that we do have an environmental footprint, however we aim to tread lightly by carefully managing and mitigating the environmental, climate and biodiversity impacts of our operations. Our aim is to enhance energy self-sufficiency, improve energy efficiency and decrease our reliance on fossil fuels. We are achieving this by making process changes, installing best available technology (BAT) which is more energy efficient, reducing purchased energy (electricity and fossil fuel) by increasing our use of renewable energy – an approach that ultimately results in a reduction in CO2 emissions. Since 2000, when we instituted a system for calculating greenhouse gases (GHGs), based on the premise of measure, monitor, manage and mitigate. One of our key strategic goals has been to reduce our carbon footprint by improving energy-use efficiency and decreasing our reliance on fossil fuels.

There are significant opportunities, inherent in our business and processes, that can help us to meet this key strategic goal and sustainability driver:

• The sequestration of carbon by our plantations and forests

• Using a high proportion of renewable energy, most of it self-generated in the form of black liquor, together with bark and woody biomass, and

• Identifying further cogeneration opportunities.

Over time, we have reduced purchased energy (electricity and fossil fuel) and increased our use of renewable energy – an approach which ultimately results in a reduction in GHG emissions and has positive economic implications. As pulp and paper production is highly energy intensive, the cost and availability of energy is a key consideration for us. Reducing our dependence on fossil fuels not only lowers GHG emissions but helps to isolate our operations from fluctuations in energy prices, making us a more sustainable and profitable business. Globally, over five years, we have increased energy self-sufficiency by 8.7%.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Scope
Scope 2 (market-based)

% emissions in Scope
40.33

% reduction from baseline year
5

Metric
Metric tons CO2e per metric ton of product

Base year
2014

Start year
2015

Normalized baseline year emissions covered by target (metric tons CO2e)
0.669

Target year
2020

Is this a science-based target?
No, but we anticipate setting one in the next 2 years

% achieved (emissions)
1

Target status
Underway

Please explain
Sappi Europe's 2020 intensity target is the reduction of specific CO2 equivalent emissions (Scope 1 + Scope 2) per air dried tons of saleable production. Saleable production includes pulp and paper. (units of CO2 eq/adt)

% change anticipated in absolute Scope 1+2 emissions
5

% change anticipated in absolute Scope 3 emissions
0

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target
Energy usage

KPI – Metric numerator
Purchased fossil energy in GJ

KPI – Metric denominator (intensity targets only)
Per metric ton of product

Base year
2014

Start year
2015

Target year

2020

KPI in baseline year
19.96

KPI in target year
17.97

% achieved in reporting year
8.2

Target Status
Underway

Please explain
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Purchased fossil energy in GJ in Sappi South Africa per metric ton of air dried saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce specific purchased fossil energy by 10%.

Part of emissions target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Target
Energy usage

KPI – Metric numerator
Total energy usage in GJ

KPI – Metric denominator (intensity targets only)
Per metric ton of product

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
22.77

KPI in target year
21.63

% achieved in reporting year
0

Target Status
Underway

Please explain
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total energy usage in GJ in Sappi Global per metric ton of air dried saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5%.

Part of emissions target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Target
Energy usage

KPI – Metric numerator
Total energy usage in GJ

KPI – Metric denominator (intensity targets only)
Per metric ton of product

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
15.27

KPI in target year
14.5

% achieved in reporting year
0

Target Status
Underway

Please explain
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total energy usage in GJ in Sappi Europe per metric ton of air dried saleable production which includes pulp and paper. (units of GJ/adt). The target is to reduce total energy usage by 5%.

Part of emissions target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Target
Energy usage

KPI – Metric numerator
Total energy usage in GJ

KPI – Metric denominator (intensity targets only)
Per metric ton of product

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
28.83

KPI in target year
27.39

% achieved in reporting year
0

Target Status
Underway

Please explain
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total energy usage in GJ in Sappi North America per metric ton of air dried saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5%.

Part of emissions target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Target
Please select

KPI – Metric numerator
Total energy usage in GJ

KPI – Metric denominator (intensity targets only)
Per metric ton of product

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
32.91

KPI in target year
31.26

% achieved in reporting year
3.47

Target Status
Please select

Please explain

Part of emissions target

Is this target part of an overarching initiative?
Please select

Target
Land use

KPI – Metric numerator

KPI – Metric denominator (intensity targets only)

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year

KPI in target year

% achieved in reporting year
100

Target Status
Please select

Please explain
Sappi owns, leases and manages plantations which are sustainably managed, thereby effectively mitigating deforestation.

Part of emissions target

Is this target part of an overarching initiative?
Other, please specify (Mitigate deforestation)

Target
Waste

KPI – Metric numerator
Total metric tons of landfilled waste

KPI – Metric denominator (intensity targets only)
Per metric ton of product

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
0.19

KPI in target year
0.228

% achieved in reporting year
0

Target Status
Underway

Please explain
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total metric tons of landfilled waste in Sappi South Africa per metric ton of air dried saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total landfilled waste by 10%. We did not achieve this target, however, we do have plans to remediate this and will report on these plans going forward.

Part of emissions target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	114	
To be implemented*	75	15563
Implementation commenced*	20	1835
Implemented*	82	198459
Not to be implemented	21	168461

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
1600

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
400000

Investment required (unit currency – as specified in CC0.4)
865000

Payback period
1-3 years

Estimated lifetime of the initiative
16-20 years

Comment
Upgrade to the system that shatters the Somerset Recovery Boiler smelt flow into smaller droplets. This upgrade will improve safety and reduce the shattering steam usage by 8,200 lb/hr.

Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
418

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
24644

Investment required (unit currency – as specified in CC0.4)

36030

Payback period
1-3 years

Estimated lifetime of the initiative
11-15 years

Comment
VSD installed in August 2017 at Tugela Mill

Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
7778

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
173568

Investment required (unit currency – as specified in CC0.4)
50624

Payback period
<1 year

Estimated lifetime of the initiative
3-5 years

Comment
Seals on the evaporator pumps at Tugela Mill. Savings based on reduced pumping from river pumps.

Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
12825

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
665343

Investment required (unit currency – as specified in CC0.4)
18080

Payback period
<1 year

Estimated lifetime of the initiative
>30 years

Comment
Blowline cooler water recovery at Tugela Mill. Energy saving based on 95 kWH/ton of pulp.

Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
9444

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
144640

Investment required (unit currency – as specified in CC0.4)
0

Payback period
<1 year

Estimated lifetime of the initiative
>30 years

Comment
Improve coal to steam ratio at Stanger Mill, better maintenance and operational control.

Activity type
Energy efficiency: Building fabric

Description of activity
Insulation

Estimated annual CO2e savings (metric tonnes CO2e)
7338

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
164456

Investment required (unit currency – as specified in CC0.4)
81722

Payback period
<1 year

Estimated lifetime of the initiative
>30 years

Comment
Replace damaged/missing thermal insulation on active steam and return condensate lines at Tugela Mill.

Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
122304

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
6602808

Investment required (unit currency – as specified in CC0.4)
9401588

Payback period
<1 year

Estimated lifetime of the initiative
21-30 years

Comment
At Saiccor Mill in South Africa, we are replacing three turbine generators with a high efficiency steam turbine generator set. Annual savings will be based mainly on reduced power purchases

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Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
6010

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
30374

Investment required (unit currency – as specified in CC0.4)
60749

Payback period
1-3 years

Estimated lifetime of the initiative
>30 years

Comment
Installation of Gas Producer CO composition probe at Ngodwana Mill

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Activity type
Energy efficiency: Processes

Description of activity
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
744

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)
36883

Investment required (unit currency – as specified in CC0.4)
69427

Payback period
1-3 years

Estimated lifetime of the initiative
>30 years

Comment
Improved handling efficiency of gas coal to reduce breakage at Ngodwana Mill

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	In addition to internal and regulatory standards, Sappi mitigates climate change-related risk by using external benchmarks to monitor environmental performance and ensure compliance with best practice. In terms of energy, for example, Sappi uses best practice energy consumptions indicated by the Technical Association of Pulp and Paper Industries (TAPPI) in the United States of American and the Pulp and Paper Technical Association of Canada (PAPTAC). The Swedish Kretsloppsanpassad Massafabrik (KAM) organisation has indicated what the best practice energy consumption for an entire mill should be for various mill types. Key performance indices include the following: Specific purchased power; Specific purchased fuel; Specific total power consumed; Specific total fuel consumed; Percentage power generated from renewable fuel; Percentage energy used originating from renewable fuel; Percentage of waste that can be combusted for heat gain compared with that which can potentially be combusted for heat gain. While performance against these parameters is not externally audited, a dedicated energy and emissions specialist monitors the accuracy, reliability and consistency of the data provided by the operations. Targets are monitored on a quarterly basis. Sappi's production processes and products are strictly regulated by legislation and external standards.
Dedicated budget for energy efficiency	This is in place at some of Sappi's mills in Europe and all mills in North America.
Employee engagement	Sappi North America has a Sustainability Ambassador programme that helps to support communications, training and education on environmental issues including energy savings and greenhouse gas reductions. Sappi Europe engages all employees through its Sappi Performance Engine and Eco-Effectiveness approach which involves all employees in continuous improvement activities. Sappi Southern Africa has developed an innovative e-platform game focused on sustainability, Earth Kind Agent, for employees. A tablet version of the game (iPad and Android) was launched in April 2015, giving access to our suppliers, customers and other stakeholders.
Financial optimization calculations	Profit Improvement Plans (PIPs) are managed at mill level by each section. These are smaller scale improvements/projects which require no or very little capital spend and can be implemented in a short period of time. In the last couple of years, the focus in all regions has been on energy efficiency, energy self-sufficiency as well as water savings. We have established energy platforms in each region tasked with sharing knowledge on how to improve efficiency and drive the energy strategy at each region.
Internal incentives/recognition programs	The Management Incentive Scheme (MIS) for the management group and regional board of directors of the SA mills is linked to SSA's sustainability performance in terms of energy reduction (total and fossil) against a set targets as from FY18 [as well as water and waste targets]. Sustainability targets are applicable to Saiccor, Ngodwana, Tugela and Stanger Mills and to the SA Regional Executives and Regional Management Teams.
Partnering with governments on technology development	Sappi SA has signed an agreement with the Department of Energy to build a 25 MW renewable energy plant at Ngodwana Mill which will feed into the national grid from 2020.
Other	In North America, Sappi has utilised PINCH technology and Lean Six Sigma techniques to optimize energy usage in the mills. Several investments in boiler technology, such as over-fire air modifications and allowance for higher utilisation of bio-fuels in boilers have been made.

C-AC4.4/C-FB4.4/C-PF4.4

(C-AC4.4/C-FB4.4/C-PF4.4) Do you implement management practices on your own land with a climate change mitigation and/or adaption benefit?
Yes

C-AC4.4a/C-FB4.4a/C-PF4.4a

(C-AC4.4a/C-FB4.4a/C-PF4.4a) Specify the agricultural or forest management practice(s) implemented on your own land with climate change mitigation and/or adaptation benefits and provide a corresponding emissions figure, if known.

Management practice reference number
MP1

Management practice
Biodiversity considerations

Description of management practice
Sappi's plantations are generally highly productive sites and are managed to use that productive capacity in tree growth. In addition, the genetic diversity within trees is of fundamental importance to our tree improvement programmes. Our strategies for managing biodiversity include: • Managing natural vegetation according to best practice in terms of burning, grazing and weed control to ensure health habitats. • Ongoing assessment and monitoring of veld condition. • Protection of sites from poaching, illegal medicinal plant collection and overgrazing. • Participation in the national stewardship programme through which we have seven declared nature reserves. Long-term integrated weed management plans on all our plantations. Invasive alien plants (IAPs) are widely considered as a major threat to biodiversity, human livelihoods and economic development. Currently, there are 379 species of plants list as IAPs in South Africa. As a result of their high diversity and far-reaching distribution, they are extremely difficult to control. We combat weeds by implementing weed control programmes, managing natural areas to maintain healthy vegetation (weeds generally spread into disturbed poorly managed areas) and reducing sources and avenues of seed dispersal. In all regions, our industry has played a significant role in expanding forests and plantations and thus carbon sinks. Harvesting is not equal to deforestation; it is an important part of the cycle of growth, materials manufacture and re-growth. In North America and Europe, the forests from which we source woodfibre regenerate naturally. In Southern Africa, our harvested plantations are replanted generally within a few months, and consequently the process of absorbing CO2 continues as the new trees grow. Harvesting our trees is balanced with re-growth. Sappi Forests belongs to the Institute for Commercial Forestry Research and the Tree Protection Co-operative Programme based in the Forestry and Bio-technical Institute at the University of Pretoria through which we belong to the internationally collaborative programme Biological Control of Eucalyptus Pests (http://bicep.net.au/) in Australia. In addition, we belong to the Eucalyptus Genome Network based at the University of Pretoria and to CAMCORE, which is dedicated to the conservation and utilisation of tropical and sub-tropical tree species.

Primary climate change-related benefit
Increasing resilience to climate change (adaptation)

Estimated CO2e savings (metric tons CO2e)

Please explain
<Not Applicable>

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation
Company-wide

Description of product/Group of products
All Sappi's products are based on woodfibre, a renewable natural resource grown in sustainably managed forests and plantations which sequestrate carbon.

Are these low-carbon product(s) or do they enable avoided emissions?
Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Forest carbon disclosure)

% revenue from low carbon product(s) in the reporting year
100

Comment
All Sappi's products are based on woodfibre, a renewable natural resource grown in sustainably managed forests and plantations which sequestrate carbon. Trees use water and sunlight to convert CO2 into carbohydrates, through the process of photosynthesis to provide energy and the building blocks for growth. Carbon removed from the atmosphere is effectively stored in plant material and wood, i.e. trees act as carbon sinks. Sappi is 40.9% energy self-sufficient and the group's renewable fuel energy usage currently stands at 45.2%. The carbon neutrality of biogenic fuels has been recognized by many studies and institutions, including the Intergovernmental Panel on Climate Change. In addition, in SA, all Sappi's owned and leased plantations are 100% FSC-certified, while globally 73.5% of fibre used in Sappi's operations is certified FSC, PEFC or SFI-certified, while the balance is obtained from known and controlled sources. This is important, as only about 13% of the world's forests are certified to a credible standard and deforestation of tropical rainforests is responsible for generating significant levels of greenhouse gas emissions.[https://www.worldwildlife.org/threats/deforestation]

Level of aggregation
Group of products

Description of product/Group of products
Most Sappi mills generate power on site from fossil- or renewable resources for internal consumption.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (Increased renewable energy usag)

% revenue from low carbon product(s) in the reporting year
100

Comment
In some instances (Westbrook Mill (North America), Gratkorn- and Maastricht Mills (Europe) and Ngodwana Mill (South Africa)), excess energy is generated which is sold back into the power grid. This energy is used for district heating in the vicinity of Sappi's plants and for export into the public grid, thereby replacing fossil fuels. Emissions are avoided by using renewable fuel energy sources instead of fossil fuel sources. In addition, emissions are avoided by power self-sufficiency instead of purchased power from an external power supplier with higher emissions than self-produced power

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C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
October 1 2013

Base year end
September 30 2014

Base year emissions (metric tons CO2e)
3802514

Comment
The base year is based on Sappi's 2014 financial year.

Scope 2 (location-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 2 (market-based)

Base year start
October 1 2013

Base year end
September 30 2016

Base year emissions (metric tons CO2e)
1636775

Comment
The base year is based on Sappi's 2014 financial year.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Row 1

Gross global Scope 1 emissions (metric tons CO2e)
3984945

End-year of reporting period
<Not Applicable>

Comment
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) guidelines used to calculate Scope 1 emissions. IPCC Fourth Assessment Report used for GWP factors for all combusted fuel sources.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are not reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
Market- based total Scope 2 figure reported. Eight out of fourteen operations report market- based Scope 2 figure.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Row 1

Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)
1561531

End-year of reporting period
<Not Applicable>

Comment
Market-based Scope 2 figure reported. Eight out of fourteen operations are able to report market-based Scope 2 figure.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source
Sappi Europe head office, sales offices and warehouses/offices outside mill premises

Relevance of Scope 1 emissions from this source
No emissions from this source

Relevance of location-based Scope 2 emissions from this source
Please select

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant but not yet calculated

Explain why the source is excluded
At present, Sappi only collects emission information from production facilities such as the mills. These are not production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) is yet to be evaluated. However, relative to Sappi's production facilities these emissions are not meaningful.

Source
Sappi North America head office

Relevance of Scope 1 emissions from this source
No emissions from this source

Relevance of location-based Scope 2 emissions from this source
Please select

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant but not yet calculated

Explain why the source is excluded
At present, Sappi only collects emission information from production facilities such as the mills. These are not production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) is yet to be evaluated. However, relative to Sappi's production facilities these emissions are not meaningful.

Source
Sappi Forests head and regional offices

Relevance of Scope 1 emissions from this source
No emissions from this source

Relevance of location-based Scope 2 emissions from this source
Please select

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant but not yet calculated

Explain why the source is excluded
At present, Sappi only collects emission information from production facilities such as the mills. These are not production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) is yet to be evaluated. However, relative to Sappi's production facilities these emissions are not meaningful.

Source
Sappi Limited and Sappi Southern Africa head office

Relevance of Scope 1 emissions from this source
Please select

Relevance of location-based Scope 2 emissions from this source
Please select

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant but not yet calculated

Explain why the source is excluded
At present, Sappi only collects emission information from production facilities such as the mills. These are not production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) is yet to be evaluated. However, relative to Sappi's production facilities these emissions are not meaningful.

Source
Sappi Technology Centres in Europe, North America and South Africa

Relevance of Scope 1 emissions from this source
No emissions from this source

Relevance of location-based Scope 2 emissions from this source
Please select

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant but not yet calculated

Explain why the source is excluded
At present, Sappi only collects emission information from production facilities such as the mills. These are not production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) is yet to be evaluated. However, relative to Sappi's production facilities these emissions are not meaningful.

Source
Sappi Lomati Sawmill – South Africa

Relevance of Scope 1 emissions from this source
Emissions are relevant and calculated, but not disclosed

Relevance of location-based Scope 2 emissions from this source
Please select

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are relevant but not yet calculated

Explain why the source is excluded
These emissions are not meaningful relative to Sappi's other production facilities. However this unit becomes part of Sappi's production facilities from 2018, and will be included from 2018 onwards.

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
309960

Emissions calculation methodology
Production of raw materials, additives, chemicals and packaging material included in Purchased goods and services emissions.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
This category includes Scope 3 emissions for the following regions: South Africa and Europe

Capital goods

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
During normal operating years, this is not material. In the event that a major project was done within the reporting year, we will provide this information.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
201755.62

Emissions calculation methodology
Included production of primary fuels and production of transport fuels.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
This category includes Scope 3 emissions for the following region: Europe

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
430638

Emissions calculation methodology
Local and imported raw materials, additives, chemicals and packaging material included in upstream transportation and distribution.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
This category includes Scope 3 emissions for the following regions: South Africa and Europe.

Waste generated in operations

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
16101.55

Emissions calculation methodology
For South Africa, data was obtained directly from the travel (flights and car hire) suppliers e.g. Europcar, Avis, Comair, British Airways etc. The general flight- and car CO2 emission factors are multiplied by the amount of flight hours or kilometres travelled by car to arrive at the Scope 3 emission value. For Europe, the distances travelled by the different transport types, are multiplied by associated fuel emission factors. Hotel stay carbon measurement is included in Business travel. The number of days stayed at hotels for business travelling purposes, multiplied by a factor of 23.6 kg CO2e/night.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
For South Africa, this category includes emissions for the transportation of employees for business travelling by air or via car hire. The information has been supplied by Sappi's in house travel agency for South Africa (Head office, Tech Centre, and mill operations). Forestry is excluded for this year's submission, but will be included next year). For Europe, this category includes emissions for the transportation of employees on business travelling by small car, medium car, large car, taxi, national rail, international rail, light rail, tram, London underground and air.

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
11421

Emissions calculation methodology
An estimation made for Europe operations: It is assumed that 80% of employees live within 15 km of the work place, and 20% live within 40 km of the work place. For SA, actual data was gathered for each mill as well as forest and head office, regarding the number of employees, mode of transport and distance from work. The days travelled to work and back is estimated at 230 days of the year. The distance travelled is multiplied by an average emission factor.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
This category includes Scope 3 emissions for the following regions: South Africa and Europe.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1040856

Emissions calculation methodology
For South Africa, data is obtained from the eight major South African transporters, transporting pulp and paper products to customers. The average fuel consumption of the truck is multiplied by the CO2 emission factor for diesel and then multiplied by the amount of kilometres travelled. Conversion factors are applied to achieve final value in metric units. For Europe distribution by sea, waterway, road (Truck, 60% 40t, 40% 25t) and rail (10% diesel, 90% electric) is taken into account, multiplying the respective CO2e emission factor with the distance travelled.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
For South Africa, not all transport companies have carbon footprints available. Only those companies that had the data readily available in South Africa were used in this year's submission. For Europe distribution by sea, waterway, road and rail is taken into account.

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology
After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Sappi does not have franchises.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
After a review and in relation to Sappi's major emissions (process and transport) this Scope 3 emission is of an insignificant quantum and impact. As such it does not warrant the time, manpower and expense to capture, record, monitor and manage this parameter.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
Not relevant, no other upstream.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation
Not relevant, no other downstream.

C-AC6.6/C-FB6.6/C-PF6.6

(C-AC6.6/C-FB6.6/C-PF6.6) Can you breakdown your Scope 3 emissions by relevant business activity areas?
Please select

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?
Please select

C-AC6.8/C-FB6.8/C-PF6.8

(C-AC6.8/C-FB6.8/C-PF6.8) Is biogenic carbon pertaining to your direct operations relevant to your current CDP climate change disclosure?
Yes

(C-AC6.8a/C-FB6.8a/C-PF6.8a) Account for biogenic carbon data pertaining to your direct operations and identify any exclusions.

CO2 emissions from land use management

Emissions (metric tons CO2)
1474000

Methodology
Default emissions factors

Please explain
Text field [maximum 2,400 characters] The Stock-Difference method was used to calculate the total carbon stock. Carbon stocks are measured at two points in time to assess carbon stock changes as presented in Equation 2.8 (IPCC 2006) Total merchantable standing volume was calculated on a per hectare basis to determine the appropriate Biomass Conversion and Expansion Factors (BCEFs). As country specific BCEFs were not available the default values for hardwoods and pines in the Temperate Climate Zone (Table 4.5, Chapter 4, Volume 4, IPCC 2006 guidelines p4.51) were used. As the BCEF factors change based on growing stock level (m^3/ha) the appropriate growing stock level class (i.e. <20, 21-40, 41-100, 100-200, >200) was identified, based on standing crop values. The appropriate BCEFS for standing merchantable timber values were then joined to each compartment record using a “Vlookup” function in excel (Table 2). Using this BCEFS value the total above ground biomass within each compartment was calculated. The proportion of below ground biomass “R” was determined using values published in Table 4.4 (Chapter 4, Volume 4, IPCC 2006 guidelines p4.49) for temperate forests (conifers for Pine, Eucalyptus spp for Eucalyptus and other broadleaf values for Acacia). Based on the above ground biomass each compartment was allocated to a class (i.e., <50, 50-150 and >150) and the appropriate R value (Table 3) was joined to the compartment records using a “Vlookup” function in excel. Both the BCEFS and R values were multiplied by the planted area of each compartment in order to calculate a weighted average value. Total biomass (bone dry tons) in each compartment was calculated as: Merchantable stock (m^3/ha) x BCEFS x (1+R) x Area (Refer to Equation 2.8b) The total standing dry mass of above and below ground biomass in tons dry mass per hectare was converted to a total amount of carbon per compartment by multiplying by 0.47 (default carbon fraction of biomass, Table 4.3, IPCC 2006 p4.48). Changes in deadwood, forest floor litter and soil carbon were excluded (Tier 1 level).

CO2 removals from land use management

Emissions (metric tons CO2)

Methodology
Please select

Please explain

Sequestration during land use change

Emissions (metric tons CO2)

Methodology
Please select

Please explain

CO2 emissions from biofuel combustion (land machinery)

Emissions (metric tons CO2)

Methodology
Please select

Please explain

CO2 emissions from biofuel combustion (processing/manufacturing machinery)

Emissions (metric tons CO2)

Methodology
Please select

Please explain

CO2 emissions from biofuel combustion (other)

Emissions (metric tons CO2)

Methodology
Please select

Please explain

C-AC6.9/C-FB6.9/C-PF6.9

(C-AC6.9/C-FB6.9/C-PF6.9) Do you collect or calculate greenhouse gas emissions for each commodity reported as significant to your business in C-AC0.7/FB0.7/PF0.7?

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.00104732

Metric numerator (Gross global combined Scope 1 and 2 emissions)
5546619.14

Metric denominator
unit total revenue

Metric denominator: Unit total
5296000000

Scope 2 figure used
Market-based

% change from previous year
3.31

Direction of change
Decreased

Reason for change
Increase in sales revenue combined with a decrease in emissions caused the intensity figure to decrease with a significant 3.31%. Decrease in emissions due to an increase in specific renewable energy usage per ton of saleable production as well as a decrease in overall energy usage due to ongoing energy efficiency initiatives.

Intensity figure
0.87

Metric numerator (Gross global combined Scope 1 and 2 emissions)
5546619.14

Metric denominator
metric ton of product

Metric denominator: Unit total
6408010

Scope 2 figure used
Market-based

% change from previous year
4.35

Direction of change
Decreased

Reason for change
Decrease due to an increase in specific renewable energy usage as well as a decrease in overall energy usage due to ongoing energy efficiency initiatives

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C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	3721433	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	204956	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	58556	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Africa	2091375
EU15	1510932
United States of America	382639

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Sappi Southern Africa	2091375
Sappi Europe	1510932
Sappi North America	382639

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Ngodwana Mill (SA)	1044092	-25.57803	30.66549
Saiccor Mill (SA)	561591	-30.18078	30.77091
Stanger Mill (SA)	186821	-29.36743	31.28908
Tugela Mill (SA)	298871	-29.15216	31.40536
Alfeld Mill (Germany)	134248	51.98592	9.82076
Ehingen Mill (Germany)	45304	48.26766	9.72712
Gratkorn Mill (Austria)	414659	47.13333	15.33333
Kirkniemi Mill (Finland)	265826	60.18815	23.94212
Lanaken Mill (Belgium)	126186	50.877	5.6427
Maastricht Mill (Netherlands)	176735	50.85857	5.69457
Stockstadt Mill (Germany)	347973	49.80421	8.46762
Cloquet Mill (Minnesota USA)	124269	46.72288	-92.4384
Somerset Mill (Maine USA)	208326	44.70652	-69.63782
Westbrook Mill (Maine USA)	50044	43.68397	-70.35211

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Heavy fuel oils	103148
Bituminous coal	2827597
Natural gas	894423
Waste tyre-derived fuel	79484
Transport fuels (diesel, petrol/gasoline)	16885
Paraffin/ kerosene	458
Renewable fuels (sludges, biomass, wood waste, hog fuel, bark)	30295
Black liquor	32637
Biogas	18

C-AC7.4/C-FB7.4/C-PF7.4

(C-AC7.4/C-FB7.4/C-PF7.4) Do you include emissions pertaining to your business activity(ies) in your direct operations as part of your global gross Scope 1 figure?

Please select

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Africa	696513	696513	696513	51263
EU15	877527	725792	1981011	942043
United States of America	83571	139226	321993	138688

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Sappi Southern Africa	696513	696513
Sappi Europe	877527	725792
Sappi North America	83571	139226

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2 location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Ngodwana Mill (SA)	26996	26996
Saiccor Mill (SA)	327815	327815
Stanger Mill (SA)	134329	134329
Tugela Mill (SA)	207373	207373
Alfeld Mill (Germany)	201565	198710
Ehingen Mill (Germany)	147935	145839
Gratkorn Mill (Austria)	49260	0
Kirkniemi Mill (Finland)	221183	221183
Lanaken Mill (Belgium)	162055	66515
Maastricht Mill (Netherlands)	1872	1213
Stockstadt Mill (Germany)	93659	92332
Cloquet Mill (Minnesota USA)	41063	41063
Somerset Mill (Maine, USA)	42491	98122
Westbrook Mill (Maine, USA)	17	41

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Purchased power	1657611	1561531

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	10886.5	Decreased	0.2	2% increase in absolute renewable energy consumption from the previous year which results in a decrease in purchased fossil fuel. Renewable energy includes own and purchased renewable energy sources. The total emissions for (Scope 1+2) for this reporting year are 5546619 metric tonnes of CO2e. The total emissions for the previous reporting year were 5568392 metric tonnes of CO2e. This means that the total change in emissions is 21773 metric tonnes of CO2e, which is equal to a 0.4% decrease. It is estimated that half of this reduction is due to the increase in Renewable energy usage. ((21773/2)/5568392)*100= 0.2%
Other emissions reduction activities	10886.5	Decreased	0.2	Specific total energy decreased by 0.4%, of which 55% is fossil fuel based. Due to an increased energy efficiency, Scope 1 and Scope 2 emissions decreased. The total emissions for (Scope 1+2) for this reporting year are 5546619 metric tonnes of CO2e. The total emissions for the previous reporting year were 5568392 metric tonnes of CO2e. This means that the total change in emissions is 21773 metric tonnes of CO2e, which is equal to a 0.4% decrease. It is estimated that half of this reduction is due to an increase in energy efficiency. ((21773/2)/5568392)*100= 0.2%
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 5% but less than or equal to 10%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	18715703	14058361	32774064
Consumption of purchased or acquired electricity	<Not Applicable>	32188	2677629	2999517
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	98684	<Not Applicable>	98684
Total energy consumption	<Not Applicable>	19136275	16735990	35872265

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Fuel Oil Number 2

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
9120

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat
779233

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Fuel Oil Number 6

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
374205

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
8562615

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization

4596469

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Tires

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
269853

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
64659

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Other, please specify (Sulphur)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
139271

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

Fuels (excluding feedstocks)
Kerosene

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
1831

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Wood Waste

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
4501855

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Black Liquor

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
14036269

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

---

Fuels (excluding feedstocks)
Biogas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
93351

MWh fuel consumed for the self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Biogas

Emission factor
54.6548

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Black Liquor

Emission factor
95.971

Unit
kg CO2e per GJ

Emission factor source

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Coal

Emission factor
995.297

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Diesel

Emission factor
75.3597

Unit
metric tons CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Fuel Oil Number 2

Emission factor
77.6538

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Fuel Oil Number 6

Emission factor
77.6538

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Kerosene

Emission factor
72.1538

Unit
kg CO2e per GJ

Emission factor source

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Natural Gas

Emission factor
56.1548

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Tires

Emission factor
85

Unit
kg CO2e per GJ

Emission factor source
DOE Instructions for Form EIA-1605, Appendix B, March 2013. NCASI suggested default emission factors.

Comment

Wood Waste

Emission factor
113.942

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment

Other

Emission factor
77.6538

Unit
kg CO2e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories IPCC Fourth Assessment Report (AR4) for GWP

Comment
Sulphur

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	4021671	3525542	1818948	1594556
Heat	779233	779233	0	0
Steam	23748088	23748088	10740945	10740945
Cooling	0	0	0	0

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor
Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type
Biomass (including biogas)

MWh consumed associated with low-carbon electricity, heat, steam or cooling
158902

Emission factor (in units of metric tons CO2e per MWh)
0

Comment
100% renewable fuel used by power supplier, supplying to Sappi Gratkorn Mill in Austria

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Waste

Metric value
0.07

Metric numerator
Tons

Metric denominator (intensity metric only)
Air dried ton saleable production

% change from previous year
5.9

Direction of change
Increased

Please explain
Tons of landfilled solid waste per air dried ton of saleable production are monitored. Saleable production includes paper, pulp and dissolving wood pulp. Landfilled solid waste methane emissions are included in total Scope 1 emissions, converted to CO2 equivalent.

Description
Waste

Metric value
31.12

Metric numerator
Cubic metres

Metric denominator (intensity metric only)
Air dried ton saleable production

% change from previous year
2

Direction of change
Decreased

Please explain
Wastewater effluent is monitored according to volume m3 per ton of saleable production. Saleable production includes paper, pulp and dissolving wood pulp. Anaerobically treated wastewater emits methane emissions which are included in Scope 1 emissions as CO2 equivalent. Water quality also plays a role, as the amount of chemical oxygen demand (COD) in the water influences methane production during anaerobic treatment. COD is also monitored.

Description
Energy use

Metric value
22.77

Metric numerator
GJ

Metric denominator (intensity metric only)
Air dried ton saleable production

% change from previous year

0.3

Direction of change
Decreased

Please explain
Total energy (TE) usage is monitored based on GJ per tons of saleable production. Saleable production includes paper, pulp and dissolving wood pulp. Energy usage relates to Scope 1 emissions as the highest contributing energy used is fossil based.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
High assurance

Attach the statement
ZIP_14270-0002_EmB2017_001 - Ehingen.pdf
Emissions data.pdf
ZIP_14280-0137_EmB2017_001 - Stockstadt A.pdf
ZIP_14310-1015_EmB2017_1 - Alfeld C.pdf
EmissionReport_05-07-18-01-19 - Kirkniemi.pdf
ZIP_14280-0100_EmB2017_1 - Alfeld B.pdf
EJR-2017-VERVL306-geverifieerd-20180302_101811 - Lanaken.pdf
ZIP_14270-0004_EmB2017_1 - Alfeld A.pdf
ZIP_14310-0932_EmB2017_001 - Stockstadt B.pdf

Page/ section reference
Differet for each file, several files attached

Relevant standard
European Union Emissions Trading System (EU ETS)

Proportion of reported emissions verified (%)
40

Scope
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Underway but not complete for current reporting year – first year it has taken place

Type of verification or assurance
Limited assurance

Attach the statement

Page/ section reference

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
50

Scope
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Please select

Attach the statement

Page/ section reference

Relevant standard
Other, please specify (National GHG Emission Reporting Regs)

Proportion of reported emissions verified (%)
50

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Other, please specify (Y-o-y change in energy usage)	ISO50001	Sappi SA region was audited for ISO50001 certification purposes. Certification received in 2017. The seven European operations are ISO50001 certified.
C8. Energy	Other, please specify (Y-o-y change in energy usage)	Income tax act S12L	In the Sappi Southern Africa region, third party verification was done for the Income tax act S12l. Certificates are issued by SANEDI (South African National Energy Development Institute). Sappi Europe's Paper Profiles are verified and contain energy data per product grade. All mills in SEU are EMAS-registered, which involves external verification. All three mills in Sappi North America (Somerset, Westbrook, Cloquet) are certified to ISO 14001, with internal audits annually. In addition, GHG emissions at Cloquet Mill were subjected to internal audit in 2017, while Somerset Mill's GHG emissions are currently being audited.
C8. Energy	Other, please specify (Y-o-y change i)	Eco-Management and Audit Scheme (EMAS)	Sappi Europe's Paper Profiles are verified and contain energy data per product grade. All mills in SEU are EMAS-registered, which involves external verification.
C8. Energy	Other, please specify (Y-on-y change in energy usage)	ISO14001	All Sappi mills are ISO 14001 certified. All Sappi mills are audited internally on an annual basis against climate change indicators such as energy usage and GHG emissions.

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Finland carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

EU ETS

% of Scope 1 emissions covered by the ETS
40.33

Period start date
January 1 2017

Period end date
December 31 2017

Allowances allocated
976254

Allowances purchased
514438

Verified emissions in metric tons CO2e
1490692

Details of ownership
Facilities we own and operate

Comment
Seven Sappi operations in Europe are regulated by the EU ETS.

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

Finland carbon tax

Period start date
January 1 2017

Period end date
December 31 2017

% of emissions covered by tax
8.78

Total cost of tax paid
930366

Comment
Kirkniemi Mill in Finland is regulated by Finland Carbon Tax.

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Reduce emissions and cover the shortage by external purchase of European Union Allowances.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?

No, and we do not currently anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

% total procurement spend (direct and indirect)

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Impact of engagement, including measures of success

Comment

All woodfibre originates in well managed forests and we only source from suppliers whose wood is verifiably at least FSC controlled wood eligible. We are currently in the processing of reviewing our strategic supplier approach and will be including climate change considerations going forward. For Sappi North America, suppliers are asked to provide a statement of compliance with the U.S. Lacey Act, signed by an authorized company representative.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Education/information sharing

Details of engagement
Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

Size of engagement

% Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement
In North America, we have established a Sustainability Customer Council. Amongst other activities, SNA accompanies members of the Customer Council on visits to forests to further understanding of the supply chain. Sustainability ambassadors in each region also help to educate consumers and customers about climate change-related issues.

Impact of engagement, including measures of success

C-AC12.2/C-FB12.2/C-PF12.2

(C-AC12.2/C-FB12.2/C-PF12.2) Do you encourage your suppliers to undertake any agricultural or forest management practices with climate change mitigation and/or adaptation benefits?
Yes

C-AC12.2a/C-FB12.2a/C-PF12.2a

(C-AC12.2a/C-FB12.2a/C-PF12.2a) Specify which agricultural or forest management practices with climate change mitigation and/or adaptation benefits you encourage your suppliers to undertake and describe your role in the implementation of each practice.

Management practice reference number
MP1

Management practice
Other, please specify (Certification, forestry management)

Description of management practice
In North America our Forestry Programme assists woodlot owners in the states of Maine, Minnesota, Wisconsin, and Michigan's Upper Peninsula develop, manage and harvest their woodlands. In Southern Africa, qualified extension officers work with growers in our enterprise development scheme Sappi Khulisa, to promote response planting and harvesting practices.

Your role in the implementation
Financial
Knowledge sharing
Operational

Explanation of how you encourage implementation
The success of our assistance programmes in North America and South Africa encourages implementation. In addition, in Southern Africa, we have established a group certification scheme for small- and medium growers. There are currently 42 members in the scheme with plantations ranging from less than a hundred hectares to 4,391ha in size. FSC®-certification is not yet practical for micro growers, largely because of financial and technical constraints. Sappi, with some industry partners, is currently researching ways of overcoming these barriers. Currently timber from micro growers it recognised as 'controlled wood' and can thus be used to produce FSC® products labelled as 'mixed sources'.

Climate change related benefit
Other, please specify (Responsible land management)

Comment
To further assist with the development of small growers and other forestry value chain participants, we have established a training centre at Richmond in KwaZulu-Natal (KZN). The training centre has Khulisa Ulwazi ('Growing Knowledge') as its slogan and is providing training to small growers, land reform beneficiaries and small-scale contractors in the technical and business aspects of forestry and small business management. In FY2017, the centre more than doubled its intake of trainees. To date, over 1,000 people have been trained.

C-AC12.2b/C-FB12.2b/C-PF12.2b

(C-AC12.2b/C-FB12.2b/C-PF12.2b) Do you collect information from your suppliers about the outcomes of any implemented agricultural/forest management practices you have encouraged?
No

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
Trade associations
Funding research organizations

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?
Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
Confederation of European Paper Industries (CEPI)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
The European Union has proposed the removal of support for co-firing of wood in coal plants which only produce electricity. The subsidies for the direct burning of wood to create renewable energy increase pressure on wood markets and distort them

How have you, or are you attempting to, influence the position?
Sappi concurs with CEPI's view that the current average efficiency of coal plants is between 30% and 35%. Burning wood as the main biomass source, in coal plants at these efficiencies, is a waste of raw material, not a climate reduction measure.

Trade association
Confederation of European Paper Industries (CEPI)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
In Europe, revisions to the European Trading Scheme (ETS) have been on the table for some time. One of the proposals is to adopt a tiered approach to carbon leakage which would favour some sectors over others.

How have you, or are you attempting to, influence the position?
We support CEPI's call to oppose any tiered approach and to advocate for full (100%) free allocation up to emissions efficiency benchmark levels for all sectors.

Trade association
Paper Manufacturers' Association of South Africa (PAMSA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Carbon tax poses a potential risk going forward for Sappi Southern Africa. We engaged National Treasury via PAMSA to motivate taking into account carbon sequestration by companies that own their own forests. Sappi's process starts with the planting of trees and our total supply chain is carbon positive. In addition, PAMSA is actively participating in the development of a local factor to input into the carbon accounting methodology that applies to the unique circumstances of plantation forestry in South Africa.

How have you, or are you attempting to, influence the position?
By supporting PAMSA. The SSA Regional Environmental Manager is the Chairman of the PAMSA Environmental Committee.

Trade association
American Forests and Paper Association (AF&PA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
There is an increasing trend to legislate and/or promote the use of biomass for energy.

How have you, or are you attempting to, influence the position?
Studies show that per ton of wood used, the paper and wood products manufacturing industry sustains nine times as many total jobs as the biomass energy sector. Sappi North America concurs with AF&PA's view that it is important for federal renewable energy policies should not require forest products manufacturing facilities to compete on an uneven playing field with their power suppliers and other energy producers for biomass fibre.

Trade association
American Forests and Paper Association (AF&PA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

AF&PA opposes recycled content mandates as an ineffective path to increasing paper recovery. Additionally, the distinction between pre- and post-consumer content constrains the amount of recovered fibre available for recycling and should not be used in government policies. The EPA has revised (6/18) its Comprehensive Procurement Guideline Program to clarify the definition of "recovered fiber" to include paper and paperboard scrap generated after completion of the papermaking process.

How have you, or are you attempting to, influence the position?

AF&PA, is collaborating with the Massachusetts Institute of Technology (MIT) to develop a new approach for a more comprehensive understanding of the trade-offs of changes in recovered fibre utilization. The MIT methodology applies a "systems dynamics" approach to consequential life cycle assessment for US paper production to model the system-wide effects. The project will deliver a comprehensive model to better educate policy makers and customers to make informed decisions about shifts in recovery rate and recycled content. Sappi personnel have worked alongside other stakeholders as members of a Technical Advisory Group and participants in several workshops to help define systems variables and interactions

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

At the Regional Sustainable Development Councils (Europe, North America and South Africa), Global Sustainable Development Council and the Social Ethics Transformation and Sustainability (SETS) committee meetings, policy and legislative items that can or do affect the sustainability of Sappi's business, including climate change, are discussed and appropriate actions are agreed.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
Other, please specify (Group climate change policy)

Status
Complete

Attach the document
Sappi-Group-Climate-Change-Policy.pdf

Content elements
Governance
Strategy
Risks & opportunities

Publication
In mainstream reports

Status
Complete

Attach the document
2017-Sappi-Annual-Integrated-Report.pdf

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify (Various environmental metrics)

Publication
In voluntary sustainability report

Status
Complete

Attach the document
2017-Sappi-Group-Sustainability-Report.pdf

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify (ESG information)

C13. Other land management impacts

C-AC13.1/C-FB13.1/C-PF13.1

(C-AC13.1/C-FB13.1/C-PF13.1) Do you know if any of the management practices implemented on your own land disclosed in C-AC4.4a/C-FB4.4a/C-PF4.4a have other impacts besides climate change mitigation/adaptation?
Yes

C-AC13.1a/C-FB13.1a/C-PF13.1a

(C-AC13.1a/C-FB13.1a/C-PF13.1a) Provide details on those management practices that have other impacts besides climate change mitigation/adaptation and on your management response.

Management practice reference number
Please select

Overall effect
Positive

Which of the following has been impacted?
Biodiversity
Soil
Water
Yield
Other, please specify (Described under impact)

Description of impact
Impacts: Cultural and natural heritage, Disease and pest control, Energy, Fire damage control, Flood attenuation, Food, Hunting/angling, Medicinals, Mountain biking, Paragliding, Plant seed dispersal. In 2012, Sappi Forests undertook an analysis of the supply of ecosystems services from their landholdings and the importance of these to stakeholders. The process involved determining and scoring both habitat functionality and the ecosystem services supplied in relation to the demand by stakeholders. Two assessments were conducted: one which focused on Sappi Forests as a whole, the other which was carried out at the scale of a single plantation estate, because it is at this scale that our activities, which actually impact on ecosystems, are managed. The Clairmont plantation in the Bulwer district was chosen for this assessment because it is a stand-alone plantation surrounded by other land uses and it contains a relatively wide array of natural assets. There are also rural communities living in close proximity to the plantation, which makes it suitable for assessing which services benefit various components of society. It was estimated that there are about 10 000 people living along the rivers downstream of Clairmont, where Clairmont has an influence as it makes up a significant part of the catchment. It was also estimated that about 10 000 people live within three km of the boundary of the plantation. Habitat functionality and the ecosystem services provided were assessed and rated. The top ranked services – those showing high levels of supply or opportunities included carbon storage, flood attenuation, energy supply, cash income to households and industrial wood while those at the bottom of the list included natural heritage, water storage and fibre (thatch etc.). These services are supplied at the lowest levels. The next step in the analysis was to assess the demand for the services. This was done from the perspective of four different user groups, these being stakeholders in Sappi, local users, downstream users and provincial and/or national users. A key in this analysis was to identify the relative dependence of the users on the services supplied. Greater dependence implies greater societal importance and values.

Have you implemented any response(s) to these impacts?
Yes

Description of the response(s)
By understanding the functionality and importance of the various ecosystems services provided, we can not only enhance environmental management, we can also prioritise the needs of our stakeholders. Understanding which ecosystem services our plantations supply in abundance and which are limited and which of these are extensively or little used by various user groups has enhanced: *Management of specific ecosystems and plantations; *Land use decisions that may affect the supply of ecosystems; *The manner in which Sappi Forests interacts with the various user groups; and * The way in which Sappi Forests promotes plantation forestry as a land use.

C-AC13.2/C-FB13.2/C-PF13.2

(C-AC13.2/C-FB13.2/C-PF13.2) Do you know if any of the management practices mentioned in C-AC12.2a/C-FB12.2a/C-PF12.2a that were implemented by your suppliers have other impacts besides climate change mitigation/adaptation?
Yes

C-AC13.2a/C-FB13.2a/C-PF13.2a

(C-AC13.2a/C-FB13.2a/C-PF13.2a) Provide details of those management practices implemented by your suppliers that have other impacts besides climate change mitigation/adaptation.

Management practice reference number
Please select

Overall effect
Positive

Which of the following has been impacted?
Biodiversity
Soil
Water
Yield
Other, please specify (Regeneration)

Description of impacts
Positive management of soil, air, water and wildlife, as well as regeneration of forest resources. In North America, this provides habitat for species that inhabit new or growing forests. For further information: https://www.sappi.com/sustainable-forestry-0

Have any response to these impacts been implemented?
Yes

Description of the response(s)
Approximately 87% of forests in the European Economic Area (EEA) countries are classified as semi-natural. These forests retain their natural characteristics to a certain degree, including biodiversity. Practices to promote biodiversity in Europe's semi-natural forests include: * Thinning which selectively the weaker trees leaving the stronger to strengthen the wood stand so that it can offer continuity of habitat for species and makes the stand fitter to stand sickness and calamities.. It also, protects and creates habitats for species dependent upon older large diameter trees and deadwood e.g. slowly colonising lichens, fungi, wood-boring insects and hole-nesting birds. * Avoiding soil compaction which protects the habitat of soil inhabiting bacteria, insects, worms, fungi, and animals. It also ensures that the growth and penetration of the roots of remaining trees and plants is unrestricted while minimising the risk of run-off and erosion. * Logging site planning which identifies the key elements for biodiversity that must be considered during harvesting operations. The most common features identified for biodiversity are often water, sensitive soils, valuable biotopes, deadwood, natural forest remnants (e.g. oak, ash and elm in pine/spruce plantations), and rare, threatened or endangered species. In each case, precautionary measures are taken to protect them and protection buffer zones are left. Seasonal timing can also be crucial especially with sensitive soils and species such as nesting birds. In North America, our suppliers do not (contrary to some misperceptions) harvest rare and slow-growing species. Instead, they use trees that are enormously abundant in the area in which we harvest. By focusing on thinning the population of pioneer species like aspen and birch, which grow rapidly but don't live long, biodiversity is promoted by giving other species a chance to take root. Using a variety of sources not only helps us to produce paper with the properties customers need, it also ensures that no particular species is over-harvested. In South Africa, qualified extension officers work with participants in our small grower enterprise development scheme, Sappi Khulisa, to promote sustainable forestry management practices like planting away from riparian zones.

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Group Head: Investor Relations and Sustainability	Chief Sustainability Officer (CSO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

Sappi Europe (SEU) is the largest fine paper producer in Europe and one of the largest publication and speciality paper manufacturers. SEU operates six paper mills and one speciality in Europe of which six have integrated pulp production lines.

Sappi North America (SNA) operates one paper mill, one speciality paper mill and one paper and dissolving wood pulp mill . In

FY 2017 SEU produced 48% of group sales, while SNA produced 26%.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	785000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	ZA	E000006284

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

L'Oréal

Scope of emissions
Scope 1

Emissions in metric tonnes of CO2e
2417

Uncertainty (±%)
5

Major sources of emissions
The fossil fuels combusted at the mills' own power stations.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The amount of emissions is based on the fuels used. The total emissions of the mill are verified, not the allocation to the products as specified here. Emissions from onsite transport are also included.

Requesting member
L'Oréal

Scope of emissions
Scope 2

Emissions in metric tonnes of CO2e
2961

Uncertainty (±%)
10

Major sources of emissions
Production based on purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
This is metered information. The emissions are based on suppliers' information.

Requesting member
L'Oréal

Scope of emissions
Scope 3

Emissions in metric tonnes of CO2e
1794

Uncertainty (±%)
100

Major sources of emissions
The emissions associated with the manufacture of pulp, non-fibrous raw materials as well as fuels and transportation of these.

Verified
No

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
We have followed the guidelines of Eurograph's USER GUIDE TO THE CARBON FOOTPRINT OF GRAPHIC PAPER v1.0 (2010). The downstream transport emissions to the printer/ converter are included in this figure.

Requesting member
Philip Morris International

Scope of emissions
Scope 1

Emissions in metric tonnes of CO2e
7255

Uncertainty (±%)
5

Major sources of emissions
The fossil fuels combusted at the mills' own power stations.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
This amount of emission is based on the fuels used. The total emission of the mill are verified, not the allocation to the products as specified here. Emissions from onsite transportation are also included.

Requesting member
Philip Morris International

Scope of emissions
Scope 2

Emissions in metric tonnes of CO2e
8814

Uncertainty (±%)
10

Major sources of emissions
Production of purchased electricty and steam.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
This is metered information. The emissions are based on suppliers' information.

Requesting member
Philip Morris International

Scope of emissions
Scope 3

Emissions in metric tonnes of CO2e
5590

Uncertainty (±%)
100

Major sources of emissions

The emissions associated with the manufacture of pulp and non-fibrous raw materials as well as fuels and transportation of these.

Verified
No

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
We have followed the guidelines of Eurograph's USER GUIDE TO THE CARBON FOOTPRINT OF GRAPHIC PAPER v1.0 (2010). The downstream transport emissions to the printer/converter are included in this figure.

Requesting member
Bank of America

Scope of emissions
Scope 1

Emissions in metric tonnes of CO2e
421

Uncertainty (±%)
5

Major sources of emissions
The fossil fuels combusted at the mills' own power stations.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
This amount of emissions is based on the fuels used. The total emissions of the mill are verified, not the allocation to the products which had to be done here. Emissions from onsite transport are also included.

Requesting member
Bank of America

Scope of emissions
Scope 2

Emissions in metric tonnes of CO2e
163

Uncertainty (±%)
10

Major sources of emissions
Production of purchased electricity and steam.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
This is metered information. The emissions are based on suppliers' information.

Requesting member
Philip Morris International

Scope of emissions
Scope 3

Emissions in metric tonnes of CO2e

Uncertainty (±%)
100

Major sources of emissions
The emissions associated with the manufacture of pulp, non-fibrous raw materials as well as fuels and transportation of these.

Verified
No

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
We have followed the guidelines of Eurograph's USER GUIDE TO THE CARBON FOOTPRINT OF GRAPHIC PAPER v1.0 (2010). The downstream transport emissions to the printer/converter are included in this figure.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

Carbon dioxide emissions are reported in our Global Sustainability report and in the Annual Integrated Report

https://cdn-s3.sappi.com/s3fs-public/2017-Sappi-Group-Sustainability-Report.pdf

Also in our local EMAS reports, available publicly on sappi.com:

https://www.sappi.com/alfeld-mill

https://www.sappi.com/gratkorn-mill

https://www.sappi.com/lanaken-mill

https://www.sappi.com/ehingen-mill

https://www.sappi.com/kirkniemi-mill

https://www.sappi.com/maastricht-mill

https://www.sappi.com/stockstadt-mill

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Managing the different emission factors of diverse and numerous geographies makes calculating total footprint difficult	More cooperation from our large suppliers to disclose their own emission data and Scope 3 emissions.
Other, please specify	When material is sold through merchant partners we do not always have visibility to sales data to the end use customer. Any customer supplied consumption data would help.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

· We are constantly working to improve our use of the most up-to-date CO2-factors for our raw materials.

· We are constantly improving the accuracy of allocations of raw materials to products

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member
Philip Morris International

Group type of project
Other, please specify (Change in established relationship)

Type of project
Please select

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings

Estimated payback
0-1 year

Details of proposal
Optimising, forecasting, planning, transport and/or order size.

Requesting member
L'Oréal

Group type of project
Other, please specify (Change in established relationship)

Type of project
Please select

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings

Estimated payback
0-1 year

Details of proposal
Optimising forecasting, planning, transport and/or order size.

Requesting member
Bank of America

Group type of project
Other, please specify (Change in established relationship)

Type of project
Other, please specify

Emissions targeted
Please select

Estimated timeframe for carbon reductions to be realized
0-1 year

Estimated lifetime CO2e savings

Estimated payback
0-1 year

Details of proposal
Optimising forecasting, planning, transport and/or order size.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?
No

SC3.1

(SC3.1) Do you want to enroll in the 2018-2019 CDP Action Exchange initiative?
No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2017-2018 Action Exchange initiative?
No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services, if so, what functionality will you be using?
Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.
0.43

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.
CFP 2017 Algro Design Alfeld.pdf
CFP 2017 Fusion Ehingen.pdf
CFP 2017 Algro Finess Alfeld.pdf
CFP 2017 Leine Mühle Alfeld.pdf

Name of good/ service
Algro Design

Description of good/ service
SBB

Type of product
Intermediate

SKU (Stock Keeping Unit)
ton

Total emissions in kg CO2e per unit
1334

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions
Other, please specify (CEPI and Europgraph carbon footprint)

Name of good/ service
Fusion

Description of good/ service
Topliner

Type of product
Intermediate

SKU (Stock Keeping Unit)
Ton

Total emissions in kg CO2e per unit
654

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions
Other, please specify (CEPI and Eurograph footprint)

Name of good/ service
Leine Muehle

Description of good/ service
Uncoated flexpack

Type of product
Intermediate

SKU (Stock Keeping Unit)
Ton

Total emissions in kg CO2e per unit
1366

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions
Other, please specify (CEPI and Eurograph Carbon footprint)

Name of good/ service
Algo Fin Algro Fin TO Algro Finess Algro Finess H Algro Finess T Royal Poncho A

Description of good/ service
Coated flexpack

Type of product
Intermediate

SKU (Stock Keeping Unit)
Ton

Total emissions in kg CO2e per unit
1339

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions
Please select

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

SC4.2c

(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit

SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?
Please select

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Public	Investors Customers	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms