

C0. Introduction

C0.1

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

Sappi is a global diversified woodfibre company with a direct and indirect customer base across more than 150 countries.

We create value through six streams:

* Forests: Our 100% Forest Stewardship Council® (FSC®)-certified plantations in South Africa give us a low-cost woodfibre base on which our business depends and are thus a key pillar of competitive advantage. Our leading-edge tree improvement programmes aim to grow better trees faster, thereby ensuring this advantage is maintained and enhanced.

* Manufacturing excellence: We focus on enhancing machine efficiencies, digitising our processes to make the smart factory a reality, reducing variable costs through new practices in logistics and procurement, as well as implementing go-to-market strategies which lower the cost of serving our customers and increase customer satisfaction.

* Bioproducts: We are unlocking the chemistry of trees and meeting the challenges of a carbon-constrained world by establishing a strong position in adjacent businesses including: nanocellulose, sugars and furfural, lignosulphonates, biocomposites and bio-energy. Extracting more value from each tree is strengthening our core business model.

* Dissolving wood pulp: Dissolving wood pulp (DWP) is a truly sustainable raw material. Our customers transform our DWP into products which meet the needs of people around the globe every day. Products which enable fashion, household comfort, personal beauty and hygiene, as well as a healthy lifestyle.

* Specialities and packaging papers: Our customers use our specialities and packaging papers to add value to niche markets, enable product differentiation and offer environmentally conscious consumers an alternative to fossil-fuel based packaging. Our focus on innovation helps our customers to meet and anticipate the challenges of changing market dynamics.

* Printing and writing papers: While the digital age has impacted on the use of paper, our printing and writing papers continue to meet the needs of consumers and marketers around the world. They rely on paper for a tactile, emotional experience no other communication medium can replicate.

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 with access to a further 129,000ha of plantations. Globally we have 12,645 employees.

In FY2018, production included:

- 5.7 million tons of paper
- 2.3 million tons of paper pulp
- * 1.4 million tons of dissolving wood pulp.

In FY2018, in terms of production of group sales, Europe accounted for 51%, North America for 25% and South Africa for 24%.

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.

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 2017	September 30 2018	Yes	3 years

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	Yes [Consumption only]

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

The largest percentage of our revenue is based on woodfibre which is used for paper, paper pulp and dissolving wood pulp. The wood and pulp needed for products is either grown by Sappi, produced within Sappi or bought from accredited suppliers. Sappi sells almost as much pulp as it buys. To calculate this figure, we have considered all our own pulp sales and purchases, as well as the revenue from timber-derived products.

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) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Other, please specify (Board chair)	Chairman of the Social, Ethics, Transformation and Sustainability Committee, a fully constituted board committee. This responsibility, to some extent, also extends to the Chairman of the Audit and Risk Management Committee who has oversight of the risk management function, given that climate change is a risk.

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	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	The Social, Ethics, Transformation and Sustainability (SETS) Committee, a fully constituted Board Committee, has overall responsibility for climate change-related issues. The SETS Committee convened three times in 2018. 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 key trends and developments together with strategy and implementation and makes recommendations which are fed through to the SETS committee.

C1.2

(C1.2) Provide the highest management-level 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 (do not include the names of individuals).

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

- Climate-change related research, such as the group's tree improvement research which focuses on improving the sustainable supply of woodfibre
- Research related to the reduction of greenhouse gas (GHG) 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 energy efficiency, decreased energy usage and a reduction in GHGs are always a consideration
- * The work of the E4 cluster, a global team tasked with ensuring consistency and accuracy of environmental metrics. Responsibility has been allocated to this individual because of their expertise in engineering, research, manufacturing and project execution as well as operational and risk management.

Sappi has manufacturing operations in three regions: Europe, North America and South Africa. The issues and regulations relating to climate change differ considerably across these regions. Accordingly, in each region, climate change related issues are monitored by the Regional Sustainability Councils and fed through to the Group Sustainable Development Council (GSDC) and ultimately to the Social Ethics Transformation and Sustainability (SETS) Board Committee. Should a group response to climate-related issues/ challenges be required, this would be formulated by the GSDC which is chaired by the Group Head: Investor Relations and Sustainability; with final direction given and responsibility allocated by the SETS Committee. In addition, the Global Risk Manager and Group Head of Technology present key risks on at least an annual basis to the Sappi Global-Executive Committee for review. The Group Technology Management Team, the Group Risk Management Teams and the Energy, Emissions, Environment and Effluents (E4) Cluster and Cluster 4.2 Technology, Equipment and Efficiency meet on average every three months to monitor and action specific business needs which may include subjects related to climate change initiatives.

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 (do not include the names of individuals).

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 SA mills are linked to Sappi Southern Africa's sustainability performance in terms of energy reduction against a set target.

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	1	2	Text field [maximum 2,400 characters] Short-term is considered one to two years
Medium-term	3	5	In line with management accounting's five-year financial forecast plan.
Long-term	5	10	In line with management accounting's forecast plans. This timeline also takes into account the time frames set out in the Paris Agreement in terms of the following ambitions: 2023 Global Stocktake plan and 2025 New National Climate Plans. It also takes into account Sappi Forests' research planning horizons in response to climate change.

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 Manager and Group Head Technology Cluster reviews and presents the Group key risks, including climate change-related risk on at least an annual basis to the Sappi Global Executive Team which in turn reports regularly on these risks to the Audit Committee and the Board . This time frame aligns with In line with management accounting's forecast plans. The timeline also takes into account the time frames set out in the Paris Agreement in terms of the following ambitions: 2023 Global Stocktake plan and 2025 New National Climate Plans .

C2.2b

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

The Sappi group has an established culture of managing key risks. There are a significant number of embedded processes, resources and structures in place to address risk management requirements. These range from internal and external audit systems, insurance, IT security, compliance and governance processes, quality management and a range of other line management interventions. In the broadest sense, effective risk management ensures continuity of operations, service delivery, achievement of objectives (strategic and otherwise), and the protection of the interests of the group. To achieve objectives, the risk management process is aligned with and compatible with Sappi's strategy, taking into account the recommendations set out in ISO 31000 standard (for guidance only) 'Risk management – Principles and guidelines', as well as King IV.

The Sappi Limited board of directors is responsible for the governance of risk. The Sappi Limited Audit and Risk Committee, in its capacity as a board committee, is tasked with assisting the board in carrying out its risk management responsibilities at the group level. Notwithstanding the above, the responsibility for the implementation of risk management processes rests with the line management in each region, business unit and operation.

The physical and transition risks associated with climate change could affect our business, given that our business is based on woodfibre, a renewable natural resource. Climate change risk is considered under natural resource constraints as one of our top ten key risks.

All our mills are ISO14001-certified and our mills in Europe and South Africa are ISO50001-certified. As part of these third-party certified management systems, our mills have implemented procedures for identifying and taking appropriate, pre-emptive action to avoid or mitigate identified environmental risks. Our plantations in South Africa are 100% FSC-certified, meaning that environmental risks are identified and avoided or mitigated.

In 2018, there were record high temperatures in Europe. There were also major wildfires in northern England, Sweden and Greece. The 2017 fire year in the United States of America (USA) was one of the most destructive on record and the most expensive in USA history, with damage estimates topping US\$10 billion. To date, the damage in the 2018 season has also been extensive, with extreme temperatures across large parts of North America.

While our business is wholly dependent on woodfibre, given SEU'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 SNA, 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. However, the situation is different in Southern Africa, where Sappi Forests owns and leases 387,000 ha of land, with contracted supply covering a further 129,000 ha. Climate change has already impacted some of our plantations and has the potential to significantly impact our woodfibre base. Accordingly, we invest in world-class tree improvement programmes to mitigate the risk, beginning with understanding where the largest risks of climate change will be to Sappi, how climate is likely to change further into the future and to formulate a multi-pronged response which involves, amongst other things:

*** Climate change investigations** — to determine which plantations are most at risk, and also to identify which climatic variables are likely to change, as well as the magnitude and direction of such change.

*** Replacing pure species with hybrids** Traditional tree breeding is a relatively slow process and in order to keep up with environmental changes, Sappi's tree breeding programme is producing and selecting the most optimally suited hybrid varieties for each climatic zone. Our tree breeding division has a target of developing a hybrid varietal solution for all our sites by 2025.

Our tree improvement programmes represent an opportunity for competitive advantage.

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 current regulation, we continue to monitor the situation regarding carbon taxes in each region where we operate. In North America, carbon taxes do not appear to be an imminent risk. In Europe, carbon tax in Finland has been in place since 1990 carbon tax in Finland has been in place since 1990 and is in effect in all European operations. In South Africa, through the Paper Manufacturers' Association of South Africa (PAMSA), we engaged with National Treasury on the development of carbon tax which has now been implemented. In each region where we operate, carbon sequestration by our plantations and forests from which we source woodfibre offers a potential buffer against possible carbon taxes. There are ongoing regulation reviews on this subject. Current regulation whereby reserves of good quality wood are being used to produce energy, with government subsidies supporting the practice is an issue. Pulp & paper production in the industry could create 9.5 times more added value and more than six times more jobs than burning wood for bioenergy only.
Emerging regulation	Relevant, sometimes included	In Europe, we are monitoring the situation in terms of emerging regulations which is dynamic, with certain member states such as the Netherlands considering the development of an additional carbon tax to support the EU target of net zero GHG emissions and carbon neutrality by 2050.
Technology	Relevant, sometimes included	We 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. As we experience a changing climate in our operations and source of woodfibre we are intensifying our focus on climate research. Our world-leading tree improvement programmes which focus, amongst other things, on mitigating the impacts of climate change, are a core pillar of our competitive advantage.
Legal	Relevant, sometimes included	Legal aspects are considered under "regulation" and "emerging regulation."
Market	Relevant, sometimes included	Consumers are looking for products with lower carbon footprint. We have expanded our portfolio of lightweight speciality and packaging grades to meet this need.
Reputation	Relevant, sometimes included	Many consumers erroneously equate deforestation with pulp and paper companies like Sappi. This is mitigated by responsible sourcing activities: Globally, 75.2% of fibre supplied to our mills is certified. In Europe, North America and Southern Africa, the percentage of certified fibre in FY2018 was respectively 78%, 58% and 82.2%. 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 for Forest Management.
Acute physical	Relevant, sometimes included	Drought and fire risk, which are exacerbated by climate change, are an ongoing risk.
Chronic physical	Relevant, always included	Climate change could also cause the spread of disease and pestilence into our plantations and fibre sources, far beyond their traditional geographic spreads, increasing the risk that wood supply necessary to our operations may be negatively impacted.
Upstream	Relevant, always included	The availability of harvested timber may be limited by factors exacerbated by climate change 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	Outbound transportation and distribution services that are paid for by Sappi are included in the upstream transportation and distribution because the reporting company purchases the service. It is assumed that Sappi pays for all outbound transportation, and therefore the emissions are included in "Upstream transportation and distribution" category.

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 units 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.

As an example of our response to transitional risk: in South Africa the long-anticipated carbon tax has been signed into law., Major capex investment is underway at Saiccor Mill with the aim to reduce fossil fuel emissions with new recovery technology. In terms of physical risk, our plantations in South Africa could be physical affected by climate change. One of the ways in which we are mitigating this risk is by adjusting and directing our tree breeding strategy through the use of modelled future climate data: Traditional tree breeding is a relatively slow process and in order to keep up with environmental changes, Sappi's tree breeding programme is producing and selecting the most optimally suited hybrid varieties for each climatic zone. Our tree breeding division has a target of developing a hybrid varietal solution for all our sites by 2025. We are also making use of genetic tools, like DNA fingerprinting, to enhance and accelerate their breeding and selection process.

Another way in which we are mitigating risk is by facilitating the production of more rooted cuttings — as pine and eucalypt hybrids are more successfully propagated through rooted cuttings rather than seed, a strategy is being rolled out to meet future requirements. In addition to the recent construction of Clan Nursery and the rebuild of the Ngodwana Nursery, we plan to upgrade Richmond Nursery in 2023 to enable the production of additional hybrid cuttings in addition to seedlings.

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: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

In South Africa, 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. Our 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. These actions mean that this risk is also an opportunity.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

13462968.75

Explanation of financial impact figure

The minimum amount assumes our forest research keeps pace with climate change so that we manage to keep woodfibre supply to our operations constant, the maximum assumes we lose 10% of our growth.

Management method

Research and development of genetically improved planting stock has been conducted at Sappi's Shaw Research Centre in Howick for over 25 years. Tree improvement is aimed at increasing pulp yield produced per hectare by testing various species and hybrids across Sappi's diverse landholdings. As well as growth improvements, trees are bred for superior wood properties and resistance to biotic and abiotic threats including frost, drought, pests and diseases. A broad genetic base, acquired over 25 years and a skilled breeding team exploiting new technologies are some of the assets of the programme.

Cost of management

3700000

Comment

This amount reflects Sappi Forests' research budget.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Supply chain

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

In Europe, exceptionally low water levels in most of the region's rivers are not affecting our mills directly, but are having an impact on transport logistics.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

178500

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The amount given here represents a surcharge

Management method

In FY2018, the low water situation led to shortage of vessels/barges on the inland waterways as the vessels were able to carry less containers per vessel. We paid surcharges to secure the required barge capacity and also made use of alternative options (train and truck traffic to ports).

Cost of management

178500

Comment**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: Other

Type of financial impact

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

About as likely as not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

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, tripling the amount of water in the dam.

Cost of management

1637538

Comment

The cost given here was the cost of raising the dam wall. The annual maintenance cost is approximately US\$6,153 per annum and the five-yearly inspection cost is approximately US\$7,792.

Identifier

Risk 4

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

Write-offs and early retirement of existing assets (e.g., damage to property and assets in "high-risk" locations)

Company- specific description

Fire is an ever-present, immediate and ongoing 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 2017 and 2018, 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 14,000 ha of our plantations. These abnormal weather conditions might be more frequent as a result of climate change. 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. 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. While the impact of fires on our plantations during fiscal 2011 to fiscal 2018 was substantially less than in fiscal years 2007 through 2010, we cannot be certain that this situation will continue going forward. The risk of increased forest fires could also impact the availability of market pulp in Europe. About 6% of the woodfibre used at our European mills originates from Portugal and Spain, countries that have suffered from severe forest fires in the recent years.

Time horizon

Current

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

In South Africa we have managed to negotiate a slight reduction in insurance premiums since the great fires of 2007/8, but this is not reflected in our insurance cost.

Management method

Given that fire is a key risk on our plantations, our forestry operations belong to a number of fire associations, We have also made significant investments in the best technology (cameras, satellite imaging etc).

Cost of management

1000000

Comment

Globally we have seen an increase in forest fires over the last couple of years which is attributed to climate change (and in South Africa in recent years the Western and Southern Cape) have experienced devastating fires. Although these fire were not directly related/impacting Sappi operations, the effect has been that insurers are increasingly reluctant to insure plantations and have either exited the market or increased their premiums. However, we have not yet seen an increase in insurance cost yet due to climate change even though our fire prevention and fighting costs have increased.

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?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

Brand manufacturers and consumers are looking for more environmentally friendly, lighter weight packaging

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

54350000

Potential financial impact figure – maximum (currency)

108700000

Explanation of financial impact figure

The figures given here represent 5-10% of current group revenue for speciality products and anticipate a 5-10% revenue increased in speciality products given. This is in line with our aim, by 2020, for the composition of our group EBIDTA to be balanced such that 25 percent is derived from packaging and specialities,

Strategy to realize opportunity

We significantly expanded our speciality and packaging paper capacity in 2018 by concluding We concluded the acquisition of the speciality paper business of Cham Paper Group Holding AG (CPG). The transaction includes the acquisition of CPG's Carnignano and Condino Mills (Italy) and its digital imaging business located in Cham (Switzerland), as well as all brands and know-how. Significantly, the acquisition has added 160,000 tons of speciality paper to our capacity, supporting our diversification strategy and 2020Vision to grow in higher margin growth segments. Investment wasere made in Rockwell Solutions in Scotland to supply alternative packaging solutions as an eventual substitute or replacement of plastics.

Cost to realize opportunity

149000000

Comment

In terms of financial impact, the acquisition will add US\$212 million of sales and approximately US\$23 million of EBITDA before taking synergies into account.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Other

Type of financial impact

Reduced exposure to future fossil fuel price increases

Company-specific description

The South African government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) aims to secure electrical energy from the private sector via renewable energy sources to add to the national grid. In 2018, Sappi Southern Africa reached financial close with the Department of Energy to build a 25 MW biomass energy plant at Ngodwana Mill in Mpumalanga province.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1000000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Financial impact: US\$1 billion direct value add over 20 years

Strategy to realize opportunity

Sappi's consortium partners in the project are KC Africa and African Rainbow Energy and Power. Sappi will have a 30% stake in the facility, which is expected to contribute to the national grid from July 2020. 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 tons per hour of biomass in a boiler to generate steam and drive a turbine to generate electricity which will be fed into the national grid. Sappi already contributes to the national grid by selling surplus energy from Ngodwana Mill to the state power utility, Eskom. With this project, Sappi has become one of only a few companies in South Africa to embark on a biomass energy project.

Cost to realize opportunity**Comment**

We believe this project will be a catalyst for energy transition in South Africa. In addition, the project will employ 350 South Africans during construction and biomass collection from surrounding plantations will result in 50 new jobs. The opportunity cost is confidential.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other

Type of financial impact

Other, please specify (Better competitive position to reflect shifting consumer preferences, including traceability and transparency, resulting in increased revenues)

Company-specific description

Based partly on concerns about deforestation and its impact on climate change, consumers are increasingly demanding certified products. All wood used by Sappi is legally harvested and comes from sustainably managed forests and tree plantations in accordance with the following credible third-party forest certification systems: The Forest Stewardship Council® (FSC®), the Programme for the Endorsement of Forest Certification™ (PEFC™), the Sustainable Forestry Initiative® (SFI®) and other PEFC-endorsed systems. Across the group, 75.2% of fibre supplied to our mills is certified. Our global target is to achieve 79% by 2020 (see Targets). In SEU, SNA and SSA, the percentage of certified fibre supplied 2018 was respectively: 78%, 58% and 82.2%. Our plantations in South Africa are 100% FSC-certified for Forestry Management.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Strategy to realize opportunity

Sappi North America (SNA) recently transitioned to a multi-site Chain of Custody certificate as a result of a successful audit under the FSC, PEFC and SFI programmes. Overall, this transition has reduced complexity and increase transparency for all parties, including Sappi customers. In addition, in South Africa we recognised that we needed to obtain certification over and above the FSC Group Scheme certification, based on the difficulty of getting small growers certified and on customers' requests for PEFC labelled products. PEFC endorses national certification schemes, which meant South Africa had to develop a new certification scheme including a forest management standard. This is now known as the South African Forest Assurance Scheme (SAFAS) and has been fully endorsed by the PEFC. Two certification bodies are currently in the process of being accredited to undertake audits and certify organisations to both SAFAS forest management and chain of custody certification.

Cost to realize opportunity

110000

Comment

Approximate cost of appointing a global certification manager

Identifier

Opp4

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

Reduced exposure to future fossil fuel price increases

Company-specific description

Some 150 years of intensive coal mining in South Africa have produced about a billion tons of discarded thermal-grade coal fines. To utilise this energy source, we constructed and tested a small fuel rod manufacturing plant at Ngodwana Mill. The fuel rods comprise a mixture of coal slurry, biomass and lignosulphonate, which can be used as a coal replacement. Initial fuel rod test results are positive and could lead to reduced greenhouse gas emissions when compared to low-grade coal. Sappi has entered into a joint venture agreement with the Industrial Development Corporation (IDC) as a strategic equity and debt partner to provide the balance of the capital required for the demonstration plant.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

770

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The figure given is an estimation of the anticipated fuel rod costs per ton, approximately two-thirds of the costs of coal per ton.

Strategy to realize opportunity

The fuel rods will be tested in one of Sappi's boilers at Tugela Mill for a twelve-month period. The demonstration facility will be upgraded if the test results are positive.

Cost to realize opportunity

7692307

Comment

The cost of US\$7,692,307 is the cost of the plant.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Supply Chain

Opportunity type

Resilience

Primary climate-related opportunity driver

Other

Type of financial impact

Increased reliability of supply chain and ability to operate under various conditions

Company-specific description

Together with energy, wood is our most expensive input. It therefore makes sense to optimise the pine and eucalyptus wood supply we grow and use in South Africa. To that end, our tree improvement programmes aim to increase the accuracy and efficiency of conventional tree breeding techniques, thereby enhancing our fibre base. In South Africa, where we own and lease 379,000 hectares of land, we have a high level of control over our fibre sources. We moderate our exposure to climate change-related risk by:

- Maintaining wide genetic variability in our planting material enables us to breed trees for a wide range of conditions allowing us to respond to climatic changes.
- Continually monitoring and reviewing forest best practices in the light of changing environmental factors, thus helping to mitigate any increased threat from drought.
- Measuring permanent sample plots annually (eucalypts) or bi-annually (pines) to determine the effect of drought and other climatic change impacts on annual growth as an input to long term planning.
- Engaging in research and collaboration with industry and tertiary institutions to develop biocontrol measures and breed genetically more resistant planting stock.
- Implementing extensive planting of more drought tolerant eucalypt hybrids.
- Fire risks are mitigated via an integrated Fire Risk Management System (FRMS) which categorises our risks and assigns a risk rating. We also calculate an estimated maximum loss (EML) per area. Fire management plans are drawn up with mitigation measures to minimise these risks and reduce EMLs as much as possible. These plans are monitored throughout the fire season using our FRMS system.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

13462968.75

Explanation of financial impact figure

The financial opportunity impact figure provided is a range from 0% to 10% which indicates the competitive advantage our resilient woodfibre base gives us.

Strategy to realize opportunity

Ongoing investment into climate-related tree improvement programmes.

Cost to realize opportunity

3700000

Comment

The figure given represents Sappi Forest' research budget.

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 sustainably 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 been 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, 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.

In development, we plan to complete it within the next 2 years

C3.1c

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

Our focus is on reducing externally purchased power to reduce costs as well our reliance on fossil fuels, thereby also decreasing emissions. We achieve this by:

* Operating combined heat and power (CHP) plants in many of our mills. These plants not only generate electricity but also heat, which is used at the paper machines to dry the paper. Such efficiencies mean our CHP units are twice as energy efficient as conventional power plants

* Using a high proportion of renewable energy as a fuel source, most of it self-generated in the form of black liquor — an approach which ultimately results in a reduction in greenhouse gas (GHG) emissions and has positive economic implications. Our use of renewable energy in 2018 was 46.8%, of which 71.5% was own black liquor. This not only help to reduce GHG emissions, but also separates our operations from the volatility of energy prices. We are committed to increased use of renewable energy, but we are constrained by own black liquor availability which is our main renewable fuel source.

* Improving the energy efficiency of our mills

* Continually working on pulp backward integration which brings green energy opportunities aligned with our strategy

* Having a global energy intensity target in place – to reduce energy intensity by 5% by 2020 compared with a 2014 baseline. In FY2018, compared with our 2014 baseline, there was an improvement of 1,24%.

We recently conducted an assessment to investigate possible climate change effects on our land holdings in South Africa. The most important finding from the preliminary work is that it provides a ranking of areas where the most severe climate changes can be expected. These results indicate that monthly changes and trends are as important as mean annual changes between periods. There is in general an increase in mean maximum temperatures over the late-winter (July to October) period. Winter minimum temperatures will not increase significantly on higher elevations, whilst winter minimum temperatures will increase on lower elevation areas. Thus, there might be only a small frost risk reduction on certain plantations. There is a high likelihood of an increased fire season and decreased growing period. The reduced rainfall and increased temperature range over the late winter to early spring period on the Highveld plantations will likely increase tree stress. For the first three districts in Mpumalanga with the highest climate change risk planting of Eucalyptus (E.) nitens had to be stopped due to pest and disease issues, possibly already related to climate change.

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. In terms of the recently promulgated carbon tax, our Z-factor has been approved, which means we get 60% base allowance; 5% because we have approved carbon budget, 5% benchmark / performance allowance and 10% because we are trade exposed = 80% allowance on the R120 / ton.

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 1 +2 (market-based)

% emissions in Scope

36.2

Targeted % reduction from base year

5

Metric

Metric tons CO2e per metric ton of product

Base year

2014

Start year

2015

Normalized base year emissions covered by target (metric tons CO2e)

0.654

Target year

2020

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

0

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 dry tons of saleable production. Saleable production includes pulp and paper. (units of CO2 eq/adt). Sappi SA and Sappi North America are not covered in the target.

% 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

20.22

KPI in target year

18.3

% achieved in reporting year

9.52

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 dry 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% by 2020. Purchased fossil energy relates to emissions in Scope 1 and Scope 2 categories.

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

22.66

KPI in target year

22.38

% achieved in reporting year

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 dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

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

14.9

KPI in target year

14.57

% achieved in reporting year

2.2

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. Total energy usage in GJ in Sappi Europe per metric ton of air dry 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

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 dry saleable production which includes pulp and paper. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

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

28.04

KPI in target year

27.78

% achieved in reporting year

1

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 dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

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

33.23

KPI in target year

31.69

% achieved in reporting year

4.62

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 South Africa per metric ton of air dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

Part of emissions target

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

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
Underway

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

Part of emissions target
No

Is this target part of an overarching initiative?
Remove 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
0.19

% 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 dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total landfilled waste by 10% by 2020. This target relates to Scope 1 emissions as owned landfill emissions are included in Scope 1 emissions.

Part of emissions target
No

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 initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	80	47242.13
To be implemented*	11	19112
Implementation commenced*		
Implemented*	16	135766
Not to be implemented		

C4.3b

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

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1959

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

400000

Investment required (unit currency – as specified in C0.4)

865000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

At Somerset Mill in Sappi North America (SNA), an upgrade to the system that shatters the recovery boiler smelt flow into smaller droplets. This upgrade improved safety and reduced the shattering steam usage by 9600 lb/hr which is equivalent to 1,959 mt CO2/per annum.

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

522

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

89203

Investment required (unit currency – as specified in C0.4)

92615

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

At Somerset Mill in SNA, an increase in the size of the mud precoat heat exchanger. This project saved 2,560 lb/hr of steam, which is equivalent to 522 mt CO2/per annum.

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

23355

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

956000

Investment required (unit currency – as specified in C0.4)

956000

Payback period

Please select

Estimated lifetime of the initiative

Ongoing

Comment

At Cloquet Mill in SNA, Scope 1 emissions reduced by 23,355 metric tons of CO2e due to operational efficiency projects and the implementation of capital projects. Capital

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

6198

Scope

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period

Please select

Estimated lifetime of the initiative

Ongoing

Comment

At Cloquet Mill in SNA, Scope 2 emissions reduced by 6,198 metric tons of CO2e due to operational efficiency projects and the implementation of capital projects. Capital - Metra recovery/recaust automation Capital - Intelligent sootblowing Capital - Prebleach filtrate HX control valve Operational – Fibreline sump controls

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

388.69

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period

Please select

Estimated lifetime of the initiative

Ongoing

Comment

At Westbrook Mill in SNA, three projects were implemented: two grade conversions to chemistries with no volatile organic compounds (VOCs) to incinerate; and reduced incinerator operating temperature by 25 deg F.

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

10000.2

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period

Please select

Estimated lifetime of the initiative

Ongoing

Comment

In Sappi SA, heat recovery and steam reduction project. Optimisation of steam will result in a reduction of coal consumption on the coal fired boilers. This is based on a steam to coal ratio of 7.

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

33374.6

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

Ongoing

Comment

In Sappi SA, reduced coal consumption and increased renewable energy sources.

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

37828

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

Ongoing

Comment

In Sappi SA, reduced waste to landfill.

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

0

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

56989

Investment required (unit currency – as specified in C0.4)

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Energy savings at the evaporation plant in Ehingen Mill.

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

3095

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

181810

Investment required (unit currency – as specified in C0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Gas reduction at CM9 in Gratkorn Mill

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

1016

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

179478

Investment required (unit currency – as specified in C0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Increasing efficiency of the combined heat and power plant in Lanaken Mill.

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

2284

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

173965

Investment required (unit currency – as specified in C0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Increased efficiency of Wanson boilers in Lanaken Mill

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Process optimisation)

Estimated annual CO2e savings (metric tonnes CO2e)

15142

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

210466

Investment required (unit currency – as specified in C0.4)**Payback period**

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Replacement of coal classifier at Stockstadt 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 America 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.
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 Sappi SSA's sustainability performance in terms of energy reduction (total and fossil) against a set of 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	In 2018, SSA reached financial close with the Department of Energy to build a renewable energy plant at Ngodwana Mill in Mpumalanga province. The project, whereby Sappi and consortium partners KC Africa and African Rainbow Energy and Power will establish a 25 MW biomass energy unit at the mill, falls under the South African government's Renewable Energy Independent Power Producer Programme (REIPPP).
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

Approximately one third of our owned and leased plantations (387,000 hectares in total) are set aside for biodiversity conservation. Our strategies for managing biodiversity include: • Using fertilizer once in each rotation * 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 six 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. Our tree improvement programmes aim to increase wood production and forest productivity. We enhance our fibre base through leading-edge tree improvement programmes which aim to produce low-cost wood with the required pulping characteristics and increase yield per hectare. We achieve this mainly through genetic selection of planting stock.

Primary climate change-related benefit

Increasing resilience to climate change (adaptation)

Estimated CO2e savings (metric tons CO2e)

Please explain

Not possible to quantify CO2 saving

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 sequester 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

98

Comment

All Sappi's products are based on woodfibre, a renewable natural resource grown in sustainably managed forests and plantations which sequester 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 41.8% energy self-sufficient and the group's renewable fuel energy usage currently stands at was 46.8%, of which 71.5% is own black liquor. In addition, in SA, all Sappi's owned and leased plantations are 100% FSC-certified, while globally 75.2% 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 11% 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 (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 r with higher emissions than self-produced power)

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

98

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

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 2014

Base year end

September 30 2015

Base year emissions (metric tons CO2e)

4112641.22

Comment

The base year is based on Sappi's 2015 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 2014

Base year end

September 30 2015

Base year emissions (metric tons CO2e)

1634760.92

Comment

The base year is based on Sappi's 2015 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?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

4297428.83

Start date

October 1 2017

End date

September 30 2018

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.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

Start date

End date

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

Start date

End date

Comment

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

Start date

End date

Comment

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?

Reporting year

Scope 2, location-based

<Not Applicable>

Scope 2, market-based (if applicable)

1430976

Start date

October 1 2017

End date

September 30 2018

Comment

Market based total Scope 2 figure reported. (Eight out of fifteen operations report a market based Scope 2 figure)

Past year 1

Scope 2, location-based

<Not Applicable>

Scope 2, market-based (if applicable)

Start date

End date

Comment

Past year 2

Scope 2, location-based

<Not Applicable>

Scope 2, market-based (if applicable)

Start date

End date

Comment

Past year 3

Scope 2, location-based

<Not Applicable>

Scope 2, market-based (if applicable)

Start date

End date

Comment

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

Offices, warehouses, research facilities, nurseries, outside mill premises.

Relevance of Scope 1 emissions from this source

No emissions excluded

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Please select

Explain why this source is excluded

Sappi includes emissions from production facilities. The excluded Scope 2 emissions are not from production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) has been evaluated for 2018 and relative to Sappi's production facilities these emissions are not relevant.

(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

1526241.05

Emissions calculation methodology

This category includes all upstream emissions from the production of products purchased in the reporting year. Sappi uses the hybrid method which is a combination of supplier-specific activity data (where available) and secondary data to fill the gaps. Purchased products are collected on a mass base from our procurement department, multiplying by the relevant secondary (e.g., industry average) emission factors, or primary emission factor where available.

Percentage of emissions calculated using data obtained from suppliers or value chain partners**Explanation****Capital goods****Evaluation status**

Relevant, calculated

Metric tonnes CO₂e**Emissions calculation methodology**

This category includes all upstream emissions from the production of capital goods purchased by Sappi in the reporting year. Capital goods are final products that have an extended life and are used by Sappi to manufacture product. This category is relevant for Sappi if a major project is conducted during the reporting year. During normal operating years, this category is not material for Sappi. Scope 3 GHG emissions have been determined for an expansion project at Saiccor mill in SSA where capital goods were purchased during Sappi financial year 2018. DEFRA 2018 conversion factors were used to convert from capital goods mass to GHG emissions.

Percentage of emissions calculated using data obtained from suppliers or value chain partners**Explanation****Fuel-and-energy-related activities (not included in Scope 1 or 2)****Evaluation status**

Relevant, calculated

Metric tonnes CO₂e

716079.4

Emissions calculation methodology

This category includes emissions related to the production of fuels and energy purchased and consumed by Sappi in the reporting year that are not included in scope 1 or scope 2. Sappi includes all purchased fuels (renewable and non-renewable), as well as upstream emissions for purchased electricity including transmission and distribution losses. DEFRA emission factors are used for conversion.

Percentage of emissions calculated using data obtained from suppliers or value chain partners**Explanation****Upstream transportation and distribution****Evaluation status**

Relevant, calculated

Metric tonnes CO₂e**Emissions calculation methodology**

This category includes transportation and distribution of products purchased in the reporting year, between a company's tier 1 suppliers and its own operations in vehicles not owned or operated by the reporting company. The distances between the supplier/s and Sappi mill/s are determined for road, rail and marine transport. DEFRA emission factors are used to convert from distances by mode of transport to GHG emissions. Outbound transportation and distribution services that are paid for by Sappi are included in category 4 (Upstream transportation and distribution).

Percentage of emissions calculated using data obtained from suppliers or value chain partners**Explanation****Waste generated in operations****Evaluation status**

Relevant, calculated

Metric tonnes CO₂e

25037.87

Emissions calculation methodology

Sappi uses the IPCC Waste Model to determine Scope 3 landfill emissions. Scope 3 landfill emissions are applicable to all mills except Tugela, Ngodwana, Cloquet and Somerset as these mills have owned landfills. The emissions from these owned landfills are accounted for under Scope 1.

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

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

25687.41

Emissions calculation methodology

This category includes emissions from the transportation of Sappi employees for business related activities in vehicles owned or operated by third parties, distances and mode of transport.

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

Explanation

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

11497.64

Emissions calculation methodology

Sappi includes emissions for the transportation of employees (based on numbers from the HR department) between their homes and their worksites. The average data method was used based on average national data on commuting patterns. To convert from distances to GHG emissions, DEFRA emission factors for the different modes of transport were used.

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

Explanation

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not considered as a relevant category for Sappi in terms of emissions.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

According to the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, the outbound transportation and distribution services that are paid for by the reporting company should be included in Category 4 (Upstream transportation and distribution) because the reporting company purchases a service. The assumption is made that Sappi pays for all outbound transportation, and therefore these emissions are included in Category 4: "Upstream transportation and distribution" category.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not considered as a relevant category for Sappi in terms of emissions.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not relevant. Our products do not generate emissions during usage.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not considered as a relevant category for Sappi in terms of emissions

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not considered as a relevant category for Sappi in terms of emissions.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not applicable.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

Not applicable. No investments with emissions not already included in Scopes 1 and 2.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

No other upstream emissions to be considered.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Explanation

No other downstream emissions to be considered.

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

(C-AC6.6/C-FB6.6/C-PF6.6) Can you break down your Scope 3 emissions by relevant business activity area?

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?

Please select

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.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

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 CO ₂ e)	GWP Reference
CO ₂	3821676.26	IPCC Fifth Assessment Report (AR5 – 100 year)
CH ₄	421387.06	Other, please specify (IPCC Fifth Assessment Report (AR5 - 100 year))
N ₂ O	54365.52	IPCC Fifth Assessment Report (AR5 – 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 CO ₂ e)
Africa	2363144.84
EU15	1482600.84
United States of America	451683.15

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 CO ₂ e)
Sappi Southern Africa	2363145
Sappi Europe	1482601
Sappi North America	451683

C7.3b

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

Facility	Scope 1 emissions (metric tons CO ₂ e)	Latitude	Longitude
Ngodwana Mill (SA)	1248057.43	-25.57803	30.66549
Saiccor Mill (SA)	574473.05	-30.18078	30.77091
Stanger Mill (SA)	183617.82	-29.36743	31.28908
Tugela Mill (SA)	354319.69	-29.15216	31.40536
Alfeld Mill (Germany)	119130.13	51.98592	9.82076
Ehingen Mill (Germany)	44204.99	48.26766	9.72712
Gratkorn Mill (Austria)	474925.49	47.13333	15.33333
Kirkniemi Mill (Finland)	257440.12	60.18815	23.94212
Lanaken Mill (Belgium)	47394.64	50.877	5.6427
Maastricht Mill (Netherlands)	186692.26	50.85857	5.69457
Stockstadt Mill (Germany)	352813.22	49.80421	8.46762
Cloquet Mill (Minnesota USA)	159488.34	46.72288	-92.4384
Somerset Mill (Maine USA)	228363.43	44.70652	-69.63782
Westbrook Mill (Maine USA)	63831.37	43.68397	-70.35211
Lomati Mill SA	2676.86	-25.7726	31.0402

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Stationary Combustion (Fossil Fuel)	3986064.87
Stationary Combustion (Renewable Fuel)	62082.41
Process activities - make-up Chemicals	16273.13
Mobile combustion	18092.33
Waste management - Owned landfill emissions	214916.1

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?

No

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

(C-AC7.4c/C-FB7.4c/C-PF7.4c) Why do you not include greenhouse gas emissions pertaining your business activity(ies) in your direct operations as part of your global gross Scope 1 figure? Describe any plans to do so in the future.

	Primary reason	Please explain
Row 1	Other, please specify (Methodology not finalised)	To maintain a National Greenhouse Gas Inventory in order to fulfil reporting obligations under the United Nations Framework Convention on Climate Change the Department of Environmental Affairs has introduced mandatory reporting. Sappi SA annually calculates GHG emissions for Sappi Forests land holdings, starting in 2016 and a predictive analysis was done until 2023. The stock-difference method (carbon stock change as an annual average difference between estimates at two points in time) was used to calculate 2018 GHG emissions. The annual carbon stock change was calculated using Equation 2.5 (IPCC 2006, Volume 4, Chapter 2, P2.9) by subtracting the total carbon stocks in 2017 from the stocks in 2018. In total, Sappi Forests can report - 698 000 tons CO2 emissions (i.e. sequestration) for the 2018 calendar year. These emissions have not been included in the total externally assured Scope 1 numbers as the method to calculate carbon sequestration by forests have not been finalised by local government in South Africa.

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	650390.67	650390.67	8872697.93	621976.12
EU15	698107.05	691420.85	24207413.68	933435.07
United States of America	82478.55	131350.16	4071398.26	135032.32

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	650390.67	650390.67
Sappi Europe	698107.05	691420.85
Sappi North America	82478.55	131350.16

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)	35672	35672
Saiccor Mill (SA)	290617	290617
Stanger Mill (SA)	126403	126403
Tugela Mill (SA)	187230	187230
Alfeld Mill (Germany)	119329	181600
Ehingen Mill (Germany)	97647	137245
Gratkorn Mill (Austria)	27099	0
Kirkniemi Mill (Finland)	217018	217018
Lanaken Mill (Belgium)	167697	58727
Maastricht Mill (Netherlands)	594	385
Stockstadt Mill (Germany)	68723	96446
Cloquet Mill (Minnesota USA)	35727	35727
Somerset Mill (Maine, USA)	46715	95537
Westbrook Mill (Maine, USA)	36	86
Lomati Mill (South Africa)	10469	10469

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	1430976	1430976

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	86256.23	Increased	1.49	A 1% decrease in percentage renewable energy from 2017 to 2018 resulted in a slight increase in % fossil energy consumption. Increase in fossil energy consumption results in an increase in GHG emissions. The change in emissions brought about by decrease in renewable energy consumption over the total Scope 1 + Scope 2 emissions: $(86256.23 / 5770590.56) * 100 = 1.49\%$
Other emissions reduction activities	35412.63	Decreased	0.61	Absolute total energy decreased by 1.44%. Specific energy consumption per ton of saleable production decreased by 0.8%, resulting from a more energy efficient production process, due to implemented reduction activities.
Divestment		<Not Applicable >		
Acquisitions		<Not Applicable >		
Mergers		<Not Applicable >		
Change in output	35929.23	Decreased	0.62	A decrease in saleable production resulted in a decrease in emissions (metric tons CO2e). The change in emissions brought about by decrease in production over the total Scope 1 + Scope 2 emissions: $(35929.23 / 5770590.56) * 100 = 0.62\%$
Change in methodology		<Not Applicable >		
Change in boundary		<Not Applicable >		
Change in physical operating conditions		<Not Applicable >		
Unidentified		<Not Applicable >		
Other	35412.63	Decreased	0.61	Increase in power self-sufficiency increase Scope 1 emissions and decrease Scope 2 emissions. As own produced power is more efficient than power produced by suppliers, the total GHG emissions (Scope 1 + Scope 2) decrease.

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)	67039849	13857414.04	80897263
Consumption of purchased or acquired electricity	<Not Applicable>	10066651.55	26942044.41	37008695.95
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>		<Not Applicable>	
Total energy consumption	<Not Applicable>	77189869.75	40799458.45	117989328.2

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 heat	Yes
Consumption of fuel for the generation of steam	Please select
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)

Bitumen

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

186634

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

6806

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

472290

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

8279897

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4459315

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Tires

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

255523

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

68002

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Other, please specify (Sulphur)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

125774

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Kerosene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1740

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Wood Waste

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4591888

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Black Liquor

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

13875842

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

Fuels (excluding feedstocks)

Biogas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

80875

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

Comment

The total fuel input is accounted for but cannot be accurately split into different energy applications.

C8.2d

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

Biogas

Emission factor

54.6545

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Bitumen

Emission factor
80.943

Unit
kg CO₂e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Black Liquor

Emission factor
95.914

Unit
kg CO₂e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Coal

Emission factor
995.2775

Unit
kg CO₂e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Diesel

Emission factor
74.343

Unit
lb CO₂e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Fuel Oil Number 2

Emission factor
77.643

Unit
kg CO₂e per GJ

Emission factor source
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Fuel Oil Number 6

Emission factor

77.643

Unit

kg CO₂e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Kerosene

Emission factor

72.143

Unit

kg CO₂e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Natural Gas

Emission factor

56.1548

Unit

kg CO₂e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

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

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

Wood Waste

Emission factor

113.9

Unit

kg CO₂e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Comment

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP

Other

Emission factor

0

Unit

kg CO₂e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3.

Comment

Sulphur 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary

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	4083977.44	3487411.49	1909587.87	1630645.31
Heat	770877.19	770877.19	0	0
Steam	23581391.18	23581391.18	11026196.7	11026196.7
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

Hydropower

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

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

87415

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

0

Comment

100% hydropower 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

0.06

Metric numerator

Tons

Metric denominator (intensity metric only)

Air dry ton saleable production

% change from previous year

15.7

Direction of change

Decreased

Please explain

Tons of landfilled solid waste per air dry ton of saleable production are tracked. Landfilled solid waste relates to CO2e emissions. Saleable production includes paper, pulp and dissolving wood pulp. Landfilled solid waste methane emissions are included in total Scope 1 emissions, converted to CO2e equivalent.

Description

Waste

Metric value

422376

Metric numerator

Tons

Metric denominator (intensity metric only)

Air dried ton saleable production

% change from previous year

16.23

Direction of change

Decreased

Please explain

Absolute tons of landfilled solid waste are tracked. Landfilled solid waste relates to CO2e emissions. Methane emissions from landfilled solid waste are included in Scope 1 total emissions.

Description

Waste

Metric value

9.8

Metric numerator

kg

Metric denominator (intensity metric only)

Air dry ton saleable production

% change from previous year

1.88

Direction of change

Decreased

Please explain

Chemical oxygen demand (COD) in wastewater results in CO2 emissions. COD in wastewater effluent is monitored 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.

Description

Energy usage

Metric value

22.38

Metric numerator

GJ

Metric denominator (intensity metric only)

Air dry ton saleable production

% change from previous year

0.83

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 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

KPMG final signed opinion December 2018.pdf

Page/ section reference

1-4

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

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

Limited assurance

Attach the statement

KPMG final signed opinion December 2018.pdf

Page/ section reference

1-4

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 1

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

Page/ section reference

We do hold the EU ETS certificates, but do not share these publicly.

Relevant standard

European Union Emissions Trading System (EU ETS)

Proportion of reported emissions verified (%)

35

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 (Year on year change in energy usage)	ISO50001	Sappi SA region was audited for ISO50001 certification purposes. Certification received in 2017. The European operations are also ISO50001 certified.

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
34.5

Period start date
October 1 2018

Period end date
December 31 2018

Allowances allocated
1050605

Allowances purchased
613062

Verified emissions in metric tons CO2e
1663667

Details of ownership
Facilities we own and operate

Comment

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 2018

Period end date
December 31 2018

% of emissions covered by tax
6.02

Total cost of tax paid
16012179.15

Comment
Sappi will be refunded US\$13,3 million by 2019.

C11.1d

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

In specific terms: Reduce emissions and cover the shortage by external purchase of European Union Allowances.

In general terms: Our ongoing energy efficiency improvements continue to reduce energy intensity. We have increased our use of renewable energy— an approach which ultimately results in a reduction in greenhouse gas (GHG) emissions and has positive economic implications. Our use of renewable energy in 2018 was 46.8%, of which 71.5% was own black liquor. We are committed to increased use of renewable energy, but we are constrained by own black liquor availability which is our main renewable fuel source. Over time, we have slowly but steadily reduced our use of purchased energy (electricity and fossil fuel) and also reduced specific energy intensity. Globally, over five years, energy self-sufficiency has increased by 5.6%.

We have a global target in place to reduce energy intensity from a 2014 base of 22.66GJ air dry tons by 5% by 2020. In 2018 we achieved a reduction of 1.24% compared with the 2014 baseline. We are currently working on introducing science-based targets across the group. We are fully compliant with the EU ETS rules and annual emissions are verified according to national legislation. Globally, our Scope 1 and 2 emissions have been externally verified (limited assurance). We have established an inter-regional group to examine and assess new disruptive technologies to reduce waste, water, energy and emissions.

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

Yes, other partners in the value chain

C12.1a

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

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

% of suppliers by number

0.28

% total procurement spend (direct and indirect)

26

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Our assessment of our carbon footprint shows a high proportion of our carbon emissions lie in our supply chain. We are establishing a compliance verification programme for our suppliers across each region. It will build on the process we already have with our pulp suppliers to collect data and ensure responsible practices. To date, we only have information for Sappi Europe (SEU).

Impact of engagement, including measures of success

It is still too early to establish this, we hope to be able to report next year.

Comment

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

1.53

% total procurement spend (direct and indirect)

38

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Impact of engagement, including measures of success

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

80

% Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement

Customers generally approach us for information about the fibre sourcing and production processes behind our brands, including carbon footprint. In response to these requests, in Europe and South Africa, we publish Paper Profiles and information sheets for our papers. In North America, we have developed our own eQ GHG emissions calculator that quantifies the amount of emissions associated with a customer order and how those emissions compare against the industry average. At the request of our customers, we participate in EcoVadis and Sedex.

Impact of engagement, including measures of success

We believe we are successful in raising the awareness of the role of sustainably managed forests/plantations and our renewable products in achieving a low-carbon society, and in working with our customers and other stakeholders to substitute fossil-based and other non-renewable materials. In all three regions, we were awarded a Gold Recognition Level in sustainability performance by independent rating agency EcoVadis, placing us in the top 5% of 30,000 companies

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

In 2018, we announced a founding partnership with The Prince of Wales Global Sustainability Fellowship Programme at the Cambridge Institute for Sustainability Leadership (CISL). Together with other partners, we are funding research on artificial intelligence and bringing carbon emissions to net zero in the paper and pulp industry. The three to five-year fellowships of which there are currently eight, will involve academics from around the world in identifying breakthrough solutions to meet the United Nations Sustainable Development Goals (SDGs). The Sappi-supported fellowship will focus on SDG9 – Reshaping the future of industry. It aims to build on Sappi’s current engagement with the CISL by investigating how trends of innovation and sustainability will come together to reshape the future of industry—looking at the paper and pulp industry as an initial example and examining drivers including the rise of artificial intelligence and the need to bring carbon emissions to net zero. The CISL continues to support our work with the European industry in issues related to the Green Growth Platform. These include the development of a new low carbon pulp technology (deep eutectic solvents), exploring financing options to support industry’s transformation and investigating block chain technology for timber certification. The latter would support risk assessment and Chain of Custody woodfibre audits from forest/plantation to retail shelf. Sappi is representing the paper industry in this project.

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

The Confederation of European Paper Industries (CEPI), of which Sappi Europe is a member, participates in actions supporting and promoting the development of sustainable forestry management tools, including forest certification—all over the world, particularly in less developed countries. 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 is 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 known as Khulisa Ulwazi (‘Growing Knowledge’) and developed training material in conjunction with the Institute of Natural Resources. Training is offered to all value chain participants including small growers, land reform beneficiaries and small-scale contractors and covers all aspects of forestry, including the core operational skills as well as safety, legal compliance and running a business.

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?

Yes

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?

Direct engagement with policy makers
Trade associations
Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
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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 influenced, or are you attempting to influence their 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 influenced, or are you attempting to influence their 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 influenced, or are you attempting to influence their position?

By supporting PAMSA. The Sappi SA 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 influenced, or are you attempting to influence their 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 influenced, or are you attempting to influence their 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

In mainstream reports

Status

Complete

Attach the document

sappi 2018 annual report final.pdf

Page/Section reference

Page 40, pages 54, 55-57

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

2018-Sappi-Group-Sustainability-Report.pdf

Page/Section reference

Pages 6 - 7, page 11, page 13, page 94, page 95, pages 98 - 99, pages 101 - 105

Content elements

Please select

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

2018-Sappi-North-America-Sustainability-Report.pdf

Page/Section reference

Page 16, 48,52,54

Content elements

Strategy

Risks & opportunities

Emissions figures

Emission targets

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

Sappi-FAQs-Climate-change (2).pdf

Page/Section reference

Detailed throughout

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

Other, please specify (Policy)

Status

Complete

Attach the document

Sappi-Group-Climate-Change-Policy (2).pdf

Page/Section reference

Content elements

Governance
Strategy

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

sappi 2017 SEU Sustainability Report.pdf

Page/Section reference

Pages 30,32,33,34,38

Content elements

Risks & opportunities
Emissions figures
Emission targets

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

sappi 2018 ssa sdr final.pdf

Page/Section reference

Pages 14 - 15, 28 - 29, 60 -63, 66-67

Content elements

Please select

Comment

Publication

Please select

Status

<Not Applicable>

Attach the document

<Not Applicable>

Page/Section reference

<Not Applicable>

Content elements

<Not Applicable>

Comment

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

MP1

Overall effect

Mixed

Which of the following has been impacted?

Biodiversity

Soil

Water

Yield

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

MP1

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 and Europe, 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	Head of 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 mill in Europe of which six have integrated pulp production lines. Sappi North America (SNA) operates one paper mill, one speciality mill and one paper and dissolving wood pulp mill. In FY2018 SEU produced 51% of group sales, while SNA produced 25%.

SC0.1

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

	Annual Revenue
Row 1	5806000000

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

Allocation level

Facility

Allocation level detail

Emissions from the fuel combustion are allocated equally per ton product at each mill.

Emissions in metric tonnes of CO₂e

1681

Uncertainty (±%)

Major sources of emissions

Combustion of fuels at our own power plants.

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

Requesting member

L'Oréal

Scope of emissions

Scope 3

Allocation level

Facility

Allocation level detail

Emissions from purchased power are allocated equally per ton product.

Emissions in metric tonnes of CO₂e

2648

Uncertainty (±%)

Major sources of emissions

Purchased power.

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
Invoices from the power supplier, consumption meters at the mills.

Requesting member

L'Oréal

Scope of emissions

Scope 3

Allocation level

Commodity

Allocation level detail

Allocation is done on a product group level. Pulp mix, filler and binder content are taken into account, but other (smaller) raw materials are allocated evenly between all products at the mill.

Emissions in metric tonnes of CO2e

979

Uncertainty (±%)

40

Major sources of emissions

Pulp production, fuel production. Industry average CO2 emission factors are used for most raw materials.

Verified

No

Allocation method

Allocation based on the chemical content of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
In carbon footprinting, we follow the guidelines by the CEPI/Eurograph manual.

Requesting member

Philip Morris International

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Emissions from combusted fuels are allocated evenly over all products manufactured at the mills.

Emissions in metric tonnes of CO2e

6526

Uncertainty (±%)

Major sources of emissions

Combustion of fuels at our own managed power plants.

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

Requesting member

Philip Morris International

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Purchased power is allocated evenly to all products manufactured at the mill.

Emissions in metric tonnes of CO2e

10323

Uncertainty (±%)

Major sources of emissions

Emissions from purchased power

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
Invoices from the power supplier, consumption meters at the mills.

Requesting member

Philip Morris International

Scope of emissions

Scope 3

Allocation level

Commodity

Allocation level detail

Allocation is done on a product group level. Pulp mix, filler and binder content are taken into account, but other (smaller) raw materials are allocated evenly between all products at the mill.

Emissions in metric tonnes of CO2e

3939

Uncertainty (±%)

40

Major sources of emissions

Pulp production, fuel production. Industry average CO2 emission factors are used for most raw materials.

Verified

No

Allocation method

Allocation based on the chemical content of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

In carbon footprinting, we follow the guidelines by the CEPI/Eurograph manual.

Requesting member

Bank of America

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Emissions from combusted fuels are allocated evenly over all products manufactured at the mills.

Emissions in metric tonnes of CO2e

695

Uncertainty (±%)**Major sources of emissions**

Combustion of fuels at our own operated power plant

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

Requesting member

Bank of America

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Purchased power emissions are allocated equally to all products manufactured at the mill

Emissions in metric tonnes of CO2e

200

Uncertainty (±%)**Major sources of emissions**

Purchased power/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

Invoices from the power supplier, consumption meters at the mills.

Requesting member

Bank of America

Scope of emissions

Scope 3

Allocation level

Facility

Allocation level detail

Allocated equally to all products at the mill

Emissions in metric tonnes of CO2e

1134

Uncertainty (±%)

50

Major sources of emissions

Emissions from manufacturing the raw materials, emissions from manufacturing the fuels.

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

This is our first year to report on Scope 3. We have relied on industry average CO2 factors for raw materials.

SC1.2

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

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	It is often difficult and time consuming to obtain data from suppliers in order to calculate 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 working to improve our use of the most up-to-date CO2-factors for our raw materials and constantly improving the accuracy of allocations of raw materials to products. We will first focus on our customers that are most engaged in GHG accounting.

SC2.1

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

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 2019-2020 CDP Action Exchange initiative?
No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2018-2019 Action Exchange initiative?
No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?
No, I am not providing data

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