

Welcome to your CDP Climate Change Questionnaire 2020

C0. Introduction

C0.1

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

A global leader in dissolving pulp and paper-based solutions, Sappi Limited is headquartered in Johannesburg, South Africa; has over 12,000 employees; manufacturing facilities on three continents, in ten countries, ten operations in Europe, four operations in North America and five operations in South Africa and customers in over 150 countries worldwide.

Sappi drives product innovation and the development of new uses for a renewable resource, woodfibre, as well as for the biomass and other residues from its production processes. One such area is in the field of biomaterials (cellulose composites, nanocellulose and lignins), biochemicals including hemi-cellulose sugars and bio-energy forest products materials which Sappi believes will play a key role in its future range of products, both as commercial products and for applications within Sappi. Assets total US\$5.6 billion and in FY2019, sales amounted to US\$5,746 million. Sappi has a primary listing on the JSE Limited and a Level 1 ADR programme that trades in the over-the-counter market in the United States. At the end of FY2019 Sappi had 6,330 public shareholders.

Sappi creates value in the following manner:

- Dissolving pulp: Sappi's dissolving pulp 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.
- Specialities and packaging papers: Quality specialities and packaging papers are used in the manufacture of products such 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.
- Printing and writing papers: 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.
- 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 at the core of our core business model.
- Forests: Sappi's 100% Forest Stewardship Council® (FSC®)-certified plantations in South Africa give the company a high-quality woodfibre base. We own and lease

approximately 390,000 hectares of which 135,000 hectares are maintained by Sappi Forests to conserve the natural habitat and biodiversity found there. All this land is FSC-certified.

In FY2019, production included:

- 5.7 million tons of paper
- 2.2 million tons of paper pulp
- 1.4 million tons of dissolving pulp.

In FY2019, in terms of production of group sales, Europe accounted for 50%, North America for 25% and South Africa for 25%.

At Sappi, we take a holistic view of value creation. Value for Sappi is not only about delivering returns to our shareholders, it is about maximising the value of every resource along our value chain to ensure those returns are sustainable. We recognise that our sphere of influence and impact extends beyond our mill gates. Through this lifecycle approach that harnesses the power of the circular economy, we strive to minimise our negative impacts and increase our positive impacts on People and the Planet. We then measure our value creation in terms of our defined targets.

These goals include enhancing energy self-sufficiency, improving energy-use efficiency and decreasing our reliance on fossil fuels, thereby reducing our carbon footprint. We use significant amounts of energy in our manufacturing process. However, more than half of this is renewable: Our use of renewable (and nuclear) energy in FY2019 as a percentage of total energy was 52.93%, of which 66.35% was own black liquor. We operate combined heat and power (CHP) plants in many of our mills. These plants generate electricity as well as 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. We have co-generation power plants at 14 of our mills.

We generate emissions primarily through manufacturing and the transport of our products. Our high use of energy is balanced by the carbon sequestration of the forests and plantations from which we source woodfibre and by high level of renewable energy - our use of renewable (and nuclear) energy in 2019 as a percentage of total energy was 52.93%, of which 66.35% was own black liquor.

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
Reporting year	October 1, 2018	September 30, 2019	No

C0.3

(C0.3) Select the countries/areas 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 chosen approach for consolidating your GHG 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

Responsibly sourced, renewable woodfibre is a key input. Some revenue is derived from energy sales, but this energy derives from the pulping of woodfibre, meaning that our business is entirely dependent on timber. 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-level committee	The Sappi board of directors, supported by the Audit and Risk Committee and the Social, Ethics, Transformation and Sustainability (SETS) Committee have responsibility for climate-related issues within the context of Sappi’s environmental management approach of producing more with less — an approach that has obvious economic benefits and which involves reducing our use of fossil energy and the associated greenhouse gas emissions across the full life cycle of our products. It also necessitates using less water and improving effluent quality, mitigating our impact on biodiversity and promoting sustainable forestry through internationally accredited, independent forest certification and environmental management systems. These include ISO 14001, ISO 9001, ISO 50001 (SEU and SSA) and EMAS (SEU). Enhancing energy self-sufficiency, improving energy-use efficiency and decreasing our reliance on fossil fuels, thereby reducing our carbon

	<p>footprint, are key strategic goals.</p> <p>The chairman of the SETS committee has served as the President of the International Union for the Conservation of Nature; Chairman of the UN Commission for Sustainable Development; Chairman of WWF(SA) and currently serves on the steering committee of the Tokyo-based Innovation for a Cool Earth Forum.</p>
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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 Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	<p>The Social, Ethics, Transformation and Sustainability (SETS) committee has an independent role with accountability to the Board and is comprised of a majority of independent non-executive members, whose duties are delegated to them by the board of directors in compliance with a board-approved terms of reference. The role of the SETS Committee is to assist the Board with the oversight of sustainability issues within the company and to provide guidance to management’s work in respect of its duties. Given that Sappi’s business is almost entirely dependent on woodfibre, a natural resource which is impacted by climate change, climate change-related issues are scheduled at all meetings. The SETS committee regularly reviews our energy usage in our manufacturing process and our performance global target to reduce energy intensity by 5% by 2020 compared with a 2014 baseline.</p> <p>The Committee receives regular updates on progress towards energy and emissions goals. Such issues also form part of the function of the Regional Sustainability Councils (RSC) in North America, Europe and South Africa. These RSCs feed into the Global Sustainability Council which in turn reports to the SETS Committee.</p> <p>The SETS Committee convened three times in 2019. The reporting structure is as follows: Regional Sustainable Councils (RSCs), in Europe, North</p>

		<p>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 and ultimately, to the Sappi Limited board.</p> <p>In FY2019, amongst other things, the SETS Committee reviewed the effectiveness of the Code of Ethics and ethics programme as well as the recommendations of the working group established to prioritise the SDGs most relevant to our business and develop action plans and 2025 target. At global level, the group has prioritised the following SDGs: SDG6: Clean water and sanitation; SDG7: Affordable and Clean Energy; SDG8: Decent work and economic growth; SDG12: Responsible consumption and production; SDG 13: Climate action; SDG15: Life on land and SDG17: Partnerships for the goals. Sappi SA has an additional priority SDGs: SDG1: No poverty and SDG4; Quality education.</p>
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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	Half-yearly

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, sits on the Social, Ethics, Transformation and Sustainability (SETS) committee and is an executive member of Sappi Limited. 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. This individual is responsible for overseeing:

- Research and development, including 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 and energy as well as more efficient water usage—particularly important in South Africa, where climate change is putting pressure on freshwater resources
- Capital 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.
- The work of the 1.5 Future Energy Technologies & Decarbonisation cluster, tasked with exploring and developing novel technologies for fuel shift & deep decarbonisation in terms of Scope 1 & 2 emissions, with a particular emphasis on energy; pulping; papermaking and bleaching.
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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. In each region, climate change related issues are monitored by the Regional Sustainability Councils (RSCs), managed by the regional Chief Executive Officers and fed through to the Group Sustainable Development Council (GSDC) which is chaired by the Group Head: Investor Relations and Sustainability 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 chaired by the Group Head: Investor Relations and Sustainability; with direction given by the SETS Committee and overall responsibility allocated by the Sappi Limited Board.

In addition, the Global Risk Manager, who reports to the Chief Financial Officer 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 various clusters meet on average every three months to monitor and action specific business needs which may include subjects related to climate change initiatives.

The process described above brings together manufacturing and technical expertise, current and future trends and developments, current and potential risks to give an overarching monitoring process for climate-related issues.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Sustainability targets, including climate-related issues, form part of the overall business plan for Sappi LTD and globally. The outcomes of the Management Incentive Scheme in relation to all the sustainability targets are contained in the performance objectives of each mill and the personal objectives of

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).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target	Sustainability targets, including climate-related issues, form part of the overall business plan for Sappi LTD and globally. The outcomes of the Management Incentive Scheme in relation to all the sustainability targets are contained in the performance objectives of each mill and the personal objectives of all senior management. The personal objectives of the Group Exco are disclosed in the Annual Remuneration report.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	1	2	In line with immediate risk and opportunities
Medium-term	3	5	In line with management accounting's five-year financial forecast plan and with our Thrive25 strategy, launched in 2020

Long-term	5	30	This timeline is consistent with SBTi and takes into account the nature of our mill operations and capital investments for long life assets; Sappi Forests' research planning horizons in response to climate change, as well as the EU's plans for zero carbon by 2050.
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C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

EBITDA (earnings before interest, taxes, depreciation, and amortization) is considered a key indicator of the underlying profit performance of the group, reflecting both revenues and costs and aligning closely with our strategic goals of achieving cost advantages and growth. We define substantive strategic or financial impacts as those that in aggregate total 20-25% of EBITDA, which, in FY2019, was US\$687 million. This definition applies to risks both within our direct operations and within our supply chain.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Sappi has a well-established risk management process within a formal governance structure. For climate-related risks and opportunities we have leveraged this process and have adopted the framework developed by the Task Force on Climate Related Financial Disclosure. The Sappi board is responsible for risk management. In the case of climate, two Board committees, the Social, Ethics, Transformation and Sustainability (SETS) Committee and the Audit and Risk Committee, share responsibilities associated with climate related risks. These committees are responsible for overseeing Sappi's

combined assurance framework, which also aims to optimise assurance coverage obtained from management, internal assurance providers and external assurance providers (globally: ISO 14 001, 9 0001 and forest certification), Europe and South Africa: ISO 50 0001, Europe: EMAS, on the risk areas affecting the group, including climate change.

Currently our process for assessing climate risk it is prioritized around key risks (physical and transitional) with specific emphasis on our direct operations in South Africa, specifically at our plantations which have been impacted by climate change and mills (particularly those where water scarcity has been an immediate issue such as at our Saiccor Mill) Our operations in South Africa have also been subject to transitional risk in the form of carbon tax, introduced in 2019. Our process for assessing this risk has been to use the Nationally Determined Contribution and to manage it by working through our national industry body to liaise with government departments to develop a carbon sequestration formula for plantation forestry.

We are formalising a standardised approach using our risk register process modified following the TCFD framework. Subject matter experts in risk management from within the organisation are working with sustainability team members to develop and refine this approach.

This risk approach is supplemented by ongoing review of industry dynamics, particularly risks and opportunities related to single use plastics and the transition to a low-carbon economy. In addition, in FY2019, we undertook work in line with the global initiatives, Task Force on Climate-related Financial Disclosures (TCFD) and the Science Based Targets initiative (SBTi) to better understand and quantify the risks and opportunities of climate change and what will be required to lower our long-term emissions profile.

In terms of physical risks, in all three regions where Sappi operates, climate change could alter the frequency and intensity of forest disturbances such as insect outbreaks, invasive species, wildfires and storms. These disturbances could reduce forest productivity, change the distribution of tree species and increase the risk that the wood supply necessary for our operations may be negatively affected. However, given Sappi Europe's general risk mitigation strategy of sourcing pulp and woodfibre from a variety of sources and regions, we do not anticipate any material impact on our raw material supply from climate change in the short to medium term (five to ten years). In Sappi North America, our operations do not currently face material risks associated with climate change.

In Sappi Southern Africa, where our operations have already been impacted by climate change, we invest significantly in preventing fire, pests and diseases, as well as site species matching and the development of hybrids to tolerate drought, frost and other weather events.

Sappi's regional sustainability and risk managers monitor current and developing transition risks (including reputational and market risks) in each region. We are managing these risks by accounting for carbon reduction in our capital projects. In

addition, we have established decarbonisation plans for all mills in all regions and have committed to science-based targets in line with the Science-Based Targets initiative.

The fact that our business is based on woodfibre, a renewable natural resource represents a significant opportunity in view of anti-plastic sentiment and consumers who are becoming increasingly environmentally aware. We have leveraged this opportunity by expanding capacity in packaging and specialities and through product offerings which can replace products based on non-renewable fossil fuels.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Sappi is exposed to a number of laws and regulations across a wide range of jurisdictions. A legal compliance programme designed to increase awareness of, and compliance with, applicable legislation is in place. The Group Compliance Officer reports twice per annum to the Group Audit and Risk Committee. Our aim is to minimise our impact on the environment. The principles of ISO 14000, FSC™, SFI®, PEFC™ and other recognised programmes are well entrenched across the group. We have also made significant investments in operational and maintenance activities to reduce air emissions, waste water discharges and waste generation. We closely monitor the potential for changes in pollution control laws, including GHG emission requirements, and take action in our operations accordingly. We invest to maintain compliance with applicable laws and cooperate across regions to apply best practices in sustainability. Regulation is also monitored by the regional risk and sustainability managers and also by the group risk manager. Developments regarding current regulation such as environmental regulation in each region are regularly presented at management and EXCO meetings, at the quarterly Regional Sustainable Development Council and Group Sustainable Development Council meetings and fed through the Social Ethics Transformation and Sustainability Committee and ultimately, to the board.
Emerging regulation	Relevant, sometimes included	The potential impacts of emerging regulation on direct operations (mills) such as the European Union's proposals for zero decarbonisation by 2050 are monitored by the regional risk and sustainability managers, the group risk manager and regional and group legal departments. Plantation risk (direct operations) is also monitored by the regional and sustainability managers and by Sappi Forests' planning and research division.

		<p>In terms of both plantations and mills, we liaise with industry associations to remain informed about emerging regulation and, if necessary, participate in formulating a strategic response.</p> <p>Other regulations, for example the use of chemicals in paper and board packaging and Modern Slavery, are also monitored.</p> <p>Developments regarding emerging regulation are presented at the quarterly Regional Sustainable Development Council and Group Sustainable Development Council meetings and fed through the Social Ethics Transformation and Sustainability Committee and ultimately, to the board.</p>
Technology	Relevant, sometimes included	<p>Technology is a core pillar of competitive advantage in our industry and represents a risk if we do not make relevant, ongoing technology investments. Our R&D spend in 2019 was US\$42 million, representing 0.73% of revenue, which is within the range of similar industries</p> <p>In terms of mills and markets 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 where woodfibre can replace carbon intensive products.</p> <p>Under the umbrella of the 1.5 Future Energy Technologies & Decarbonisation cluster, we are exploring technologies for fuel shift and deep decarbonisation in terms of Scope 1 & 2 emissions, with a particular emphasis on energy; pulping; papermaking and bleaching.</p> <p>In terms of plantations, as we experience the impacts of a changing climate on our woodfibre sources, so 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.</p> <p>In addition, we are leveraging technology to provide customers with products which have enhanced environmental credentials as per the following example: Packaging for the food industry that meets stringent health and safety standards and is also recyclable is a long-standing challenge. Sappi has been working with leading consumer brand owners to develop and supply renewable paper-based packaging solutions by understanding and supporting the goals of making their packaging recyclable without compromising on food protection and</p>

		shelf life. One example of this is the new Sappi Guard range of products. These innovative papers for flexible packaging come with integrated barriers against oxygen, water vapour, grease, aroma and mineral oil. Thanks to the integrated barriers, there is no need to apply special coatings or laminations. The work was enabled by Sappi's 2017 acquisition of barrier film technology company Rockwell Solutions. In FY2019 we used this technology when we partnered with a global fast moving consumer goods (FMCG) company and a specialist flexible packaging converter to develop the wrapper for a new confectionery snack bar. The launch of the new snack bar highlights the benefits of collaboration across the value chain in a focused effort to increase the use of recyclable packaging made from renewable woodfibre.
Legal	Relevant, sometimes included	Legal aspects such as our compliance with the US Lacey Act, EU Timber Regulation, Australian Illegal Logging Prohibition Regulation, and other legal requirements are monitored by the investor relations, legal and strategy departments.
Market	Relevant, sometimes included	In today's competitive marketplace, loss of markets is an ongoing risk that is monitored by the sustainability and risk managers, as well as by the sales teams. However, it is mitigated by the fact that consumers are looking for products with lower carbon footprint and sound environmental credentials like those we have on offer. Accordingly, we have expanded our portfolio of lightweight speciality and packaging grades to meet this need. Following the conversion of the PM1 at Somerset Mill and the conversion of Maastricht mill for example, the mills can now produce paperboard for folding cartons. Examples include perfume boxes, packaging for items like toys, small electronics, chocolates and other fast-moving consumer goods. We have also completed dissolving pulp debottlenecking projects at Cloquet, Saiccor and Ngodwana Mills, thereby giving expanding our capacity to offer consumers fibres manufactured from a natural, renewable resource rather than from fossil fuels.
Reputation	Relevant, sometimes included	<p>Many consumers erroneously equate deforestation with pulp and paper companies. This misconception is a risk in that it could significantly impact our reputation and hence our profitability. However, it is mitigated by our commitment to zero deforestation and by responsible sourcing activities.</p> <p>Deforestation: Deforestation is a significant reputational risk. We neither harvest nor buy woodfibre which originates from tropical natural forests and our wood sourcing causes zero deforestation. Our commitment to zero deforestation means: knowing the origin of</p>

		<p>woodfibre; ensuring that suppliers implement practices to promptly regenerate forests post-harvest, which is required under the global forest certification standards that Sappi is committed to upholding; implementing our Supplier Code of Conduct to assess supply chain, ethical and legal risks and not sourcing from suppliers associated with deforestation</p> <p>Responsible sourcing: Globally, 75 % of fibre supplied to our mills is certified. The balance is procured from known and controlled sources. In South Africa, 100% of Sappi’s owned and leased plantations are FSC certified for Forest Management. In South Africa and North America, Sappi works with landowners to increase certification. In Europe, Sappi benefits from fairly high coverage of forest certification and works to maintain and expand this through our sourcing practices and by collaborating with the forest certification systems especially PEFC International.</p> <p>We have also worked to expand sustainable forestry practices and certification: SNA works closely with a variety of programmes dedicated to providing logger education and continuous education, including SFI State Implementation Committees, Maine Forest Products Council, Maine Tree Foundation, and numerous academic programmes (providing financial and in-kind support). 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). In South Africa we have also established a group forest certification scheme for small- and medium-sized growers. We pay growers in the scheme a premium for certified timber.</p>
<p>Acute physical</p>	<p>Relevant, sometimes included</p>	<p>Acute physical risks in the form of fire are present in South Africa. Sappi Forests has a comprehensive Risk Management System which comprises risk assessments, monthly compliance checks, management procedures, standards and general back-up information. Prior to each fire season, fire competitions and simulated fire training are conducted at each plantation. Assessments are conducted on all role players, which will highlight any shortcomings. Mitigation takes place to rectify non-conformances that are identified, and the information gathered is used to ensure that all role-players receive the correct training. Fuel Load maps are prepared for all districts to assist in the management of fuel loads and identification of major risks. Throughout the year forest management look for opportunities to reduce fuel loads within the</p>

		<p>plantations they manage. When re-planting, this often involves the prescribed burning of harvest residue, but Sappi Forests is increasingly making use of mulchers as a more expensive but lower risk alternative. Regular weeding helps reduce fuel loads. Integrated weed management planning is done for all plantations.</p> <p>The assessment of fuel load status, the age and genus of the crop provides the forester and Incident Commander with a tool to calculate the damage potential at a compartment level. This facilitates an average risk rating per block or cluster of blocks which allows for strategic planning. This enables the forester to focus their resources at the right places. Part of this exercise is to produce risk rating maps at compartment level to enable foresters to plan fire protection systems and execute fire response activities. Each plantation/district has a weather monitoring station that is strategically placed to keep track of the Fire Danger Index (FDI). The FDI data is reported automatically using a cell phone or the camera detection data network to a central database (Vital Fire Weather) where the data of different landowners are consolidated. Vital Fire Weather then sends alerts via SMS and e-mail. Current and forecasted FDI's can be viewed on the Vital Fire Weather website: www.vitalfireweather.co.za</p> <p>When the Fire Danger Index (FDI) goes beyond the Yellow class (reaches Orange) all aerial and ground firefighting resources are placed in strategic positions, all airstrips are manned and detection centres are instructed to activate aircraft immediately should a fire be detected within or near our plantations.</p>
<p>Chronic physical</p>	<p>Relevant, always included</p>	<p>In South Africa, there is the potential for our mills to be impacted by low availability of water. We monitor the situation on an ongoing basis. 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.</p> <p>Woodfibre is a versatile, renewable, natural resource in high demand from many sectors. This market demand is a risk in that it can at times lead to local competition and short supply especially when production has been reduced due to climate change-induced events such as fire, insect or disease. Accordingly, availability is assessed as part of an ongoing risk management process. In Europe, we mitigate fibre supply risk through procuring wood through well-established wood sourcing companies (proNARO GmbH in Germany, Sapin S.A in Belgium, Papierholz Austria GmbH in Austria, Metsä Forest in Finland) all of which operate on the ground with an established pool of forest owners</p>

		<p>and wood suppliers</p> <p>In North America, our operations do not currently face material risks associated with climate change.</p> <p>A preliminary climate change investigation conducted by Sappi Forests' scientists indicated that climate change is likely to be more significant in Southern Africa compared to the world average. Accordingly, chronic physical risks are a key risk mitigation focus. Health of growing stock is measured through continuous evaluation of trees by growth rate, age, utilisation efficiency, annual measurement programme using a pre-harvest measurement of 20 000 hectares per annum (8%), as well as an airborne laser scan of an entire plantation conducted every second year and using trends and drivers, e.g. permanent sample plot programmes (PSP) and actual versus planned yields per compartment.</p> <p>Research and development play a significant role in tree growth and improved supply chain efficiency. Conventional breeding methods are no longer viable as change is rapid, breeding cycles are too long and species variation is not sufficient to respond to future threats. Molecular technology and biotechnology tools are used to ensure forest sustainability and precision agriculture. Other methods include hybrid varieties where desired traits of two species are combined to increase adaptability to marginal areas; and mulching not burning, as mulched areas hold more soil water and have a positive impact on growth</p>
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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?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical
Rising mean temperatures

Primary potential financial impact

Increased direct costs

Company-specific description

In South Africa, drought and pest infestations caused by climate change have already had an impact on plantation health. Sappi forests 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.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

45,000,000

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. The fair value of our plantations is estimated at US\$451 million (less the estimated costs of delivery, including harvesting and transport costs). The figure given here represents 10% of the fair value.

Cost of response to risk

3,500,000

Description of response and explanation of cost calculation

This cost represents the amount of invested in research and development of genetically improved planting stock in FY2019. This research 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.

Comment

In addition to the US\$3.5 million, Sappi is also contributing US\$7,000 per annum over three years to a detailed climate change mapping project. Together with other forestry companies in South Africa and financial support from the Department of Science and Technology Forest Sector Innovation Fund, Sappi initiated the project with the Global Change Institute (GCI) at the University of the Witwatersrand. Including Sappi's contribution, total investment per annum amounts to US\$56,000 over three years..The GCI team is made up of South Africa's leading climate change experts. The project entails two phases:

- Phase 1: 2020: Generation of raster climate surfaces for the entire forestry domain of South Africa, at 8 km resolution, with monthly time resolution, for the years 2020, 2030, 2040 to 2100. The variables would include up to 20 important bioclimatic indicators as well as averages and information about their statistical distribution, such as variances, confidence ranges and probabilities of exceedance
- Phase 2: 2021 onward: A second iteration of the variables generated for the one-year product, refining the indicators or making them more specific for species or issues; and/or including more ensemble members or scenarios to broaden the robustness of the evaluation; and/or 1 km data for selected parts of the country.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Current regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

Sappi is subject to a carbon tax in South Africa which came into effect on 1 June 2019

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,063,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The current estimate is US\$2.063 million. The estimate amount represents 7 months' tax liability using R120 per ton with 80% allowances for 1.3 million tons of CO₂e. This carbon tax only needs to be paid in October 2020. We are still awaiting carbon sequestration formulae which should reduce this liability.

Cost of response to risk

2,062,937

Description of response and explanation of cost calculation

This carbon tax only needs to be paid in October 2020. We are still awaiting carbon sequestration formulae which should reduce our liability

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Acute physical

Other, please specify

Water stress

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Saiccor Mill, one of Sappi's dissolving pulp mills in South Africa, has been impacted from time to time by low water flows on the uMkomazi River the prime source of water to the mill. To mitigate the impact of low flows on the river, in FY2016 we completed a project to raise the Comrie Dam wall, upstream of Saiccor Mill, tripling the amount of water in the dam. However, this is still a risk: In September 2019 the South African Weather Service warned that some international forecast models suggest that South Africa may be moving into a (dry) El Niño rainfall phase. Should this occur and there be water shortages in the region, legally the local municipality's first priority would be water allocation to people rather than industry.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

3,390,000

Potential financial impact figure – maximum (currency)

67,800,000

Explanation of financial impact figure

Saiccor Mill makes a significant contribution to Sappi SA's EBITDA. The range given here assumes a decrease of 10-20% in EBITDA because of production disturbance. Sappi SA's EBITDA in FY2019 was US\$339 million (excluding special items).

Cost of response to risk

1,637,538

Description of response and explanation of cost calculation

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. The cost given here was the cost of raising the dam wall (FY2018 exchange rate ZAR/US\$). The annual maintenance cost is approximately US\$6,153 per annum and the five-yearly inspection cost is approximately US\$7,792.

Comment**Identifier**

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

Sappi has ten manufacturing sites in Europe, where, in March 2020, the European Commission presented its proposal for the first EU-wide climate law within the framework of the EU green deal. The law, once finalised, intends to enshrine the EU objective of climate-neutrality by 2050 in legislation. Sappi fully supports this objective and has committed capex to decarbonise in line with our commitment to the Science Based Target Initiative. In Europe, our commitment is to reduce combined Scope 1 and 2 emissions from a 2019 base by 25% by 2025. Should we not have a reduction in emissions against the 2019 base, this could represent a financial and reputational risk.

Time horizon

Long-term

Likelihood

Exceptionally unlikely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

174,776,100

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact figure assumes that we don't manage to decrease combined Scope 1 and 2 emissions from the 2019 base and takes into account the global tax of US\$75 per ton of CO2 that the IMF is recommending should be implemented by 2030 to limit the planet's warming to 2 degrees Celsius. The maximum potential financial impact figure is the tax figure per annum from 2030 onwards

Cost of response to risk

0

Description of response and explanation of cost calculation

Given the long timelines, it is not possible to quantify our risk response, particularly as we do not yet know what the energy mix of our indirect (Scope 2) energy sources will be.

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased likelihood and severity of wildfires

Primary potential financial impact

Increased direct costs

Company-specific description

In South Africa Sappi owns and leases 390,000 ha of land. Climate change exacerbates the likelihood of forest fires which in turn have the potential to impact the sustainability of this fibre base.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

15,900,000

Potential financial impact figure – maximum (currency)

66,300,000

Explanation of financial impact figure

The minimum figure (which is also the cost of response) represents insurance and firefighting costs. The maximum figure is based on an estimated loss of 601,000 white wet tons and represents the replacement value of these tons over and above insurance cover.

Cost of response to risk

15,900,000

Description of response and explanation of cost calculation

The cost of insurance in FY2019 was US\$909,090 and fire prevention was US\$15 million. Following devastating fires in 2007/2008 Sappi implemented an extensive fire protection strategy through which risks are now managed via an integrated Fire Risk Management System. In addition, significant investment has improved fire detection, while fire crew training and improved equipment has significantly improved response times to fires. Sappi staff play key roles in the provincial and local fire protection associations. Involvement and leadership provided at FPA's ensures integrated fire management practices are embedded in the greater community and resource efficiencies and reaction is optimised. Example. Ensuring suppression resources are

optimally placed on high fire risk days, response readiness is confirmed, and deployment is coordinated in an integrated manner. This enhances risk management on and off property.

Comment

The cost of fire damaged timber was US\$4 million in FY2019. Sappi manages risks via an integrated Fire Risk Management System. In addition, significant investment has improved fire detection, while fire crew training and improved equipment and increased resource numbers has significantly improved response times to fires. Sappi staff play key roles in the provincial and local fire protection associations ensuring better optimal integrated fire risk management sharing technical knowledge, resources and skills with broader neighbouring communities, reducing risk more holistically.

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?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Other, please specify

Development of new products and services

Company-specific description

Both legislative edicts and consumer pressure are forcing companies to rethink their packaging needs. Governments, retailers and brand owners all over the world are demanding paper based packaging solutions for their products, and eco-conscious consumers and shoppers are pressuring brand owners for more biodegradable, recyclable and compostable packaging, all reflecting a more circular economy. We estimate the increasing need for more sustainable and environmentally friendly

packaging solutions will lead to demand growth of 3% to 6% per year, globally, across the spectrum of our products.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

20,610,000

Potential financial impact figure – maximum (currency)

41,220,000

Explanation of financial impact figure

This range represents potential financial impact per annum based on our expectation that demand will grow by 3-6% per annum and also based on 3-6% of EBITDA of US\$687 million in 2019

Cost to realize opportunity

150,000,000

Strategy to realize opportunity and explanation of cost calculation

Typically, we aim for a five-year payback on projects. The expansion of our packaging and specialties operations in Europe and North America grew our production volume by 30-40%. The figure given here represents the cost of expansion offset against payback.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

One of Sappi's key strategic drivers is to grow dissolving pulp capacity. This is based on our belief that as global textile demand grows, driven by population growth, fashion and rising wealth in developing economies, the need to develop more climate-friendly solutions, derived from renewable materials that are not fossil-fuel based, will drive increasing market share for viscose, which is derived from dissolving pulp. Despite the challenges in 2019 demand for viscose still grew by 6%. Dissolving pulp expansion projects at Cloquet and Ngodwana Mills are now complete. As we expand capacity, we focus on further reducing environmental impact. In FY 2019, we completed 40% of an expansion project, known as Vulindlela, at Saiccor Mill. Vulindlela's significant environmental benefits include:

- Coal consumption reducing by more than 130,000 tpa, which means fossil carbon emissions will be approximately half
- Gaseous emissions decreasing by about 40%
- Water consumption reducing by around 5%
- Water use efficiency increasing by approximately 17%
- Energy efficiency improving by around 10% and renewable-energy use increasing by about 20%
- Waste to landfill reducing by about 50%.

In terms of climate change, Vulindlela will help to reduce the impact of carbon taxes which came into effect in 2019 in South Africa and will also allow us to offer our customers dissolving pulp with a lower carbon footprint. Select from:

- Short-term
- Medium-term
- Long-term
- Unknown

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

41,220,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The single figure estimate represents growth in EBITDA of 6% over one year, aligned with our belief that the dissolving pulp market will grow by 6 % per annum and based of EBITDA of US\$687 million in 2019.

Cost to realize opportunity

213,000,000

Strategy to realize opportunity and explanation of cost calculation

This figure represents the total cost of expansion of dissolving pulp facilities at Saiccor and Cloquet Mills

Comment

Identifier

Opp3

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

Primary potential financial impact

Other, please specify

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 2019, Sappi and consortium partners began construction of a 25 MW biomass energy plant at Ngodwana Mill in Mpumalanga province, known as Ngodwana Energy.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

168,000

Potential financial impact figure – maximum (currency)

15,000,000

Explanation of financial impact figure

The financial range assumes the displacement of 200 000 tons of fossil CO₂ for Ngodwana Energy. The minimum figure represents the South African government's carbon tax of US\$8.40 per ton of CO₂, the maximum figure represents the global tax of US\$75 per ton of CO₂ that the IMF is recommending should be implemented by 2030 to limit the planet's warming to 2 degrees Celsius

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

The opportunity cost is confidential

Comment

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 late 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. With this project, Sappi has become one of only a few companies in South Africa to embark on a biomass energy project. 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 late 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. With this project, Sappi has become one of only a few companies in South Africa to embark on a biomass energy project.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Other, please specify

Access to new markets

Company-specific description

Since 2005, the North American pulp and paper industry has lowered its carbon footprint by 35%, and SNA by 66%, in excess of the US 26% to 28% reduction commitment called for under the Paris Agreement on climate change

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

22,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial estimate assumes an increase of 20% in EBITDA. Sappi North America’s EBITDA (excluding special items) was US\$110 million in FY2019

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

In 2019 we relaunched our eQ Calculator to provide our customers with the ability to assess the carbon footprint impact of their purchase decisions. The cost was minimal as it was developed internally by environmental and technical experts.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

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

Yes, qualitative and quantitative

C3.1b

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

Climate-related scenarios and models applied	Details
Other, please specify In addition to NDCs, we have used our own	Sappi is taking a purposeful phased approach to the use of climate scenarios in our risk assessment and strategic planning processes. Currently we are involved in two projects in using climate scenarios.

<p>internally developed assumptions of 2 degrees</p>	<p>The first is with other industry members and the Global Change Institute (GCI) at the University of the Witwatersrand in South Africa. Phase 1: 2020: Generation of raster climate surfaces for the entire forestry domain of South Africa, at 8 km resolution, with monthly time resolution, for the years 2020, 2030, 2040 to 2100. Phase 2: 2021 onward: A second iteration of the variables generated for the one-year product, refining the indicators or making them more specific for species or issues; and/or including more ensemble members or scenarios to broaden the robustness of the evaluation; and/or 1 km data for selected parts of the country.</p> <p>The second project is at our South Africa Saiccor dissolving pulp mill, where water scarcity has been a chronic as well as acute problem. In this instance we have retained an independent consultant who is using publicly available regional models. This work builds on earlier flood risk assessment work conducted in 2010 and again in 2017. There are currently only region-specific projections available for RCP 2.6 and RCP 8.5 in South Africa For the two middle of the road projections (RCP 4.5 and RCP 6.0) we intend to upgrade the water model with the work being done by the GCI when it is complete.</p> <p>Our tree plantations and Saiccor Mill have been prioritized because South Africa is already experiencing climate-related physical and transitional risks whereas our direct operations in North America and Europe are not nor as likely to do so during our short and medium time horizons. Our overarching time horizons for our assessments to ensure a more consistent approach in all three regions is short, 1-2yrs; medium, 3-5 (2025); and long 5-30 (2050), consistent with our 5-year goal setting process as well as our commitment to the Science Based Targets initiative (SBTi). Our commitment to the SBTi will also create an opportunity and minimize risks associated with reputation and market preferences.</p> <p>For our other mills in NA and EU we will be using climate data to assess physical risk consistent with RCP8.5 values. For our two primary “upstream” considerations, water and forests (timber sources) in both North America and Europe we will be relying on available government and academic reports which generally use a combination of RCP values.</p> <p>Globally, we have committed to the SBTi which brings all three regional operations in alignment with regard to transitional risks associated with GHG emission reduction policy/legislation. Therefore, having made this commitment, a scenario undertaking around transitional risks associated with climate policy/legislation is presently not being viewed as necessary. Nonetheless, this will be monitored.</p>
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	<p>The transitional risks associated with water will initially be driven by the same scenarios used for physical risks. Forests/timber transitional risk will more likely be influenced by regional policy development concerning the roles of forests in mitigating GHG emissions and therefore is more in line with an RCP of 2.6. Accordingly, Sappi is involved in the WRI GHG Land Sector Protocol Working Group. In addition, in South Africa the offset of the carbon sequestration of our tree plantations against the GHG emissions from our mills as these relate to the country's carbon tax and the NDC are informing our view on this transitional risk rather than relying on a scenario.</p> <p>For transitional opportunities, we do not see the need for a specific scenario analysis of differing RCP considerations. The marketplace is deemed to be our most significant signal and it is clearly signalling that low carbon products are preferred. This was one of the reasons why we committed to science based targets.</p>
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C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>Consumer preference for renewable products with a lower carbon footprint from sustainably managed forests and the 'paper-for-plastic' movement are strategic opportunities.</p> <p>.</p> <p>In 2018, we converted PM1 at the Somerset Mill. The capacity of the machine was expanded, and it now has the flexibility to produce both coated graphics paper and paperboard products used in the folding carton and food service markets. During 2019, we ramped up production of paperboard grades on this machine as we qualified the various products with a range of customers.</p> <p>Following the acquisition of the paper mill assets of the Cham Paper Group and the completion of the Maastricht Mill conversion in 2018, the packaging and speciality</p>

		segment volumes grew by 12% in 2019.
Supply chain and/or value chain	Yes	<p>Deforestation is chiefly caused by the conversion of forest land to agriculture and livestock areas. It is the second-leading cause of climate change after burning fossil fuels and accounts for nearly 20 percent of all greenhouse gas emissions — more than the world’s entire transport sector [FAO. 2018. The State of the World’s Forests 2018 – Forest pathways to sustainable development. Rome.] Forest certification systems with third-party verified forest management and chain-of-custody processes ensure that responsible forest management practices are implemented in the forest and that woodfibre from certified forests can be identified throughout the supply chain.</p> <p>Against this backdrop, certification is one of our key strategic focus areas. One of our 2020 sustainability goals is to maintain or improve the percentage of certified fibre supplied to our mills. In 2019, globally this stood at approximately 75%. We utilise the following leading global certification systems: The Forest Stewardship Council™ (FSC™) programme; the Programme for the Endorsement of Forest Certification™ (PEFC™); and the Sustainable Forestry Initiative® (SFI®) program, and other PEFC-endorsed systems. Knowing the origin of woodfibre is a fundamental prerequisite for responsible woodfibre sourcing. Sappi requires rigorous tracing practices and documentation of the origin of all woodfibre. Suppliers must provide evidence that all woodfibre is sourced from controlled, non-controversial sources in accordance with the FSC Controlled Wood Standard, as well as PEFC (and SFI in the United States) risk-based due diligence systems. We neither harvest nor buy woodfibre which originates from tropical natural forests and our wood sourcing causes zero deforestation. Our commitment to zero deforestation means knowing the source of woodfibre; ensuring that suppliers implement practices to promptly regenerate forests post-harvest, which is required under the global forest certification standards that Sappi is committed to upholding. It means implementing our Supplier Code of Conduct to continually assess supply-chain, ethical and legal risk; and not sourcing from suppliers associated with deforestation. We work to build transparent supply chains and maintain close relationships with our suppliers.</p>

		Forest products create an incentive for sustainable forest management.
Investment in R&D	Yes	In 2019, we invested US\$42 million in R&D, which represents 0.7% of revenue – within the range of similar industries. A large portion of R&D spend was allocated to initiatives aimed at progressing our tree improvement programmes (higher yields with higher resistance to disease and pests and new nursery techniques) and lowering our carbon footprint – for example pulp backward integration which brings green energy opportunities aligned with our strategy; energy swaps and energy change opportunities balanced with economics Our overarching aim is for both Sappi and our customers to become more resilient to climate change impacts and to work achieving SDG13: Climate action. As an example: we collaborated closely with specialist packaging converter and a global FMCG company to support the launch of a new confectionery snack bar wrapped in recyclable paper.
Operations	Yes	Our 2020Vision was influenced by climate change concerns and natural resource constraints: Through intentional evolution we will continue to grow Sappi into a profitable and cash generative, diversified woodfibre group – focused on dissolving wood pulp, paper and products in adjacent fields. We continue to make progress in developing new and innovative products, ideally suited to a world looking for more sustainable chemical and material solutions. We are growing our lignin business and have made significant progress to enter higher-value lignin markets in the near term. The sugar demonstration plant adjacent to our Ngodwana Mill has allowed us to test and optimise xylose sugars extraction technology on an industrial scale for markets such as xylitol and furfural. We are pursuing various options to develop projects in these markets. Pending successful commercial arrangements, this may result in final product technology scale-up and ultimate construction of commercial xylose or furfural plants at our mills in the United States or South Africa. Our cellulose nanofibrils and cellulose microfibrils development is ongoing, with exciting co-development and product acceptance progress made in our paper business as well as with firms in the coatings and cosmetics industries. We are also running development trials with our fibre composite product alongside automotive producers.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital expenditures	<p>Climate change is a key risk for people and the planet and it is essential that the world transitions to a low-carbon economy. Accordingly, in June 2020 Sappi Limited committed to set science-based targets through the Science Based Targets initiative (SBTi). This commitment highlights our increased strategic focus on unlocking the power of renewable resources and aligns our decarbonisation pathway with climate science. We have made the commitment at a time when we are closing out our 2020 sustainability targets and have established new 2025 targets, including a global specific combined Scope 1 and 2 CO₂ reduction target. In line with our decarbonisation pathway, we have identified key projects to realise our 2025 CO₂ reduction targets and will continue to allocate capex to achieve this goal and future ones. In Europe, for example, we have identified capex needs within our five-year budget plan for major boiler projects at four mills, as well as smaller energy efficiency, CO₂ and green electricity procurement. These investments will be reviewed within our annual and five-year budgeting processes.</p> <p>When relevant, the capex approval process justification and feasibility studies and presentations include an assessment of performance towards our emissions reduction targets.</p>

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

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

Year target was set

2015

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Intensity metric

Metric tons CO₂e per metric ton of product

Base year

2014

Intensity figure in base year (metric tons CO₂e per unit of activity)

0.678

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

36.93

Target year

2020

Targeted reduction from base year (%)

5

Intensity figure in target year (metric tons CO₂e per unit of activity) [auto-calculated]

0.6441

% change anticipated in absolute Scope 1+2 emissions

-5

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO₂e per unit of activity)

0.718

% of target achieved [auto-calculated]

-117.994100295

Target status in reporting year

Underway

Is this a science-based target?

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

Please explain (including target coverage)

This is a regional target for Sappi Europe. This intensity target is a 5% reduction from base year 2014 to 2020, for Scope 1 + Scope 2 emissions in units of CO₂e/adt (air dried tons of saleable production).

Target reference number

Int 2

Year target was set

2019

Target coverage

Country/region

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Intensity metric

Metric tons CO₂e per metric ton of product

Base year

2014

Intensity figure in base year (metric tons CO₂e per unit of activity)

0.97

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

51.5

Target year

2020

Targeted reduction from base year (%)

10

Intensity figure in target year (metric tons CO₂e per unit of activity) [auto-calculated]

0.873

% change anticipated in absolute Scope 1+2 emissions

-10

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO₂e per unit of activity)

1.77

% of target achieved [auto-calculated]

-824.7422680412

Target status in reporting year

Achieved

Is this a science-based target?

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

Please explain (including target coverage)

This is a regional target for Sappi South Africa. This intensity target is a 10% reduction from base year 2014 to 2020, for Scope 1 + Scope 2 emissions in units of CO₂e/adt (air dried tons of saleable production).

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Target(s) to increase low-carbon energy consumption or production

Target(s) to reduce methane emissions

Other climate-related target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2015

Target coverage

Country/region

Target type: absolute or intensity

Intensity

Target type: energy carrier

All energy carriers

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)

MWh

Target denominator (intensity targets only)

metric ton of product

Base year

2014

Figure or percentage in base year

5.453

Target year

2020

Figure or percentage in target year

4.908

Figure or percentage in reporting year

4.897

% of target achieved [auto-calculated]

102.0183486239

Target status in reporting year

Achieved

Is this target part of an emissions target?

Yes, this target is part of an emissions target as it directly relates to Scope 1 and 2 emissions. The burning of fossil fuel sources leads to Scope 1 and 2 emissions. A target of reducing specific purchased fossil energy directly relates to a reduction of emissions.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This regional target is based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Purchased fossil energy in GJ in Sappi South Africa per metric ton of air-dried saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). This regional target is to reduce specific purchased fossil energy by 10% by 2020, with base year 2014. Purchased fossil energy directly relates to emissions in Scope 1 and Scope 2 categories. The burning of fossil fuel sources leads to Scope 1 and 2 emissions. The target has been converted to MWh for CDP input.

Target reference number

Low 2

Year target was set

2015

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

Target type: energy carrier

All energy carriers

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)

MWh

Target denominator (intensity targets only)

metric ton of product

Base year

2014

Figure or percentage in base year

6.43

Target year

2020

Figure or percentage in target year

6.106

Figure or percentage in reporting year

6.344

% of target achieved [auto-calculated]

26.5432098765

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes, this target is part of an emissions target as it directly relates to Scope 1 and 2 emissions. The total energy calculation includes fossil fuel sources. The burning of fossil fuel sources leads to Scope 1 and 2 emissions. A target of reducing energy usage or increasing energy efficiency directly relates to a reduction of emissions

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This company wide target is 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 pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020, with base year 2014. Total energy relates to emissions in Scope 1 and Scope 2 categories as the fuel sources included in the total energy calculation includes fossil fuels which emits greenhouse gasses. The target has been converted to MWh for CDP input.

Target reference number

Low 3

Year target was set

2015

Target coverage

Country/region

Target type: absolute or intensity

Intensity

Target type: energy carrier

All energy carriers

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)

MWh

Target denominator (intensity targets only)

metric ton of product

Base year

2014

Figure or percentage in base year

4.4

Target year

2020

Figure or percentage in target year

4.18

Figure or percentage in reporting year

4.215

% of target achieved [auto-calculated]

84.0909090909

Target status in reporting year

Underway

Is this target part of an emissions target?

Emissions reduction target Reference number: Int1. Yes, this target is part of an emissions target as it directly relates to Scope 1 and 2 emissions. The total energy calculation includes fossil fuel sources. The burning of fossil fuel sources leads to Scope 1 and 2 emissions. A target of reducing energy usage or increasing energy efficiency directly relates to a reduction of emissions.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This regional target is 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, with base year 2014. Total energy relates to emissions in Scope 1 and Scope 2 categories as the fuel sources included in the total energy calculation includes fossil fuels which emit greenhouse gasses. The target has been converted to MWh for CDP input.

Target reference number

Low 4

Year target was set

2015

Target coverage

Country/region

Target type: absolute or intensity

Intensity

Target type: energy carrier

All energy carriers

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)

MWh

Target denominator (intensity targets only)

metric ton of product

Base year

2014

Figure or percentage in base year

8.05

Target year

2020

Figure or percentage in target year

7.65

Figure or percentage in reporting year

8.167

% of target achieved [auto-calculated]

-29.25

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes, this target is part of an emissions target as it directly relates to Scope 1 and 2 emissions. The total energy calculation includes fossil fuel sources. The burning of fossil fuel sources leads to Scope 1 and 2 emissions. A target of reducing energy usage or increasing energy efficiency directly relates to a reduction of emissions.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This regional target is 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, with base year 2014. Total energy relates to emissions in Scope 1 and Scope 2 categories as the fuel sources included in the total energy calculation includes fossil fuels which emit greenhouse gasses. The target has been converted to MWh for CDP input.

Target reference number

Low 5

Year target was set

2015

Target coverage

Country/region

Target type: absolute or intensity

Intensity

Target type: energy carrier

All energy carriers

Target type: activity

Consumption

Target type: energy source

Low-carbon energy source(s)

Metric (target numerator if reporting an intensity target)

MWh

Target denominator (intensity targets only)

metric ton of product

Base year

2014

Figure or percentage in base year

9.08

Target year

2020

Figure or percentage in target year

8.629

Figure or percentage in reporting year

8.653

% of target achieved [auto-calculated]

94.6784922395

Target status in reporting year

Underway

Is this target part of an emissions target?

Emissions reduction target Reference number: Int2.

Yes, this target is part of an emissions target as it directly relates to Scope 1 and 2 emissions. The total energy calculation includes fossil fuel sources. The burning of fossil fuel sources leads to Scope 1 and 2 emissions. A target of reducing energy usage or increasing energy efficiency directly relates to a reduction of emissions.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This regional target is 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, with base year 2014. Total energy relates to emissions in Scope 1 and Scope 2 categories as the fuel sources included in the total energy calculation includes fossil fuels which emit greenhouse gasses. The target has been converted to MWh for CDP input.

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2015

Target coverage

Country/region

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Waste management
metric tons of waste generated

Target denominator (intensity targets only)

metric ton of product

Base year

2014

Figure or percentage in base year

0.18

Target year

2020

Figure or percentage in target year

0.162

Figure or percentage in reporting year

0.153

% of target achieved [auto-calculated]

150

Target status in reporting year

Achieved

Is this target part of an emissions target?

Emissions target Reference number: Int 2.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

This regional target is 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 Southern 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 own landfill emissions are included in Scope 1 missions. The IPCC landfill emissions method is used to determine the emissions from landfilled waste.

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	91	741,696
To be implemented*	11	405,000
Implementation commenced*	11	305,000
Implemented*	16	76,472.6
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

23,355

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

919,000

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

956,000

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

At Cloquet Mill in Sappi North America, Scope 1 emissions reduced by 23,355 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 category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

6,198

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

919,000

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

956,000

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

At Cloquet Mill in Sappi North America, 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 category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

1,208

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

398,000

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

1,200,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Somerset Mill: Replace digester liquor heaters – Phase 1. The project was to fix two leaking liquor heaters so that the hot steam condensate could be returned (and not be contaminated by the leaks). In FY2019, one of the liquor heaters was replaced. In FY2020 the second liquor heater was replaced. The investment was US\$600,000 per liquor heater, for a total of US\$1,200,000.

Initiative category & Initiative type

Energy efficiency in production processes
 Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

503

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

143,000

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

140,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Somerset Mill in North America: paper mill plate and frame heat exchanger upgrade.

Initiative category & Initiative type

Energy efficiency in production processes
 Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

2,080

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

574,000

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

288,000

Payback period

<1 year

Estimated lifetime of the initiative

6-10 years

Comment

Somerset Mill in North America: Refurbish paper mill, kraft mill and demineralized water plate & frame heat exchangers (six units in total).

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

274

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

26,960

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

40,545

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Somerset Mill: VFD for pulper #1 pump

Initiative category & Initiative type

Non-energy industrial process emissions reductions

Other, please specify

Machine equipment replacement

Estimated annual CO₂e savings (metric tonnes CO₂e)

108

Scope(s)

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)

62,332

Payback period

No payback

Estimated lifetime of the initiative

11-15 years

Comment

Westbrook Mill in North America: UC 60 Ton condenser replacement
Project reduced risk of R22 refrigerant emissions from failed coils.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

39,167

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

1,142,950

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

34,288,500

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

At Gratkorn Mill in Sappi Europe, steam reduction at PM09. Internal project number 7044, finalized in December 2019.

Initiative category & Initiative type

Non-energy industrial process emissions reductions
Process material efficiency

Estimated annual CO2e savings (metric tonnes CO2e)

177

Scope(s)

Scope 3

Voluntary/Mandatory

Voluntary

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

67,573

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

30,923

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

At Stockstadt Mill in Sappi Europe, installing a retention measurement system leads to reduction of 60 tons of retention aids. Internal project number 6303, finalized in November 2019.

Initiative category & Initiative type

Non-energy industrial process emissions reductions
Process material efficiency

Estimated annual CO2e savings (metric tonnes CO2e)

500

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

1,797,474

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

240,514

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

At Ehingen Mill in Europe: increased pulp integration.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

460.34

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

114,133

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

28,773

Payback period

<1 year

Estimated lifetime of the initiative

16-20 years

Comment

Tugela Mill in South Africa: PM2 gum refiners have no pressure control. Installing a drive on the refiner feed pump will ensure that the pressure through the refiners are constant. This will reduce wear on the refiner plates. Stabilising the pressure will allow

the flow-rate (recirculation) to be reduced thus reducing the required power in the refiners.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

393.48

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

25,124

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

125,618

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Stanger Mill in South Africa: No3 compressor upgrade

Initiative category & Initiative type

Energy efficiency in buildings
Lighting

Estimated annual CO₂e savings (metric tonnes CO₂e)

17.3

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

19,981

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

29,972

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Stanger Mill in South Africa: Energy efficient lighting - Phase 4

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

1,638

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

75,477

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

413,612

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Stanger Mill in South Africa: Stanger Mill: ABB silent drives

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

393.48

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

25,124

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

125,618

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Stanger Mill in South Africa: No 1 compressor upgrade

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

Method	Comment
Compliance with regulatory requirements/standards	In addition to internal and regulatory standards, Sappi mitigates climate change-related risk by using external benchmarks to monitor environmental performance and ensure compliance with best practice. In terms of energy, for example, Sappi uses best practice energy consumptions indicated by the Technical Association of Pulp and Paper Industries (TAPPI) in the United States of American and the Pulp and Paper Technical Association of Canada (PAPTAC). The Swedish Kretsloppsanspassad 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	There is a commitment to follow science based targets and implement projects that would support the initiative to keep global warming to WB2D. There is an annual budget which included energy efficiency

	projects as well as a 5-year capital plan with large projects focused on significant CO2 reduction. These projects include movement to low carbon energy generation as well as upgrading of certain plants which allow for fuel switching from fossil to biogenic.
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. When determining ROI there is a focus on environmental impact and a carbon price is used.
Internal incentives/recognition programs	Sustainability targets, including climate-related issues, form part of the overall business plan for Sappi LTD and globally. The outcomes of the Management Incentive Scheme in relation to all the sustainability targets are contained in the performance objectives of each mill and the personal objectives of all senior management.
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 agriculture or forest 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

Other, please specify

Mulching

Description of management practice

Plantation residue – bark, foliage, branches – is generated during the harvesting process. Burning of post-harvest residue (slash) is a common practice, as it reduces fuel load and the risk of wildfire. It also facilitates preplanting, planting and post-planting activities. However, burning reduces the content of soil organic matter (SOM). Burning can also increase the risk of soil erosion. Studies on nutrition of trees have shown that nutrient loss during burning followed by wind erosion is a concern with sensitive soils. Although we still practice burning, because of the benefits we have observed, mulching is being rolled out to more of our plantations each year.

Primary climate change-related benefit

Increase carbon sink (mitigation)

Estimated CO₂e savings (metric tons CO₂e)

30,961

Please explain

3496 ha mulched. Avoided CH₄ and N₂O emissions = 8.9 tCO₂e per hectare [Mass burnt = 77.5 tons dry/ha with combustion factor of 0.62]. Machine emissions = 0.044 tCO₂e per hectare [Tigercat M726 mulcher, 275kW, 50% load, fuel consumption 35l/h, productivity of 2.5 ha per hour].

Mulching has the following benefits:

- Moderates soil temperature and positively modifies the physical and chemical properties of soil
- Conserves soil moisture, reduces evaporation and increases retention of soil water
- Protects soil against erosion and compaction Inhibits weed growth Reduces plant stress – high temperatures of bare soil can scorch seedlings and cause fine root mortality

- Acts as a slow release fertiliser, releasing nutrients as it decomposes Improves access for fire prevention and control
- Retards coppice regrowth consequently reducing soil water use, leaving more water available for the new crop

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

100

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 43.55% energy self-sufficient and the group's renewable fuel energy usage was 52.93%, of which 66.35% is own black liquor.

In addition, in SA, all Sappi's owned and leased plantations are 100% FSC-certified,

while globally 74.76% of fibre used in Sappi's operations is 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

Some Sappi mills generate power on site from fossil- or renewable resources for internal consumption. Black liquor (dissolved organic compounds from wood) created during pulp manufacturing, is a biofuel and primary source of renewable fuel for power production.

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

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Increased renewable energy usage, increased exported power into the grid and increased power self-sufficiency

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

98

Comment

In some instances, (Westbrook- and Somerset Mill (North America), Alfeld, Carmignano, Condino, Ehingen, Stockstadt, 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)

4,098,481

Comment

The base year is Sappi's 2015 financial year.

Scope 2 (location-based)

Base year start

October 1, 2014

Base year end

September 30, 2015

Base year emissions (metric tons CO₂e)

1,593,601.3

Comment

The base year is Sappi's financial year 2015.

Scope 2 (market-based)

Base year start

October 1, 2014

Base year end

September 30, 2015

Base year emissions (metric tons CO₂e)

1,667,942.161

Comment

The base year is 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 emissions.

Defra Voluntary 2017 Reporting Guidelines

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)

4,395,555.97

Comment

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

C6.2

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

Row 1

Scope 2, location-based

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

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Market based total Scope 2 figure reported. (ten out of eighteen operations report a 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, market-based (if applicable)

1,608,661.38

Comment

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

C6.4

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

Yes

C6.4a

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

Source

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

Relevance of Scope 1 emissions from this source

No emissions from this source

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

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

Emissions are not relevant

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 and relative to Sappi's production facilities these emissions are not relevant.

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1,828,665.48

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. 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, multiplied by the relevant secondary (e.g., industry average) emission factors, or primary emission factor where available. The secondary emission factors are mainly obtained from the EcolInvent database. Primary emission factors are obtained from pulp suppliers.

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

0

Please explain

Not applicable

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

11,180.4

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. 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 only relevant to Sappi if a major or capital project has been done during the reporting year. During normal operating years, this category is not material for Sappi. Scope 3 GHG emissions were determined for capital projects in SSA during the 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

0

Please explain

Not applicable

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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

697,374.43

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. 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.

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

0

Please explain

Not applicable

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1,112,646.13

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. 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. The distances between the supplier and Sappi mills are determined for road, rail and marine transport. DEFRA emission factors are used to convert from distances by mode of transport to GHG emissions. Following the GHG Protocol principles, outbound transportation and distribution services that are paid for by Sappi are included in category 4 (Upstream transportation and distribution). Primary emission factors are obtained for outbound transportation services.

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

17.64

Please explain

Not applicable

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

81,053.85

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. Sappi is using the IPCC Waste Model to determine Scope 3 landfill emissions. Scope 3 landfill emissions is 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

0

Please explain

Not applicable

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

16,843.01

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. This category includes emissions from the transportation of Sappi employees for business related activities in vehicles owned or operated by third parties. Distances, mode of transport and emissions are obtained directly from the service providers.

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

18.92

Please explain

Not applicable

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

11,905.11

Emissions calculation methodology

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is used to calculate Scope 3 emissions. Sappi includes emissions for the transportation of employees between their homes and their worksites. The employee numbers were obtained from HR department. 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

0

Please explain

Not applicable

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

This category includes emissions from the operation of assets that are leased by the reporting company in the reporting year and not already included in scope 1 or scope 2. All operating units where we have operational control are included into scope 1 and 2 regardless of they are leased or not. Accordingly, this category is not considered as relevant to Sappi.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

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" .

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

This category includes emissions from processing of sold intermediate products by third parties (e.g., manufacturers). Our paper and packaging solutions are used directly by our customers and would therefore not have significant emissions. All intermediate products that require further processing, transformation, or inclusion in another product before use, could result in emissions. The processing of our dissolving pulp is assumed to have insignificant emissions and therefore not considered as a relevant category for Sappi. Not relevant. Our products do not generate emissions at the use stage.

Use of sold products

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant. Our products do not generate emissions at the use stage.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

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

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

This category includes emissions from the operation of assets that are owned by Sappi and leased to other entities in the reporting year, not already included in scope 1 or scope 2. This category is applicable to lessors (i.e., companies that receive payments from lessees). Sappi has no downstream leased assets, and therefore this not considered as a relevant category for Sappi in terms of emissions.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

This category includes emissions from the operation of franchises not included in scope 1 or scope 2. A franchise is a business operating under a license to sell or distribute another company's goods or services within a certain location. This category is not applicable to Sappi as we do not franchise our business.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

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

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

No other upstream emissions to be considered.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

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?

Yes

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

(C-AC6.6a/C-FB6.6a/C-PF6.6a) Disclose your Scope 3 emissions for each of your relevant business activity areas.

Activity

Processing/Manufacturing

Scope 3 category

Purchased goods and services

Emissions (metric tons CO2e)

149,410.5

Please explain

Mills use hardwood, softwood, logs and wood chips as raw materials. A standard industry average emission factor is applied to the mass of above mentioned raw fibre from our wood suppliers used at the mills to determine the Scope 3 emissions and forms part of Category 1: Purchased goods and services.

Activity

Distribution

Scope 3 category

Upstream transportation and distribution

Emissions (metric tons CO₂e)

237,610.37

Please explain

The transport of timber logs and chips from our wood suppliers to the mill is determined and forms part of Category 4: Upstream Transportation and distribution.

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

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

Yes

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

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

CO₂ emissions from land use management

Emissions (metric tons CO₂)

Methodology

Please explain

CO₂ removals from land use management

Emissions (metric tons CO₂)

376,000

Methodology

Default emissions factors

Please explain

The methodology includes: default emissions factors; region-specific emissions factors; empirical models; field measurements and LiDAR surveys. 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.

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 2019 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 2018 from the stocks in 2019. The methodology was largely based on Tier 1 (default) conversion factors. However, country-specific Biomass Conversion and Expansion factors have been used to estimate total above ground biomass from inventory data. This resulted in a reduction of total carbon stocks. The technical corrections were applied to all previous reporting years. Inventory data is based on field measurements and LiDAR measurements with empirical modelling to estimate annual growing stock in compartments that were not enumerated.

The carbon stock change was just calculated for above and below ground biomass. These values exclude the following pools: soil organic carbon, dead organic matter, litter layer as well as emissions from combustion of harvest residue. Next year's assessment will include some of these pools and sources.

In total, Sappi Forests reported 376 000 tons CO₂ emissions for the 2019 calendar year from managed forest land. Of this 145 452 tons CO₂e was as a result of natural disasters (wild fires over an area of 1,171 ha). The CH₄ and N₂O emissions related to the wild fires (included in the total) were 4291 t CO₂e.

Sequestration during land use change

Emissions (metric tons CO₂)

3,005

Methodology

Default emissions factors

Please explain

Both default emissions factors and empirical models were used. In 2019 afforestation was limited to 3ha. As these areas are small additions to existing plantations, additional sequestration associated with this activity was not calculated. In 2019, 21 ha was taken out of productive forest land to revert back to natural vegetation (grassland) as a result

of legal requirements (mostly for water conservation purposes). Using default emissions factors and empirical models, total emissions due to this land use conversion was 3 005 t CO₂e

Land management:

- Burning of crop residue emissions (forest land) 1 256 627 t CO₂ + 144 173 t CO₂ (non-CO₂ or CH₄ and N₂O) = 1 400 800 tons CO₂e. Based on default emissions factors for Other Temperate Forests (IPCC guidelines) over 15 458 ha.
- Nature conservation areas and fire breaks burning emissions (Grassland): 422 982 t CO₂ + 31 019 t CO₂ (non-CO₂ or CH₄ and N₂O) = 454 001 tons CO₂e. Based on default emissions factors over 39 612 ha Grassland Dry Season and 15 311 ha Savanna Dry Season.

CO₂ emissions from biofuel combustion (land machinery)

Emissions (metric tons CO₂)

Methodology

Please explain

CO₂ emissions from biofuel combustion (processing/manufacturing machinery)

Emissions (metric tons CO₂)

6,879,041.61

Methodology

Default emissions factors

Please explain

Biofuel (renewable fuel) carbon is considered “carbon neutral” because the carbon in biomass originates in the atmosphere. The burning of biomass recycles carbon to the atmosphere, unlike the burning of fossil fuels, which adds new carbon to the atmosphere. The GHG Protocol follows a reporting convention that is consistent with that used in national inventories, wherein CO₂ emissions from the combustion of biofuel are not included in Scope 1 emissions. The emissions reported here include CO₂ from the combustion of black liquor, biogas, sludge, and hog fuel. These fuel sources are used for the generation of green energy as steam and power. IPCC default emission factors and actual fuel calorific values are used to calculate emissions.

CO₂ emissions from biofuel combustion (other)

Emissions (metric tons CO₂)

Methodology

Please explain

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

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

Agricultural commodities

Timber

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

The boundaries used for data calculation are Sappi-owned South African plantations.

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

(C-AC6.9a/C-FB6.9a/C-PF6.9a) Report your greenhouse gas emissions figure(s) for your disclosing commodity(ies), explain your methodology, and include any exclusions.

Timber

Reporting emissions by

Total

Emissions (metric tons CO₂e)

376,000

Change from last reporting year

Higher

Please explain

Emissions from managed forest. This excludes emissions from burning of harvest residue, emissions from litter, soil and dead organic matter. This value also excludes management related emissions e.g. silviculture, harvesting, etc. 3815636 tons of biogenic CO₂ within harvested wood products. We plan to include additional emissions in future.

C6.10

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

Intensity figure

0.9364868887

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO₂e)

6,004,217.35

Metric denominator

metric ton of product

Metric denominator: Unit total

6,411,427

Scope 2 figure used

Market-based

% change from previous year

1.16

Direction of change

Increased

Reason for change

The slight increase in this intensity figure is due to an increase in Scope 2 intensity emissions. The main contributor for Scope 2 increase for SA mills is that Eskom's purchased power emission factor deteriorated by 9.4%, negatively impacting Scope 2 emissions. The Scope 1 intensity emissions were stable for this reporting year.

Intensity figure

0.0010449386

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO₂e)

6,004,217.35

Metric denominator

unit total revenue

Metric denominator: Unit total

5,746,000,000

Scope 2 figure used

Market-based

% change from previous year

1.23

Direction of change

Increased

Reason for change

A decrease in sales revenue combined with an increase in gross global combined Scope 1 and Scope 2 emissions caused the intensity figure to increase by a slight 1.23%.

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	4,072,294.26	IPCC Fifth Assessment Report (AR5 – 100 year)
CH ₄	265,453.81	IPCC Fifth Assessment Report (AR5 – 100 year)
N ₂ O	57,807.9	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	2,326,726.37
EU15	1,607,256.78
United States of America	461,572.82

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	2,326,726.37
Sappi Europe	1,607,256.78
Sappi North America	461,572.82

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)	1,183,859.12	-25.57803	30.66549
Saiccor Mill (SA)	616,272.97	-30.18078	30.77091
Stanger Mill (SA)	183,320.37	-29.36743	31.28908
Tugela Mill (SA)	341,102.17	-29.15216	31.40536
Alfeld Mill (Germany)	119,955.06	51.98592	9.82076
Ehingen Mill (Germany)	45,681.13	48.26766	9.72712
Gratkorn Mill (Austria)	446,161.62	47.13333	15.33333
Kirkniemi Mill (Finland)	259,940.69	60.18815	23.94212
Lanaken Mill (Belgium)	106,282.41	50.877	5.6427
Maastricht Mill (Netherlands)	170,233.82	50.85857	5.69457
Stockstadt Mill (Germany)	343,885.32	49.80421	8.46762
Cloquet Mill (Minnesota USA)	170,919.21	46.72288	-92.4384
Somerset Mill (Maine USA)	237,046.46	44.70652	-69.63782
Westbrook Mill (Maine USA)	53,607.15	43.68397	-70.35211
Lomati Mill SA	2,171.74	-25.7726	31.0402
Carmignano (Italy)	60,880.31	45.6311	11.7111
Condino (Italy)	52,099.96	45.8802	10.5934
Rockwell Solutions (UK)	2,136.47	56.4762	-3.05171

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)	4,084,424.34
Stationary Combustion (Renewable Fuel)	4,084,424.34
Process activities - make-up Chemicals	19,533.16
Mobile combustion	17,367.49
Waste management - Owned landfill emissions	206,713.62

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	<p>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.</p> <p>The stock-difference method (carbon stock change as an annual average difference between estimates at two points in time) was used to calculate 2019 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 2018 from the stocks in 2019.</p> <p>In total, Sappi Forests can report 376 000 tons CO2 emissions for the 2019 calendar year from managed forest (above and below ground biomass). There are plans to include emissions from burning of harvest residue as well as other carbon pools in future and to include land use change (natural vegetation restoration), but these are very small areas and very low carbon numbers.</p> <p>These emissions have not been included in the total externally assured</p>

	Scope 1 numbers as the method to calculate carbon sequestration by forests have not been finalised by local government in South Africa.
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C7.5

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

Country/Region	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Africa	739,534.13	739,534.13	736,370.24	44,439.94
EU15	768,109.49	723,090.69	1,841,594.95	928,595.77
United States of America	85,957.68	146,036.57	317,184.19	143,301.14

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 (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)
Sappi Southern Africa	739,534.13	739,534.13
Sappi Europe	768,109.49	723,090.69
Sappi North America	85,957.68	146,036.57

C7.6b

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

Facility	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)
Ngodwana Mill (SA)	69,576.75	69,576.75
Saiccor Mill (SA)	347,233.17	347,233.17

Stanger Mill (SA)	138,188.01	138,188.01
Tugela Mill (SA)	174,649.67	174,649.67
Alfeld Mill (Germany)	119,393	180,873
Ehingen Mill (Germany)	91,096	137,796
Gratkorn Mill (Austria)	43,039	0
Kirkniemi Mill (Finland)	203,101	203,101
Lanaken Mill (Belgium)	245,951	103,933
Maastricht Mill (Netherlands)	1,263	819
Stockstadt Mill (Germany)	61,422	92,628
Cloquet Mill (Minnesota USA)	35,199	35,199
Somerset Mill (Maine, USA)	50,673	110,651
Westbrook Mill (Maine, USA)	86	186
Lomati Mill (South Africa)	9,886.53	9,886.53
Carmignano (Italy)	1,620	2,539
Condino (Italy)	316	495
Rockwell (UK)	907	907

C7.6c

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

Activity	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)
Purchased power	1,593,601	1,608,661

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?

Increased

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	684.24	Increased	0.01	An insignificant amount of increased stationary biomass combustion increased Scope 1 + 2 emissions by 684.24 tons CO2e. We increased our absolute emissions by 684.24 tons CO2e and our total Scope 1 + 2 emissions in the previous year was 5,993,262.62 tons CO2e, therefore we arrived at 0.01% through $(684.24 / 5993262.62) * 100 = 0.01\%$ which is seen as no change.
Other emissions reduction activities	27,655.05	Decreased	0.46	Absolute Scope 1 + 2 emissions decreased by 0.46% due to emission reduction activities undertaken, mainly energy efficiency activities. Through these activities we reduced our emissions by 27,655.05 tons CO2e and our total Scope 1 + 2 emissions in the previous year was 5,993,262.62 tons CO2e, therefore we arrived at 0.46% through $(-27655.05 / 5993262.62) * 100 = 0.46\%$
Divestment				
Acquisitions	74,460.92	Increased	1.24	In Sappi Europe, the acquisition of two mills, Carmignano and Condino, resulted in a 1.24% increase of our absolute global Scope 1 + 2 emissions. We increased our absolute emissions by 74,460.92 tons CO2e and our total Scope 1 + 2 emissions in the previous year was 5,993,262.62 tons CO2e, therefore we arrived at 1.24% through $(74460.92 / 5993262.62) * 100 = 1.24\%$
Mergers				
Change in output	58,464.86	Decreased	0.97	A decrease in saleable production resulted in a 0.97% decrease in emissions (metric tons CO2e). Through the decreased production, we

				decreased our absolute emissions by 58464.86 tons CO2e and our total Scope 1 + 2 emissions in the previous year was 5,993,262.62 tons CO2e, therefore we arrived at 0.97% through $(58464.86 / 5993262.62) * 100 = 0.97\%$
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other				

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 undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes

Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	Yes
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 (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	19,518,841.93	14,400,071.11	33,918,913.04
Consumption of purchased or acquired electricity		2,747,428.32	147,721.06	2,895,149.38
Consumption of purchased or acquired heat				
Consumption of purchased or acquired steam		0	175,289.41	175,289.41
Consumption of self-generated non-fuel renewable energy		64,991.44		64,991.44
Total energy consumption		22,331,261.69	14,723,081.58	37,054,343.27

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	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

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

Fuels (excluding feedstocks)

Bitumen

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

225,416.26

MWh fuel consumed for self-generation of electricity

83,597.82

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

80.943

Unit

kg CO2e per GJ

Emissions 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

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

9,007.78

MWh fuel consumed for self-generation of electricity

3,340.62

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

77.643

Unit

kg CO₂e per GJ

Emissions 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

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

603,850.67

MWh fuel consumed for self-generation of electricity

223,943.91

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

77.643

Unit

kg CO2e per GJ

Emissions 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

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

7,923,445.12

MWh fuel consumed for self-generation of electricity

2,938,486.85

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

995.2775

Unit

kg CO₂e per GJ

Emissions 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

Fuels (excluding feedstocks)

Liquid Biofuel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4,645.37

MWh fuel consumed for self-generation of electricity

1,722.78

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

79.843

Unit

kg CO2e per GJ

Emissions 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

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

5,280,713.33

MWh fuel consumed for self-generation of electricity

1,958,404.01

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

56.1548

Unit

kg CO2e per GJ

Emissions 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

Fuels (excluding feedstocks)

Tires

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

279,647.19

MWh fuel consumed for self-generation of electricity

103,709.88

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

85

Unit

kg CO₂e per GJ

Emissions 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.

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

66,513.78

MWh fuel consumed for self-generation of electricity

24,667.28

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

74.343

Unit

kg CO₂e per GJ

Emissions 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

Fuels (excluding feedstocks)

Kerosene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,320.19

MWh fuel consumed for self-generation of electricity

489.6

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

72.143

Unit

kg CO₂e per GJ

Emissions 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

Fuels (excluding feedstocks)

Wood Waste

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4,614,452.34

MWh fuel consumed for self-generation of electricity

1,711,314.62

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

113.9

Unit

kg CO2e per GJ

Emissions 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

Fuels (excluding feedstocks)

Black Liquor

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

14,823,554.04

MWh fuel consumed for self-generation of electricity

5,498,094.35

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

95.914

Unit

kg CO₂e per GJ

Emissions 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

Fuels (excluding feedstocks)

Biogas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

65,340.83

MWh fuel consumed for self-generation of electricity

24,232.28

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-cogeneration or self-trigeneration

Emission factor

54.6545

Unit

kg CO₂e per GJ

Emissions 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

C8.2d

(C8.2d) 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	15,191,649.67	14,590,276.87	8,760,412.52	8,413,625.05
Heat	784,332.62	784,332.62	0	0
Steam	23,948,762.63	23,948,762.63	13,810,286.88	13,810,286.88
Cooling	0	0	0	0

C8.2e

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

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, not supported by energy attribute certificates

Low-carbon technology type

Hydropower

Country/region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed accounted for at a zero emission factor

138,836.11

Comment

Power supplier supplies 100% hydropower 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

0.05

Metric numerator

Tons

Metric denominator (intensity metric only)

Air dry ton saleable production

% change from previous year

8.52

Direction of change

Decreased

Please explain

Tons of landfilled solid waste per air dry ton of saleable production are tracked. Solid waste to landfill is decreased by increasing recycling, beneficiation and finding alternative uses for our waste streams. 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

377,422

Metric numerator

Tons

Metric denominator (intensity metric only)

Air dried ton saleable production

% change from previous year

9.41

Direction of change

Decreased

Please explain

Absolute tons of landfilled solid waste are tracked. Solid waste to landfill is decreased by increasing recycling, beneficiation and finding alternative uses for our waste streams.

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

Description

Waste

Metric value

9.57

Metric numerator

kg

Metric denominator (intensity metric only)

Air dry ton saleable production

% change from previous year

4.97

Direction of change

Increased

Please explain

Chemical oxygen demand (COD) in wastewater results in CO₂e emissions. COD in wastewater effluent is monitored per ton of saleable production. Saleable production includes paper, pulp and dissolving wood pulp.

Description

Energy usage

Metric value

22.84

Metric numerator

GJ

Metric denominator (intensity metric only)

Air dry ton saleable production

% change from previous year

1.76

Direction of change

Increased

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.

Description

Other, please specify
Process water

Metric value

34.17

Metric numerator

Cubic metres

Metric denominator (intensity metric only)

Air dried ton saleable production

% change from previous year

0.34

Direction of change

Decreased

Please explain

Process water consumption in m3 per tons of saleable production. Process water intensity decreased due to many water saving initiatives implemented due to drought conditions in South Africa.

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 emissions, and attach the relevant statements.

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

 Sappi 2019 Sustainability Assurance_Limited Assurance Report.pdf

Page/ section reference

Pages 1 - 4

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

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

Not applicable

Relevant standard

European Union Emissions Trading System (EU ETS)

Proportion of reported emissions verified (%)

37

C10.1b

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

Scope 2 approach

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

 Sappi 2019 Sustainability Assurance_Limited Assurance Report.pdf

Page/ section reference

Pages 1 -4

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

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 and Sappi Europe are 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

South Africa carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

36.57

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2019

Period end date

December 31, 2019

Allowances allocated

984,533

Allowances purchased

595,000

Verified Scope 1 emissions in metric tons CO₂e

1,599,637

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Not applicable

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Finland carbon tax

Period start date

January 1, 2019

Period end date

December 31, 2019

% of total Scope 1 emissions covered by tax

5.91

Total cost of tax paid

11,579,615

Comment

Sappi will get a refund of US\$1,140,502 in July 2020.

South Africa carbon tax

Period start date

June 1, 2019

Period end date

December 31, 2019

% of total Scope 1 emissions covered by tax

52.93

Total cost of tax paid

0

Comment

This carbon tax only needs to be paid in October 2020. The current estimate is US\$2,063,00. We are still awaiting carbon sequestration formulae which should reduce the above-mentioned liability.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

In 2019, Sappi established a working group to incorporate the recommendations of the Task Force on Climate-related Financial Disclosure to help us identify risks and opportunities and help inform our overall business strategy and planning.

On 04 June 2020, Sappi Limited committed to set science-based targets and joined the Science Based Targets initiative (SBTi). The SBTi is a collaboration between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). Committing to science-based targets means that our future emission reduction targets will be aligned with the Paris Agreement's objective to limit the increase in the global average temperature to well-below 2°C or 1.5°C.

This commitment marks an important next step in our ongoing decarbonization journey. It places Sappi within a group of ambitious corporate leaders who are serious about climate action and ensuring a sustainable future for all. It will indeed sharpen our focus, ambition and responsibility to get on a trajectory towards climate neutrality by 2050.

Sappi recognizes the science of climate change and acknowledges the role we need to play in reducing our emissions. In certain regions where we operate, we are experiencing strong regulatory pressures to decarbonize our operations. Additionally, within our markets, some customers are pursuing their own ambitious commitments and looking for us to do our part. Moving forward with the SBTi and Sappi's own climate action, will position our business for the future, making us more resilient and more sustainable.

Sappi has been placing increased strategic focus on decarbonization. Each region has established initial decarbonization plans and our mills are heavily invested in implementing projects like Vulindlela at Saiccor Mill, or analysing and preparing projects, plans and pathways to further reduce emissions.

Sappi's 2025 Sustainability Targets have now been set. Related to climate action, we have globally committed to a 17% reduction in specific GHG emissions (scope 1 & 2 combined), the first time that we have established a group wide GHG emissions reduction target.

Within the context of the Science Based Target initiative, we now have two years to work on setting and validating our science-based targets. This will give us precision for our longer-term targets like 2030 and 2050.

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?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

- Navigate GHG regulations
- Change internal behavior
- Drive low-carbon investment
- Stress test investments
- Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

Carbon pricing influences business decisions and company strategy. It is used in our capital project assessments and expenditure at all our operations, as well as in our energy budget process for the Sappi Southern Africa region.

Actual price(s) used (Currency /metric ton)

7.17

Variance of price(s) used

Differentiated pricing is used in Sappi where the internal price on carbon varies per region because there are different requirements and objectives in different regions. For Sappi Southern Africa, the internal carbon price is based on the South African carbon tax price.

Type of internal carbon price

Shadow price

Impact & implication

Decisions on capital projects take into account the carbon impact. There is an increased focus on energy efficiency measures and low-carbon initiatives.

Objective for implementing an internal carbon price

- Navigate GHG regulations
- Change internal behavior
- Drive energy efficiency
- Drive low-carbon investment
- Stress test investments
- Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

Carbon pricing influences business decisions and company strategy. It is used in our capital project assessments and expenditure at all our operations, as well as in our energy budget process for the Sappi Europe region.

Actual price(s) used (Currency /metric ton)

28.5

Variance of price(s) used

Differentiated pricing is used in Sappi Europe where the internal price on carbon varies per region because there are different requirements and objectives in different regions. For Sappi Europe, the internal carbon price is based on the European Trading System (ETS) market value.

Type of internal carbon price

Shadow price

Impact & implication

Decisions on capital projects & energy procurement are informed of and take into account carbon impact. There is an increased focus on energy efficiency measures and low-carbon initiatives.

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

Code of conduct featuring climate change KPIs

% of suppliers by number

2.6

% total procurement spend (direct and indirect)

58

% of supplier-related Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Our assessment of our carbon footprint shows a proportion of our carbon emissions lie in our supply chain. We are establishing a compliance verification programme for our suppliers across each region. It builds on the process we already have with our pulp suppliers to collect data and ensure responsible practices. Over the last year we have worked to get in place systems for suppliers to declare compliance with our Code of Conduct, which includes expectations around reducing emissions and increasing energy efficiency.

Impact of engagement, including measures of success

Currently we are focused on data collection from suppliers and compliance with our Code of Conduct, which includes climate related aspects. At this stage it is too early to measure an impact. But in the next phases of implementing our Code and engaging with suppliers more measures of success will be possible.

Comment

These numbers include Sappi SA and Sappi Europe.

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

2

% total procurement spend (direct and indirect)

14

% of supplier-related Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Sappi is engaging with our pulp suppliers in EU and SA to collect environmental data annually to ensure responsible practices and include emissions from the entire value chain. This data is used in our paper profiles which are shared with our customers upon request. Although all emissions from purchased pulp are included in Scope 3 emissions, secondary emission factors are used.

Impact of engagement, including measures of success

Sappi is planning to further intensify our efforts to engage with more suppliers, collecting primary environmental data to increase Scope 3 accuracy and ensure responsible practices in our supply chain.

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

% of customer - related Scope 3 emissions as reported in C6.5

0

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 quests, in Europe and South Africa, we publish Paper Profiles and information sheets for our papers. We also respond to many questionnaires from our customers that collect data on our CO2 reduction plans and performance. In North America, we hold Customer Council meetings and 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, both of which include climate-related questions. We also publish as FAQs covering topics like climate change and forest and energy certification.

Impact of engagement, including measures of success

The impact of this engagement has been in raising customer awareness about climate change and giving them the ability to evaluate their own carbon footprint. In all three regions, we were awarded a Gold Recognition Level in sustainability performance in

FY2019 by independent rating agency EcoVadis, placing us in the top 5% of 30,000 companies

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

Product development

% of customers by number

1

% of customer - related Scope 3 emissions as reported in C6.5

0

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

Sappi is a leading supplier of innovative paper-based packaging solutions with integrated barrier functionality and excellent heat-sealing properties. These innovative papers for flexible packaging come with integrated barriers against oxygen, water vapour, grease, aroma and mineral oil. Thanks to the integrated barriers, there is no need to apply special coatings or laminations. This innovative paper responds to market demand for alternatives to foils and plastic. As well as lowering costs, it also reduces environmental impact – important for manufacturers who are looking for more sustainable packaging.

Impact of engagement, including measures of success

Sappi collaborated closely with the world's largest food and beverage company, Nestlé to support the launch of the YES! snack bar wrapped in recyclable paper. Sappi worked in partnership with Nestlé and packaging supplier, Constantia Flexibles to develop solutions suitable for recyclable paper production processes.

C12.1d

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

In FY2019 we were a participant in Trado, a consortium including the Cambridge Institute for Sustainability Leadership that is testing blockchain technologies. The Trado model was piloted with smallholder tea farmers in Malawi, showing how sustainability in end-to-end supply chains can look at every aspect from the tea farmers' products right down to the product packaging sitting on supermarket shelves. The tea farmers were offered a financial incentive in return for feeding social or ecological data into the blockchain. An innovative blockchain structure, enabling traceability, has been developed into a blueprint for replication, development and experimentation in other contexts. Sappi

ensured that alongside the product, that sustainable paper packaging also carried with it the very same principle ensuring the complete product package has the same traceability throughout. The Trado model could potentially pay for some of the investment needed to establish traceability across supply chains, although further investigation is needed to scope the model's ability to do this while benefitting smallholders.

Sappi is also an active participant in PROVIDES (PROcesses for Value added fibres by Innovative Deep Eutectic Solvents). This is a research and innovation project within the European Biobased Industries Initiative. Its goal is to significantly reducing CO2 emissions in pulp and papermaking. New, mild pulping technologies based on natural DESs lead to a significantly more sustainable process that is energy-, cost- and resource-effective, while producing much lower CO2 emissions. Specifically, the project aims to achieve an 80% reduction of CO2 emissions and at the same time create 50% more value.

In FY2019 we joined the Sustainable Apparel Coalition and are using its sustainability measurement suite of tools, the Higg Index, to drive environmental and social responsibility throughout our supply chain. With this membership, we join over 240 global brands, retailers and manufacturers, as well as government, non-profit environmental organisations and academic institutions that are collectively committed to improving supply chain sustainability in the apparel, footwear and textile industry

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 44 members in the scheme with plantations ranging from less than a hundred hectares to several thousand hectares. While our own plantations are 100% FSC-certified, 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. Sappi participated in the development of this scheme, now known as the South African Forest Assurance Scheme (SAFAS.) [Subsequently the Sustainable African Forestry Assurance Scheme.]

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, in South Africa we have established training centres known as Khulisa Ulwazi ('Growing Knowledge') and developed training material in conjunction with the Institute of Natural Resources. Training, which 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.

Management practice reference number

MP2

Management practice

Biodiversity considerations

Description of management practice

Biodiversity is underpinned by ecosystem services including, amongst others, air quality and climate change mitigation. Biodiversity aspects are included in forest certification – one of the reasons why we consider it important to maintain high levels of certification and to promote certification wherever possible. We also work with growers to implement best forestry management practices.

Your role in the implementation

Knowledge sharing

Operational

Procurement

Explanation of how you encourage implementation

We promote biodiversity through certification and forestry management services.

Certification: At a group level, 75% of woodfibre supplied to our operations is certified and all wood is verified as meeting the FSC Controlled Wood standards at a minimum. In South Africa, we have established a group forest certification scheme for small- and medium-sized growers. While our own plantations are 100% FSC-certified, 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. We participated in the development of this standard, now known as the South African Forest Assurance Scheme (SAFAS.) [Subsequently the Sustainable African Forestry Assurance Scheme.]

Forestry management assistance: In North America, the Sappi Maine Forestry Program and the Sappi Lake States Private Forestry Program assist forest landowners to meet their objective for managing their woodland. Sappi's trained foresters monitor the implementation of best management practices on harvest sites to ensure adequate regeneration, conservation of biodiversity, soil and water resources, as well as adherence to the harvest plan(s).

In South Africa, qualified extension officers work with growers in our Sappi Khulisa enterprise development programme to advise them on best practice land management.

Climate change related benefit

Increasing resilience to climate change (adaptation)

Increase carbon sink (mitigation)

Comment

The Sappi's Lake States Private Forestry Program worked collaboratively with the Minnesota Department of Natural Resources (DNR) to save DNR operating and administrative costs while benefiting wildlife on a wildlife management area by employing summer harvest techniques. The team was recognized by Bureau Veritas for their impressive and outstanding outreach programme.

Management practice reference number

MP3

Management practice

Diversifying farmer income

Description of management practice

The forests and plantations from which we source woodfibre help mitigate global warming by acting as carbon sinks. In South Africa, the total area managed under our Sappi Khulisa enterprise development programme is just over 34,000 hectares. While we provide growers in the scheme with interest-free loans, timber farmers must wait seven or eight years between timber harvests for a return on their investment.

Your role in the implementation

Financial
Knowledge sharing
Operational

Explanation of how you encourage implementation

Sappi has partnered with institutions such as Cedara Agricultural College, to provide the growers with the tools to expand their farming activities so that they can have additional sources of income. In addition, we encourage growers to diversify into honey production through the African Honey Bee project, whereby we make certain plantations available for bee-keeping and also sponsor training and equipment.

Climate change related benefit

Increasing resilience to climate change (adaptation)
Increase carbon sink (mitigation)

Comment

In FY 2019, the African Honey Bee project was honoured with Community Chest Impumelelo Social Innovation Award in the community development category, winning the innovation income generation section.

Management practice reference number

MP4

Management practice

Pest, disease and weed management practices

Description of management practice

Pest and disease management experts will visit any private grower that reports pest and disease issues to Sappi North America. There is now also functionality on the Forecelink cellphone app to log pest and disease issues

Your role in the implementation

Knowledge sharing

Explanation of how you encourage implementation

Samples will be collected for identification (if the problem cannot be identified in-field). Growers are advised on management strategies to minimise loss through control methods or species choice for new plantings

Climate change related benefit

Emissions reductions (mitigation)
Increase carbon sink (mitigation)

Comment

Management practice reference number

MP5

Management practice

Other, please specify
Provision of planting material

Description of management practice

Traditional tree breeding is a relatively slow process and in order to keep up with environmental changes, Sappi Forests' 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. In addition, 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 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. We also provide advice to growers on which species to plant through field days and individual consultations.

Your role in the implementation

Financial
Knowledge sharing

Operational

Explanation of how you encourage implementation

Our suppliers benefit from our tree improvement programmes as we provide them with genetically improved (not genetically modified) planting material in the form of seedlings and cuttings. This is supplied free of charge to growers in our Sappi Khulisa enterprise development programme.

Climate change related benefit

Increasing resilience to climate change (adaptation)
 Increase carbon sink (mitigation)

Comment**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
 Other

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
Carbon tax	Support with major exceptions	While Sappi recognises the need to reduce fossil fuel usage in South Africa, the country urgently needs to promote socio-economic development and enhance competitiveness. Carbon tax, which came into effect in 2019, poses a potential risk to such growth and competitiveness. We engaged	We believe there should be greater recognition of the positive carbon sequestration impact of plantation forestry in South Africa, particularly in view of the fact that forestry only uses 3% of available water, as opposed to agriculture, which uses approximately 60%.

		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.	
Other, please specify Climate Policy Principles	Support	SNA is a member of the trade association the American Forest & Paper Association (AFPA). We have representatives on the Environmental Policy Committee. Recently the AFPA began to update the Climate Policy Principles position paper. SNA has taken an active role in the rewrite of this paper.	As an energy intensive industry that uses biomass for its products but also for its energy supply, we recognize the importance for the need of science based climate policy and the value of biomass as carbon neutral option. We seek to educate policy makers on this point as well as the important role that sustainably managed forests (vs non managed forests) play in the mitigation of GHG emissions. The role of carbon storage in harvested wood products must also be adequately assessed using the best available science.
Clean energy generation	Support with minor exceptions	Sappi Europe provided comments to the industry input that was handed in via CEPI.	The European Green Deal is a set of policy initiatives by the European Commission with the overarching aim of making Europe climate neutral in 2050
Other, please specify Trillion Trees legislation	Support	SNA was approached by the Minnesota Forest Industry Trade Association seeking advice as to whether the Association should support the proposed Trillion Trees Act. We reviewed the bill internally and agreed that this was a climate positive initiative that we should encourage the trade association to support, which they did.	The US Trillion Trees Act is based on a July 2019 Swiss report featured by the American Academy for the Advancement of Science that concluded planting 1 trillion trees across the world could sequester 205 gigatonnes of carbon. The bill has three parts: <ul style="list-style-type: none"> • Plant more trees in urban areas and on marginal agriculture land domestically while offering technical support and assistance for other countries to maximize forest growth internationally and reverse deforestation. • Grow more wood in existing

			forests and make them more resilient to insects, diseases and catastrophic wildfires. <ul style="list-style-type: none"> • Store more carbon by incentivizing innovative building practices with a sustainable building tax credit.
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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

CO₂ is removed from the atmosphere in very large quantities and stored in growing forests. The carbon eventually circulates back into the atmosphere to close the loop. Part of this carbon is stored, for a longer or shorter period, in a variety of forest products before re-entering the natural biogenic carbon cycle. European forest resources continue to expand both in standing volume and annual growth, which may offer further potentials.

Forest products have a very low climate footprint and moreover they reduce demand for products and energy that are based on fossil fuels. This prevention of fossil emissions, or substitution effect, is well known but has not previously been visualized and quantified at the European level. Existing climate reporting and climate policies are not structured to highlight such cross-sectoral effects.

The total assessed climate effect of -806 MtCO₂ e in one year corresponds to 20 % of all fossil emissions in the European Union. About half is due to increased carbon storage in forests and forest products – this part is clearly visible in existing climate reporting. The existing climate reporting doesn't take into account the other half, which corresponds to the fossil emissions prevented through substitution. Looking at the forest-based sector across conventional UNFCCC reporting structures reveals a much

higher positive climate effect than if the forest is assessed in isolation as a set of carbon pools. It is necessary to have this overall approach to understand the sector's true impact and it makes the case for the forest-based sector to be regarded as one integrated system called "the circular bioeconomy".

How have you influenced, or are you attempting to influence their position?

Sappi supports CEPI's position

Trade association

Society of American Foresters

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Society of American Foresters (SAF) promotes and supports science-based policies and actions that consistently recognize the positive role that forest management plays in: (1) mitigating greenhouse gas (GHG) emissions through the sequestration of atmospheric carbon in resilient, well-managed forests (trees and soil), producing wood-based products to replace both non-renewable materials and fossil fuel-based energy sources; and (2) adapting to future climate patterns through active forest management that reduces the risk of stand-replacing wildfire and other climate-driven disturbance emissions and avoids land-use changes from forests.

How have you influenced, or are you attempting to influence their position?

This policy was scheduled to be updated per SAF protocol. We helped to rewrite and expanded the discussion on the role that trees play in sequestering carbon as well as store carbon, both as a living tree as well as a wood product. In addition, we clarified the difference between mitigation and adaptation. The final document can be found here - https://www.eforester.org/Main/Issues_and_Advocacy/Statements/Forest_Management_and_Climate_Change.aspx

C12.3d

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

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

1) Sappi has been a signatory to the United Nations Global Compact since 2008 and annually reports on progress in terms of the 10 principles. In addition, we have developed action plans to incorporate seven global priority SDGs where we can make the biggest impacts, either by increasing our positive contribution or by reducing our negative impacts. Our global priority SDGS are SDG6: Clean water and sanitation;

SDG7: Affordable and clean energy; SDG8: Decent work and economic growth; SDG12: Responsible Consumption and production; SDG13: Climate action; SDG15: Life on land and SDG17: Partnerships for the goals. As South Africa is a developing country, we have identified two further priority SDGS in this region: SDG1: No poverty and SDG4: Quality education.

2) The Greenhouse Gas Protocol launched a process to develop new standards and guidance on how companies account for and report the following activities in their greenhouse gas inventories:

- Carbon removals and storage
- Land use
- Land use change
- Bioenergy

A member of the Sappi Forests Research team has been working with the World Resources Institute on the GHG Protocol Carbon Removals and Land Sector Initiative Project. The land sector technical working group will develop guidance on:

- Types of emissions, removals and sequestration within the land sector
- Carbon emissions and removals from land use (e.g., forest management, crop and livestock production, bioenergy feedstock production, soil carbon, etc.)
- Carbon emissions and removals from land use change (e.g., deforestation, afforestation, wetland conversion, etc.)
 - o Direct and indirect land use change and related impacts from changes in production
- Agricultural GHG emissions (e.g., livestock methane emissions, soil nitrous oxide emissions, etc.)
- Biogenic removals and temporary to long-term storage in biogenic products/materials (e.g., furniture, building materials, etc.)
- Biogenic carbon dioxide emissions and removals from bioenergy production and consumption (e.g., biomass, biofuels, biogas)
- Land sector accounting approaches
 - o Use of land-based vs. activity-based accounting methods
 - o Addressing the timing of removals and emissions
 - o Separate biogenic carbon emissions and removals accounting vs. bringing biogenic emissions and removals into scopes 1, 2 and 3
- Quantification methods and data sources; reporting requirements; target setting and tracking changes over time; alignment with or revisions to other GHG Protocol standards and guidance.

3) Climate legislation On June 26, 2019, the Governor and Legislature created the Maine Climate Council, an assembly of scientists, industry leaders, bipartisan local and state officials, and engaged citizens to develop a four-year plan to put Maine on a trajectory to reduce emissions by 45% by 2030 and at least 80% by 2050. By Executive Order, the state must also achieve carbon neutrality by 2045.

<https://climatecouncil.maine.gov/strategies> The Energy Manager for Sappi North America Somerset Maine mill was invited to be a member of the Council. This individual also serves on the Transportation Working Group.

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?

The Group Head: Corporate Affairs is a member of the Social Ethics Transformation and Sustainability (SETS) committee and liaises with the Group Head: Investor Relations and Sustainability, as well as the regional sustainability head regarding direct activities that influence policy. At the Regional Sustainable Development Councils (Europe, North America and South Africa), Global Sustainable Development Council, as well as the SETS and Risk and Audit 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 with management and EXCO to ensure our positions are consistent with our overall climate strategy.

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 2019 annual integrated report.pdf

Page/Section reference

Pages 33,37,40 68-70,

Content elements

Strategy
Risks & opportunities
Other metrics

Comment

C13. Other land management impacts

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

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

Yes

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

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

Management practice reference number

MP1

Overall effect

Positive

Which of the following has been impacted?

Biodiversity

Soil

Water

Description of impact

In South Africa, Sappi owns and leases 390,000 ha of land, of which 135,000 ha are maintained by Sappi Forests to conserve the natural habitat and biodiversity found there. Of this permanently unplanted land, the majority consists of open areas with natural vegetation cover which are managed for conservation purposes. Our strategies for managing biodiversity include: managing natural vegetation according to best practice in terms of burning, grazing and weed control to ensure health habitats; ongoing assessment and monitoring of veld condition; protection of sites from poaching, illegal medicinal plant collection and overgrazing; as well as 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 listed 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.

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

Yes

Description of the response(s)

The area covered by natural vegetation is managed according to best practice with respect to fire management, weed control, poaching and grazing by livestock in order to maintain healthy natural habitats for biodiversity conservation. This land consists of a network of riparian zones, wetlands, mountain tops, rocky areas, steep slopes and some areas especially set aside for the protection of critically endangered species. Using systematic conservation planning to assess and prioritise the conservation worthiness of this land we have identified 7 areas of national and international importance that have been formally declared as Nature Reserves. Another 166 sites have been classified as Important Conservation Areas (ICA's) and receive special management according to management plans that have been drawn up using specialist conservation advice. Most of these areas have been surveyed for listed threatened ecosystems and for rare, threatened and endangered (RTE) species. Their importance and contribution to national conservation targets is therefore known and recognised. Management of these sites include implementing the correct burning programmes (timing and frequency of burns), ensuring that they are weeded to prevent infestations of invasive alien plants, protected from poaching (hunting and medicinal plant collection) and if they are grazed by domestic stock or wild animals, on overgrazing takes place.

Every year the condition of all areas are assessed and management adjusted if and where needed. Many of the RTE species present at the sites are monitored annually. Water quality for stream health (aquatic biodiversity) is monitored in many of the streams and rivers. The areas under restoration are sites from which forestry operations and plantations have been withdrawn, mainly to conserve water. These areas are being restored to natural habitats.

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.

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. * Logging site planning which identifies the key elements for biodiversity that must be considered during harvesting operations.

In North America, written stumpage and wood supply agreements include requirements to comply with applicable laws, including the use of Best Management Practices (BMPs) to ensure that wood procurement operations adapt appropriately to seasonal adverse weather conditions and other weather events to ensure that soil productivity and water quality resources are protected. A key procurement provision is to build inventory at the mill during the winter months to avoid logging activities during the spring break-up / mud season. SNA also specifies that wetlands and other wet areas be logged when soils are in a frozen condition. Stipulations include: * Supervision, inspection and adequate documented occurs on all Sappi stumpage operations, including monitoring and enforcement of BMP guidelines appropriate to the site. Similar inspections are conducted on a risk-based sampling of open-market sales from which SNA procures wood/chips. * Action to protect threatened and endangered species, as required by state and federal law. SNA goes further to identify and mitigate or avoid adverse

impacts on Forests with Exceptional Conservation Value (FECV), which includes areas identified by NatureServe with a G1 (Globally Critically Imperilled) or G2 (Globally Imperilled) ranking for species and native plant communities. SNA also utilises regional risk assessment and site-specific data from credible scientific agencies/organisations to identify and mitigate for broader biodiversity risks in sourcing activities

C15. 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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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

SC. Supply chain module

SC0.0

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

Sappi Europe (SEU) is the largest fine paper producer in Europe and one of the largest publication and speciality paper manufacturers. SEU operates six paper mills and one speciality 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 FY2019, SEU produced 50% 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	5,746,000

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

Bank of America

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

434

Uncertainty (±%)

5

Major sources of emissions

Combustion of fuels at our own power plants.

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

Requesting member

Bank of America

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Emissions from purchased power are allocated equally per ton product.

Emissions in metric tonnes of CO₂e

128

Uncertainty (±%)

5

Major sources of emissions

Purchased power.

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

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

Requesting member

Bank of America

Scope of emissions

Scope 3

Allocation level

Commodity

Allocation level detail

Emissions in metric tonnes of CO₂e

713

Uncertainty (±%)

30

Major sources of emissions

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

Verified

No

Allocation method

Allocation based on mass of products purchased

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

We follow the guidance and methodology from a third party consultant Quantis.

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 of product at each mill.

Emissions in metric tonnes of CO₂e

2,003

Uncertainty (±%)

5

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

These figures are based on the externally verified calculations that are also used to calculate the EU ETS carbon credits.

Requesting member

L'Oréal

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Emissions from purchased power are allocated equally per ton of product.

Emissions in metric tonnes of CO₂e

3,128

Uncertainty (±%)

5

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

Emissions in metric tonnes of CO₂e

1,252

Uncertainty (±%)

30

Major sources of emissions

Manufacturing of raw materials: market pulp, fillers, pigments, binders and starch.
Upstream and downstream emissions, including transport to a customer.

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

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. We mostly use database values for CO₂ factors.

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

19,286

Uncertainty (±%)

5

Major sources of emissions

Fuels combusted at the mill 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

These figures are based on the externally verified calculations that are also used to calculate the EU ETS carbon credits.

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

9,483

Uncertainty (±%)

5

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

Philip Morris International

Scope of emissions

Scope 3

Allocation level

Commodity

Allocation level detail

Emissions in metric tonnes of CO₂e

8,546

Uncertainty (±%)

30

Major sources of emissions

Manufacturing of raw materials: market pulp, fillers, pigments, binders and starch.
Upstream and downstream emissions.

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

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. We mostly use database values for CO₂ factors.

Requesting member

JT International SA

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Combusted fuels allocated evenly to all products manufactured at the mill.

Emissions in metric tonnes of CO₂e

975

Uncertainty (±%)

5

Major sources of emissions

Fuels combusted at the power plant at the mill.

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

These figures are based on the externally verified calculations that are also used to calculate the EU ETS carbon credits.

Requesting member

JT International SA

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Purchased power emissions allocated evenly to all products at the mill.

Emissions in metric tonnes of CO₂e

1,404

Uncertainty (±%)

5

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

JT International SA

Scope of emissions

Scope 3

Allocation level

Commodity

Allocation level detail

Emissions in metric tonnes of CO2e

805

Uncertainty (±%)

30

Major sources of emissions

Manufacturing of raw materials: market pulp, fillers, pigments, binders and starch.
Upstream and downstream emissions, including transport to a customer.

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

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. We mostly use database values for CO2 factors.

SC1.2

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

No published information has been used

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	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.	customer supplied consumption data would help.
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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.

Requesting member

Philip Morris International

Group type of project

New product or service

Type of project

New product or service that has a lower upstream emissions footprint

Emissions targeted

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

Estimated timeframe for carbon reductions to be realized

0-1 year

Estimated lifetime CO2e savings

Estimated payback

1-3 years

Details of proposal

Always happy to discuss our new products and services

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 2020-2021 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Yes, I will provide data

SC4.1a

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

80

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

Name of good/ service

Algro Design

Description of good/ service

SBB

Type of product

Intermediate

SKU (Stock Keeping Unit)

ton

Total emissions in kg CO₂e per unit

1,406

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

Name of good/ service

Fusion

Description of good/ service

Topliner

Type of product

Intermediate

SKU (Stock Keeping Unit)

Ton

Total emissions in kg CO₂e per unit

831

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

Name of good/ service

Leine Muehle

Description of good/ service

Uncoated flexpack

Type of product

Intermediate

SKU (Stock Keeping Unit)

Ton

Total emissions in kg CO₂e per unit

1,444

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

Name of good/ service

Algo Fin
Algro Fin TO
Algro Finess
Algro Finess H
Algro Finess T
Royal Poncho A

Description of good/ service

Coated flexpack

Type of product

Intermediate

SKU (Stock Keeping Unit)

Ton

Total emissions in kg CO₂e per unit

1,432

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

Name of good/ service

Magno Volume

Description of good/ service

Manufactured in Gratkorn

Type of product

Intermediate

SKU (Stock Keeping Unit)

ton

Total emissions in kg CO₂e per unit

795

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

Name of good/ service

Magno Volume

Description of good/ service

Manufactured in Stockstadt

Type of product

Intermediate

SKU (Stock Keeping Unit)

ton

Total emissions in kg CO₂e per unit

1,391

±% change from previous figure supplied

Date of previous figure supplied

Explanation of change

Methods used to estimate lifecycle emissions

SC4.2b

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

Name of good/ service

Fusion Topliner

Please select the scope

Scope 1

Please select the lifecycle stage

Production

Emissions at the lifecycle stage in kg CO2e per unit

139

Is this stage under your ownership or control?

Yes

Type of data used

Primary

Data quality

High

If you are verifying/assuring this product emission data, please tell us how

Covered by ISO 50 001

SC4.2c

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

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
Algro Design Nature		Reduction of Scope 2	Planned	350

SC4.2d

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

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms