C0. Introduction

C0.1

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

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

We create value through six streams:

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

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

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

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

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

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

Manufacturing operations are located in North America, Europe and South Africa, where the company also owns and leases 387,291 hectares of 100% FSC-certified plantations with access to a further 129,000ha of plantations. Globally we have 12,645 employees.

In FY2018, production included:

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

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

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

C0.2

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

<table>
<thead>
<tr>
<th>Start date</th>
<th>End date</th>
<th>Indicate if you are providing emissions data for past reporting years</th>
<th>Select the number of past reporting years you will be providing emissions data for</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 1 2017</td>
<td>September 30 2018</td>
<td>Yes</td>
<td>3 years</td>
</tr>
</tbody>
</table>

CDP
(C0.3) Select the countries/regions for which you will be supplying data.
Austria
Belgium
Finland
Germany
Netherlands
South Africa
United States of America

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

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

(C-AC0.6/C-FB0.6/C-PF0.6) 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?

<table>
<thead>
<tr>
<th>Agricultural/Forestry</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both own land and elsewhere in the value chain (Agricultural/Forestry only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processing/Manufacturing</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both direct operations and elsewhere in the value chain (Processing/manufacturing/Distribution only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both direct operations and elsewhere in the value chain (Processing/manufacturing/Distribution only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consumption</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (Consumption only)</td>
</tr>
</tbody>
</table>

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

Agricultural commodity
Timber

% of revenue dependent on this agricultural commodity
More than 80%

Produced or sourced
Both

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

C1. Governance

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

C1.1a
Position of individual(s) | Please explain
--- | ---
Other, please specify (Board chair) | Chairman of the Social, Ethics, Transformation and Sustainability Committee, a fully constituted board committee. This responsibility, to some extent, also extends to the Chairman of the Audit and Risk Management Committee who has oversight of the risk management function, given that climate change is a risk.

C1.1b

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

| Frequency with which climate-related issues are a scheduled agenda item | Governance mechanisms into which climate-related issues are integrated | Please explain |
--- | --- | ---
Scheduled – some meetings | Reviewing and guiding strategy of action | The Social, Ethics, Transformation and Sustainability (SETS) Committee, a fully constituted Board Committee, has overall responsibility for climate change-related issues. The SETS Committee convened three times in 2018. The reporting structure is as follows: Regional Sustainable Councils (RSCs), in Europe, North America and South Africa, are responsible for establishing and implementing on-the-ground strategy regarding climate change issues. The RSCs report to the Group Sustainable Development Council (GSDC) which is chaired by the Group Head: Investor Relations and Sustainability. The GSDC reviews key trends and developments together with strategy and implementation and makes recommendations which are fed through to the SETS committee. |

C1.2

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

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

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Group Head Technology reports directly to the CEO. This individual is responsible for overseeing: • Climate-change related research, such as the group’s tree improvement research which focuses on improving the sustainable supply of woodfibre • Research related to the reduction of greenhouse gas (GHG) emissions as well as more efficient water usage—particularly important in South Africa, where climate change is putting pressure on freshwater resources • Expansion projects where climate-related issues such as energy efficiency, decreased energy usage and a reduction in GHGs are always a consideration * The work of the E4 cluster, a global team tasked with ensuring consistency and accuracy of environmental metrics. Responsibility has been allocated to this individual because of their expertise in engineering, research, manufacturing and project execution as well as operational and risk management.

Sappi has manufacturing operations in three regions: Europe, North America and South Africa, The issues and regulations relating to climate change differ considerably across these regions. Accordingly, in each region, climate change related issues are monitored by the Regional Sustainability Councils and fed through to the Group Sustainable Development Council (GSDC) and ultimately to the Social Ethics Transformation and Sustainability (SETS) Board Committee. Should a group response to climate-related issues/ challenges be required, this would be formulated by the GSDC which is chaired by the Group Head: Investor Relations and Sustainability; with final direction given and responsibility allocated by the SETS Committee. In addition, the Global Risk Manager and Group Head of Technology present key risks on at least an annual basis to the Sappi Global-Executive Committee for review, The Group Technology Management Team, the Group Risk Management Teams and the Energy, Emissions, Environment and Effluents (E4) Cluster and Cluster 4.2 Technology, Equipment and Efficiency meet on average every three months to monitor and action specific business needs which may include subjects related to climate change initiatives.
C1.3

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

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?
Corporate executive team

Types of incentives
Monetary reward

Activity incentivized
Energy reduction target

Comment
The Management Incentive Scheme (MIS) for the management group and regional board of directors of the SA mills are linked to Sappi Southern Africa’s sustainability performance in terms of energy reduction against a set target.

C2. Risks and opportunities

C2.1

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

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

C2.2

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

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

C2.2a

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

<table>
<thead>
<tr>
<th>Frequency of monitoring</th>
<th>How far into the future are risks considered?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six-monthly or more frequently</td>
<td>16 years</td>
<td>The Global Risk Manager and Group Head Technology Cluster reviews and presents the Group key risks, including climate change-related risk on at least an annual basis to the Sappi Global Executive Team which in turn reports regularly on these risks to the Audit Committee and the Board. This timeframe aligns with in line with management accounting’s forecast plans. The timeline also takes into account the time frames set out in the Paris Agreement in terms of the following ambitions: 2023 Global Stocktake plan and 2025 New National Climate Plans.</td>
</tr>
</tbody>
</table>

C2.2b
The Sappi group has an established culture of managing key risks. There are a significant number of embedded processes, resources and structures in place to address risk management requirements. These range from internal and external audit systems, insurance, IT security, compliance and governance processes, quality management and a range of other line management interventions. In the broadest sense, effective risk management ensures continuity of operations, service delivery, achievement of objectives (strategic and otherwise), and the protection of the interests of the group. To achieve objectives, the risk management process is aligned with and compatible with Sappi’s strategy, taking into account the recommendations set out in ISO 31000 standard (for guidance only) ‘Risk management – Principles and guidelines’, as well as King IV.

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

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

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

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

While our business is wholly dependent on woodfibre, given SEU’s general risk mitigation strategy of sourcing pulp and woodfibre from a variety of sources and regions, we do not anticipate any material impact to raw material supply from climate change in the short to medium term. In SNA, our operations do not currently face material risks associated with climate change. With the exception of fibre from Brazil for Westbrook Mill, we source from northern hardwood and softwood wood baskets that have not suffered under any drought conditions or from fire. However, the situation is different in Southern Africa, where Sappi Forests owns and leases 387,000 ha of land, with contracted supply covering a further 129,000 ha. Climate change has already impacted some of our plantations and has the potential to significantly impact our woodfibre base. Accordingly, we invest in world-class tree improvement programmes to mitigate the risk, beginning with understanding where the largest risks of climate change will be to Sappi, how climate is likely to change further into the future and to formulate a multi-pronged response which involves, amongst other things:

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

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

Our tree improvement programmes represent an opportunity for competitive advantage.
Which of the following risk types are considered in your organization’s climate-related risk assessments?

<table>
<thead>
<tr>
<th>Risk Type</th>
<th>Relevance</th>
<th>Inclusion</th>
<th>Please Explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current regulation</td>
<td>Relevant, always included</td>
<td>In terms of current regulation, we continue to monitor the situation regarding carbon taxes in each region where we operate. In North America, carbon taxes do not appear to be an imminent risk. In Europe, carbon tax in Finland has been in place since 1990 and has been in place since 1990 and is in effect in all European operations. In South Africa, through the Paper Manufacturers’ Association of South Africa (PAMSA), we engaged with National Treasury on the development of carbon tax which has now been implemented. In each region where we operate, carbon sequestration by our plantations and forests from which we source woodfibre offers a potential buffer against possible carbon taxes. There are ongoing regulation reviews on this subject. Current regulation whereby reserves of good quality wood are being used to produce energy, with government subsidies supporting the practice is an issue. Pulp &amp; paper production in the industry could create 9.5 times more added value and more than six times more jobs than burning wood for bioenergy only.</td>
<td></td>
</tr>
<tr>
<td>Emerging regulation</td>
<td>Relevant, sometimes included</td>
<td>In Europe, we are monitoring the situation in terms of emerging regulations which is dynamic, with certain member states such as the Netherlands considering the development of an additional carbon tax to support the EU target of net zero GHG emissions and carbon neutrality by 2050.</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Relevant, sometimes included</td>
<td>We make ongoing technology investments. With a strong focus on innovation and R&amp;D, Sappi is committed to developing new processes and biomaterials which extract more value from each tree and support our business strategy to move into new and adjacent markets. As we experience a changing climate in our operations and source of woodfibre we are intensifying our focus on climate research. Our world-leading tree improvement programmes which focus, amongst other things, on mitigating the impacts of climate change, are a core pillar of our competitive advantage.</td>
<td></td>
</tr>
<tr>
<td>Legal</td>
<td>Relevant, sometimes included</td>
<td>Legal aspects are considered under “regulation” and “emerging regulation.”</td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td>Relevant, sometimes included</td>
<td>Consumers are looking for products with lower carbon footprint. We have expanded our portfolio of lightweight speciality and packaging grades to meet this need.</td>
<td></td>
</tr>
<tr>
<td>Reputation</td>
<td>Relevant, sometimes included</td>
<td>Many consumers erroneously equate deforestation with pulp and paper companies like Sappi. This is mitigated by responsible sourcing activities: Globally, 75.2% of fibre supplied to our mills is certified. In Europe, North America and Southern Africa, the percentage of certified fibre in FY2018 was respectively 78%, 58% and 82.2%. The balance is procured from known and controlled sources. In South Africa and North America, Sappi works with landowners to increase certification. In South Africa, 100% of Sappi’s owned and leased plantations are FSC-certified for Forest Management.</td>
<td></td>
</tr>
<tr>
<td>Acute physical</td>
<td>Relevant, sometimes included</td>
<td>Drought and fire risk, which are exacerbated by climate change, are an ongoing risk.</td>
<td></td>
</tr>
<tr>
<td>Chronic physical</td>
<td>Relevant, always included</td>
<td>Climate change could also cause the spread of disease and pestilence into our plantations and fibre sources, far beyond their traditional geographic spreads, increasing the risk that wood supply necessary to our operations may be negatively impacted.</td>
<td></td>
</tr>
<tr>
<td>Upstream</td>
<td>Relevant, always included</td>
<td>The availability of harvested timber may be limited by factors exacerbated by climate change such as fire, insect infestation, disease, ice and wind storms, droughts, floods and other natural and man-made causes, thereby reducing supply and increasing prices.</td>
<td></td>
</tr>
<tr>
<td>Downstream</td>
<td>Relevant, sometimes included</td>
<td>Outbound transportation and distribution services that are paid for by Sappi are included in the upstream transportation and distribution because the reporting company purchases the service. It is assumed that Sappi pays for all outbound transportation, and therefore the emissions are included in “Upstream transportation and distribution” category.</td>
<td></td>
</tr>
</tbody>
</table>
(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

**Identifier**
Risk 1

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

**Risk type**
Physical risk

**Primary climate-related risk driver**
Chronic: Changes in precipitation patterns and extreme variability in weather patterns

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

**Company-specific description**
In South Africa, drought and pest infestations are potentially exacerbated by climate change as well as changing the species distribution. Sappi's exposure to climate change related risk in South Africa which is expected to be more severely impacted by climate change than any of the other regions in which we operate, is moderated by the diversity of commercial species and hybrids deployed across a wide range of climatic conditions. Sappi continually monitors and reviews forest best practices in the light of changing environmental factors, thus helping to mitigate any increased threat from water shortages or drought. Our mitigation activities in this area include: * Maintaining wide genetic variability in planting material. This enables Sappi to breed trees for a wide range of conditions and the rate of change in conditions is probably slow enough for the company to respond in the breeding programme. In other words, we will produce better trees as conditions change. * Measuring permanent sample plots measured annually (eucalypts) or bi-annually (pines) to determine the effect of drought on current annual increment as an input to long-term planning. * Implementing extensive planting of more drought-tolerant eucalypt hybrids. * Engaging in research and collaboration with industry and tertiary institutions to develop bio-control measures and breed genetically more resistant planting stock. These actions mean that this risk is also an opportunity.

**Time horizon**
Current
Likelihood
Virtually certain

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
13462968.75

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

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

Cost of management
3700000

Comment
This amount reflects Sappi Forests’ research budget.

---

Identifier
Risk 2

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

Risk type
Physical risk

Primary climate-related risk driver
Chronic: Changes in precipitation patterns and extreme variability in weather patterns

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

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

Time horizon
Current

Likelihood
Virtually certain

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
178500

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The amount given here represents a surcharge

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

Cost of management
178500

Comment
**Risk type**
Physical risk

**Primary climate-related risk driver**
Chronic: Other

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

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

**Time horizon**
Current

**Likelihood**
About as likely as not

**Magnitude of impact**
Medium-high

**Are you able to provide a potential financial impact figure?**
No, we do not have this figure

**Potential financial impact figure (currency)**
<Not Applicable>

**Potential financial impact figure – minimum (currency)**
<Not Applicable>

**Potential financial impact figure – maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
Not possible to quantify

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

**Cost of management**
1637538

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

---

**Risk type**
Physical risk

**Primary climate-related risk driver**
Chronic: Other

**Type of financial impact**
Write-offs and early retirement of existing assets (e.g., damage to property and assets in “high-risk” locations)

**Company- specific description**
Fire is an ever-present, immediate and ongoing risk. While, the Southern African landscape is prone to, and ecologically adapted to, frequent fires, the risk of uncontrolled fires entering and burning significant areas of plantation is high. In 2017 and 2018, Southern Africa experienced a number of abnormal weather events (hot, dry conditions fanned by extremely strong winds), which resulted in disastrous plantation fires across vast areas of eastern South Africa and affecting 14,000 ha of our plantations. These abnormal weather conditions might be more frequent as a result of climate change. In addition, because the transformation of land ownership and management in Southern Africa has been moving ownership and management of plantations to independent growers, we have less ability to directly manage fire risk, as well as risks of other catastrophic events, such as pathogen and pest infestations. As a consequence, the risk of plantation fires or other catastrophic events remains high and may be increasing. Continued or increased losses of our wood source could jeopardise our ability to supply our mills with timber from the region. However, Sappi has implemented an extensive fire protection strategy through which risks are now managed via an integrated Fire Risk Management System. Sappi has increased community participation in fire prevention to reduce the incidents of fires through regional and district Fire Protection Associations. In addition, significant investment has improved fire detection, while fire crew training and improved equipment has significantly improved response times to fires. While the impact of fires on our plantations during fiscal 2011 to fiscal 2018 was substantially less than in fiscal years 2007 through 2010, we cannot be certain that this situation will continue going forward. The risk of increased forest fires could also impact the availability of market pulp in Europe. About 6% of the woodfibre used at our European mills originates from Portugal and Spain, countries that have suffered from severe forest fires in the recent years.

**Time horizon**
Current

**Likelihood**
Likely

**Magnitude of impact**
Medium-high

**Are you able to provide a potential financial impact figure?**
No, we do not have this figure
Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

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

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

Cost of management
1000000

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

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

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

Identifier
Opp1

Where in the value chain does the opportunity occur?
Customer

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Type of financial impact
Increased revenue through demand for lower emissions products and services

Company-specific description
Brand manufacturers and consumers are looking for more environmentally friendly, lighter weight packaging

Time horizon
Current

Likelihood
Virtually certain

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
54350000

Potential financial impact figure – maximum (currency)
108700000

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

Strategy to realize opportunity
We significantly expanded our specialty and packaging paper capacity in 2018 by concluding We concluded the acquisition of the specialty paper business of Cham Paper Group Holding AG (CPG). The transaction includes the acquisition of CPG’s Carmignano and Condino Mills (Italy) and its digital imaging business located in Cham (Switzerland), as well as all brands and know-how. Significantly, the acquisition has added 160,000 tons of specialty paper to our capacity, supporting our diversification strategy and 2020Vision to grow in higher margin growth segments. Investment wasere made in Rockwell Solutions in Scotland to supply alternative packaging solutions as an eventual substitute or replacement of plastics.
Cost to realize opportunity
149000000

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

Identifier
Opp2

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

Opportunity type
Energy source

Primary climate-related opportunity driver
Other

Type of financial impact
Reduced exposure to future fossil fuel price increases

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

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
100000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Financial impact: US$1 billion direct value add over 20 years

Strategy to realize opportunity
Sappi’s consortium partners in the project are KC Africa and African Rainbow Energy and Power. Sappi will have a 30% stake in the facility, which is expected to contribute to the national grid from July 2020. The project will use biomass recovered from surrounding plantations and screened waste material from the mill production process. The power plant will burn up to 35 tons per hour of biomass in a boiler to generate steam and drive a turbine to generate electricity which will be fed into the national grid. Sappi already contributes to the national grid by selling surplus energy from Ngodwana Mill to the state power utility, Eskom. With this project, Sappi has become one of only a few companies in South Africa to embark on a biomass energy project.

Cost to realize opportunity

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

Identifier
Opp3

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

Opportunity type
Markets

Primary climate-related opportunity driver
Other

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

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

Time horizon
Current

Likelihood
CDP
<table>
<thead>
<tr>
<th>Identifier</th>
<th>Opp4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where in the value chain does the opportunity occur?</td>
<td>Direct operations</td>
</tr>
<tr>
<td>Opportunity type</td>
<td>Energy source</td>
</tr>
<tr>
<td>Primary climate-related opportunity driver</td>
<td>Use of lower-emission sources of energy</td>
</tr>
<tr>
<td>Type of financial impact</td>
<td>Reduced exposure to future fossil fuel price increases</td>
</tr>
<tr>
<td>Company-specific description</td>
<td>Some 150 years of intensive coal mining in South Africa have produced about a billion tons of discarded thermal-grade coal fines. To utilise this energy source, we constructed and tested a small fuel rod manufacturing plant at Ngodwana Mill. The fuel rods comprise a mixture of coal slurry, biomass and lignosulphonate, which can be used as a coal replacement. Initial fuel rod test results are positive and could lead to reduced greenhouse gas emissions when compared to low-grade coal. Sappi has entered into a joint venture agreement with the Industrial Development Corporation (IDC) as a strategic equity and debt partner to provide the balance of the capital required for the demonstration plant.</td>
</tr>
<tr>
<td>Time horizon</td>
<td>Short-term</td>
</tr>
<tr>
<td>Likelihood</td>
<td>About as likely as not</td>
</tr>
<tr>
<td>Magnitude of impact</td>
<td>Low</td>
</tr>
<tr>
<td>Are you able to provide a potential financial impact figure?</td>
<td>Yes, a single figure estimate</td>
</tr>
<tr>
<td>Potential financial impact figure (currency)</td>
<td>770</td>
</tr>
<tr>
<td>Potential financial impact figure – minimum (currency)</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Potential financial impact figure – maximum (currency)</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Explanation of financial impact figure</td>
<td>The figure given is an estimation of the anticipated fuel rod costs per ton, approximately two-thirds of the costs of coal per ton.</td>
</tr>
<tr>
<td>Strategy to realize opportunity</td>
<td>The fuel rods will be tested in one of Sappi’s boilers at Tugela Mill for a twelve-month period. The demonstration facility will be upgraded if the test results are positive.</td>
</tr>
<tr>
<td>Cost to realize opportunity</td>
<td>7692307</td>
</tr>
<tr>
<td>Comment</td>
<td>The cost of US$7,692,307 is the cost of the plant.</td>
</tr>
</tbody>
</table>
Where in the value chain does the opportunity occur?
Supply Chain

Opportunity type
Resilience

Primary climate-related opportunity driver
Other

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

Company-specific description
Together with energy, wood is our most expensive input. It therefore makes sense to optimise the pine and eucalyptus wood supply we grow and use in South Africa. To that end, our tree improvement programmes aim to increase the accuracy and efficiency of conventional tree breeding techniques, thereby enhancing our fibre base. In South Africa, where we own and lease 379,000 hectares of land, we have a high level of control over our fibre sources. We moderate our exposure to climate change-related risk by: • Maintaining wide genetic variability in our planting material enables us to breed trees for a wide range of conditions allowing us to respond to climatic changes. • Continually monitoring and reviewing forest best practices in the light of changing environmental factors, thus helping to mitigate any increased threat from drought. • Measuring permanent sample plots annually (eucalyptus) or bi-annually (pines) to determine the effect of drought and other climatic change impacts on annual growth as an input to long term planning. • Engaging in research and collaboration with industry and tertiary institutions to develop biocatalyst measures and breed genetically more resistant planting stock. • Implementing extensive planting of more drought tolerant eucalypt hybrids. • Fire risks are mitigated via an integrated Fire Risk Management System (FRMS) which categorises our risks and assigns a risk rating. We also calculate an estimated maximum loss (EML) per area. Fire management plans are drawn up with mitigation measures to minimise these risks and reduce EMLs as much as possible. These plans are monitored throughout the fire season using our FRMS system.

Time horizon
Current

Likelihood
About as likely as not

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
13462968.75

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

Strategy to realize opportunity
Ongoing investment into climate-related tree improvement programmes.

Cost to realize opportunity
3700000

Comment
The figure given represents Sappi Forest’s research budget.

C2.5

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

<table>
<thead>
<tr>
<th>Impact</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products and services</td>
<td>Impacted</td>
</tr>
<tr>
<td>Supply chain and/or value chain</td>
<td>Impacted</td>
</tr>
<tr>
<td>Adaptation and mitigation activities</td>
<td>Impacted</td>
</tr>
<tr>
<td>Investment in R&amp;D</td>
<td>Impacted</td>
</tr>
<tr>
<td>Operations</td>
<td>Impacted</td>
</tr>
</tbody>
</table>

Other, please specify
Please select
(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

<table>
<thead>
<tr>
<th>Relevance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>Please select</td>
</tr>
<tr>
<td>Operating costs</td>
<td>Impacted</td>
</tr>
<tr>
<td>Capital expenditures/capital allocation</td>
<td>Please select</td>
</tr>
<tr>
<td>Acquisitions and divestments</td>
<td>Please select</td>
</tr>
<tr>
<td>Access to capital</td>
<td>Please select</td>
</tr>
<tr>
<td>Assets</td>
<td>Please select</td>
</tr>
<tr>
<td>Liabilities</td>
<td>Please select</td>
</tr>
<tr>
<td>Other</td>
<td>Impacted</td>
</tr>
</tbody>
</table>

C3. Business Strategy

C3.1

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

C3.1a

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

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.
In development, we plan to complete it within the next 2 years

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

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

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

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

* Improving the energy efficiency of our mills.

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

* Having a global energy intensity target in place — to reduce energy intensity by 5% by 2020 compared with a 2014 baseline. In FY2018, compared with our 2014 baseline, there was an improvement of 1.24%.

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

C3.1d

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

<table>
<thead>
<tr>
<th>Climate-related scenarios</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationally determined contributions (NDCs)</td>
<td>In South Africa, we used legislated methodologies in preparing our carbon budget which the Department of Environmental Affairs (DEA) has accepted. Sappi SA’s Pollution Prevention Plan (PPP) has also been approved by the DEA (until 31 Dec 2020). The PPP commits Sappi SA to reduce absolute GHG emissions. In terms of the recently promulgated carbon tax, our Z-factor has been approved, which means we get 60% base allowance, 5% because we have approved carbon budget, 5% benchmark / performance allowance and 10% because we are trade exposed = 80% allowance on the R120 / t ton.</td>
</tr>
</tbody>
</table>

C4. Targets and performance

C4.1

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

Intensity target

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

**Target reference number**
Int 1

**Scope**
Scope 1 + 2 (market-based)

**% emissions in Scope**
36.2

**Targeted % reduction from base year**
5

**Metric**
Metric tons CO2eq per metric ton of product

**Base year**
2014

**Start year**
2015

**Normalized base year emissions covered by target (metric tons CO2e)**
0.654

**Target year**
2020

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

**% of target achieved**
0

**Target status**
Underway

**Please explain**
Sappi Europe’s 2020 intensity target is the reduction of specific CO2 equivalent emissions (Scope 1 + Scope 2) per air dry tons of saleable production. Saleable production includes pulp and paper. (units of CO2 eq/adt). Sappi SA and Sappi North America are not covered in the target.

**% change anticipated in absolute Scope 1+2 emissions**
5

**% change anticipated in absolute Scope 3 emissions**
0

---

C4.2

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

**Target**
Energy usage

**KPI – Metric numerator**
Purchased fossil energy in GJ

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

**Base year**
2014

**Start year**
2015

**Target year**
2020

**KPI in baseline year**
20.22

**KPI in target year**
18.3

**% achieved in reporting year**
9.52

**Target Status**
Underway

**Please explain**
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Purchased fossil energy in GJ in Sappi South Africa per metric ton of air dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce specific purchased fossil energy by 10% by 2020. Purchased fossil energy relates to emissions in Scope 1 and Scope 2 categories.

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

Target
Energy usage

KPI – Metric numerator
Total energy usage in GJ

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

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
22.66

KPI in target year
22.38

% achieved in reporting year
2.2

Target Status
Underway

Please explain
Based on Sappi’s financial year which is 1 October of the previous year to 30 September of the next year. Total energy usage in GJ in Sappi Global per metric ton of air dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

Part of emissions target

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

Target
Energy usage

KPI – Metric numerator
Total energy usage in GJ

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

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
14.9

KPI in target year
14.57

% achieved in reporting year
2.2

Target Status
Underway

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

Part of emissions target

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

Target
Energy usage

KPI – Metric numerator
Total energy usage in GJ
**KPI – Metric denominator (intensity targets only)**

Per metric ton of product

**Base year**

2014

**Start year**

2015

**Target year**

2020

**KPI in baseline year**

28.04

**KPI in target year**

27.78

**% achieved in reporting year**

1

**Target Status**

Underway

**Please explain**

Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total energy usage in GJ in Sappi North America per metric ton of air dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

**Part of emissions target**

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

---

**Target**

Please select

**KPI – Metric numerator**

Total energy usage in GJ

**KPI – Metric denominator (intensity targets only)**

Per metric ton of product

**Base year**

2014

**Start year**

2015

**Target year**

2020

**KPI in baseline year**

33.23

**KPI in target year**

31.69

**% achieved in reporting year**

4.62

**Target Status**

Underway

**Please explain**

Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total energy usage in GJ in Sappi South Africa per metric ton of air dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total energy usage by 5% by 2020. Total energy relates to emissions in Scope 1 and Scope 2 categories.

**Part of emissions target**

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

---

**Target**

Land use

**KPI – Metric numerator**

**KPI – Metric denominator (intensity targets only)**

**Base year**

2014

**Start year**

2015

**Target year**

2020

**KPI in baseline year**

CDP
KPI in target year
% achieved in reporting year
100

Target Status
Underway

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

Part of emissions target
No

Is this target part of an overarching initiative?
Remove deforestation

Target
Waste

KPI – Metric numerator
Total metric tons of landfilled waste

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

Base year
2014

Start year
2015

Target year
2020

KPI in baseline year
0.19

KPI in target year
0.19

% achieved in reporting year
0

Target Status
Underway

Please explain
Based on Sappi's financial year which is 1 October of the previous year to 30 September of the next year. Total metric tons of landfilled waste in Sappi South Africa per metric ton of air dry saleable production which includes pulp, paper and dissolving wood pulp. (units of GJ/adt). The target is to reduce total landfilled waste by 10% by 2020. This target relates to Scope 1 emissions as owned landfill emissions are included in Scope 1 emissions.

Part of emissions target
No

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

C4.3

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

C4.3a

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

<table>
<thead>
<tr>
<th>Number of initiatives</th>
<th>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under investigation</td>
<td>80</td>
</tr>
<tr>
<td>To be implemented*</td>
<td>11</td>
</tr>
<tr>
<td>Implementation commenced*</td>
<td>16</td>
</tr>
<tr>
<td>Not to be implemented</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Energy efficiency: Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>1959</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>400000</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td>865000</td>
</tr>
<tr>
<td>Payback period</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>16-20 years</td>
</tr>
<tr>
<td>Comment</td>
<td>At Somerset Mill in Sappi North America (SNA), an upgrade to the system that shatters the recovery boiler smelt flow into smaller droplets. This upgrade improved safety and reduced the shattering steam usage by 9600 lb/hr which is equivalent to 1,959 mt CO2 per annum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Energy efficiency: Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>522</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>89203</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td>92615</td>
</tr>
<tr>
<td>Payback period</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>16-20 years</td>
</tr>
<tr>
<td>Comment</td>
<td>At Somerset Mill in SNA, an increase in the size of the mud precoat heat exchanger. This project saved 2,560 lb/hr of steam, which is equivalent to 522 mt CO2 per annum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Energy efficiency: Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>23355</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>956000</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td>Please select</td>
</tr>
<tr>
<td>Payback period</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Comment</td>
<td>At Cloquet Mill in SNA, Scope 1 emissions reduced by 23,355 metric tons of CO2e due to operational efficiency projects and the implementation of capital projects. Capital</td>
</tr>
</tbody>
</table>
At Cloquet Mill in SNA, Scope 2 emissions reduced by 6,198 metric tons of CO2e due to operational efficiency projects and the implementation of capital projects. Capital - Metra recovery/recaust automation - Intelligent sootblowing - Prebleach filtrate HX control valve - Operational – Fibreline sump controls.

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Energy efficiency: Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>6198</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 2 (market-based)</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>Please select</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Comment</td>
<td>At Cloquet Mill in SNA, Scope 2 emissions reduced by 6,198 metric tons of CO2e due to operational efficiency projects and the implementation of capital projects. Capital - Metra recovery/recaust automation - Intelligent sootblowing - Prebleach filtrate HX control valve - Operational – Fibreline sump controls.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Energy efficiency: Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>388.69</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>Please select</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Comment</td>
<td>At Westbrook Mill in SNA, three projects were implemented: two grade conversions to chemistries with no volatile organic compounds (VOCs) to incinerate; and reduced incinerator operating temperature by 25 deg F.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Energy efficiency: Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Process optimization</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>10000.2</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>Please select</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Comment</td>
<td>In Sappi SA, heat recovery and steam reduction project. Optimisation of steam will result in a reduction of coal consumption on the coal fired boilers. This is based on a steam to coal ratio of 7.</td>
</tr>
</tbody>
</table>
## Initiative type
Process emissions reductions

### Description of initiative
Other, please specify (Process optimisation)

### Estimated annual CO2e savings (metric tonnes CO2e)

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Process emissions reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Other, please specify (Process optimisation)</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>33374.6</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
</tbody>
</table>

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
Ongoing

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

---

### Initiative type
Process emissions reductions

### Description of initiative
Other, please specify (Process optimisation)

### Estimated annual CO2e savings (metric tonnes CO2e)

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Process emissions reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Other, please specify (Process optimisation)</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>37828</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
</tbody>
</table>

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
Ongoing

Comment
In Sappi SA, reduced waste to landfill.

---

### Initiative type
Process emissions reductions

### Description of initiative
Other, please specify (Process optimisation)

### Estimated annual CO2e savings (metric tonnes CO2e)

<table>
<thead>
<tr>
<th>Initiative type</th>
<th>Process emissions reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of initiative</td>
<td>Other, please specify (Process optimisation)</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>0</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
</tbody>
</table>

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
56989

Payback period
1-3 years

Estimated lifetime of the initiative
16-20 years

Comment
Energy savings at the evaporation plant in Ehingen Mill.
<table>
<thead>
<tr>
<th>Description of initiative</th>
<th>Other, please specify (Process optimisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>3095</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>181810</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>16-20 years</td>
</tr>
<tr>
<td>Comment</td>
<td>Gas reduction at CM9 in Gratkorn Mill</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of initiative</th>
<th>Other, please specify (Process optimisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>1016</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>179478</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>16-20 years</td>
</tr>
<tr>
<td>Comment</td>
<td>Increasing efficiency of the combined heat and power plant in Lanaken Mill.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of initiative</th>
<th>Other, please specify (Process optimisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>2284</td>
</tr>
<tr>
<td>Scope</td>
<td>Scope 1</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>173965</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>16-20 years</td>
</tr>
<tr>
<td>Comment</td>
<td>Increased efficiency of Wanson boilers in Lanaken Mill</td>
</tr>
</tbody>
</table>

| Description of initiative                          | Other, please specify (Process optimisation) |

CDP
C4.3c

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

<table>
<thead>
<tr>
<th>Method</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance with regulatory requirements/standards</td>
<td>In addition to internal and regulatory standards, Sappi mitigates climate change-related risk by using external benchmarks to monitor environmental performance and ensure compliance with best practice. In terms of energy, for example, Sappi uses best practice energy consumptions indicated by the Technical Association of Pulp and Paper Industries (TAPPI) in the United States of America and the Pulp and Paper Technical Association of Canada (PAPTAC). The Swedish Kretsloppsanpassad Massafabrik (KAM) organisation has indicated what the best practice energy consumption for an entire mill should be for various mill types. Key performance indices include the following: Specific purchased power; Specific purchased fuel; Specific total power consumed; Specific total fuel consumed; Percentage 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.</td>
</tr>
<tr>
<td>Dedicated budget for energy efficiency</td>
<td>This is in place at some of Sappi’s mills in Europe.</td>
</tr>
<tr>
<td>Employee engagement</td>
<td>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.</td>
</tr>
<tr>
<td>Financial optimization calculations</td>
<td>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.</td>
</tr>
<tr>
<td>Internal incentives/recognition programs</td>
<td>The Management Incentive Scheme (MIS) for the management group and regional board of directors of the SA mills is linked to Sappi SSA’s sustainability performance in terms of energy reduction (total and fossil) against a set of targets as from FY18 (as well as water and waste targets). Sustainability targets are applicable to Sappi’s Southern African mills and to the SA Regional Executives and Regional Management Teams.</td>
</tr>
<tr>
<td>Partnering with governments on technology development</td>
<td>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 (REIPPPP).</td>
</tr>
<tr>
<td>Other</td>
<td>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 allowances for higher utilisation of bio-fuels in boilers have been made.</td>
</tr>
</tbody>
</table>

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

(C-AC4.4/C-FB4.4/C-PF4.4) Do you implement management practices on your own land with a climate change mitigation and/or adaptation benefit? Yes
Management practice reference number
MP1

Management practice
Biodiversity considerations

Description of management practice
Approximately one third of our owned and leased plantations (387,000 hectares in total) are set aside for biodiversity conservation. Our strategies for managing biodiversity include: • Using fertilizer once in each rotation • Managing natural vegetation according to best practice in terms of burning, grazing and weed control to ensure health habitats. • Ongoing assessment and monitoring of veld condition. • Protection of sites from poaching, illegal medicinal plant collection and overgrazing. • Participation in the national stewardship programme through which we have six declared nature reserves. Long-term integrated weed management plans on all our plantations. Invasive alien plants (IAPs) are widely considered as a major threat to biodiversity, human livelihoods and economic development. Currently, there are 379 species of plants 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. Our tree improvement programmes aim to increase wood production and forest productivity. We enhance our fibre base through leading-edge tree improvement programmes which aim to produce low-cost wood with the required pulping characteristics and increase yield per hectare. We achieve this mainly through genetic selection of planting stock.

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

Estimated CO2e savings (metric tons CO2e)

Please explain
Not possible to quantify CO2 saving

C4.5

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

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

**Level of aggregation**
Company-wide

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

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

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

**% revenue from low carbon product(s) in the reporting year**
98

**Comment**
All Sappi's products are based on woodfibre, a renewable natural resource grown in sustainably managed forests and plantations which sequestrate carbon. Trees use water and sunlight to convert CO2 into carbohydrates, through the process of photosynthesis to provide energy and the building blocks for growth. Carbon removed from the atmosphere is effectively stored in plant material and wood, i.e. trees act as carbon sinks. Sappi is 41.8% energy self-sufficient and the group's renewable fuel energy usage currently stands at was 46.8%, of which 71.5% is own black liquor. In addition, in SA, all Sappi's owned and leased plantations are 100% FSC-certified, while globally 75.2% of fibre used in Sappi's operations is certified FSC, PEFC or SFI-certified, while the balance is obtained from known and controlled sources. This is important, as only about 11% of the world's forests are certified to a credible standard and deforestation of tropical rainforests is responsible for generating significant levels of greenhouse gas emissions.[https://www.worldwildlife.org/threats/deforestation]

---

**Level of aggregation**
Group of products

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

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

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**
Other, please specify (Emissions are avoided by using renewable fuel energy sources instead of fossil fuel sources. In addition, emissions are avoided by power self-sufficiency instead of purchased power with higher emissions than self-produced power)

**% revenue from low carbon product(s) in the reporting year**
98

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

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**C5. Emissions methodology**

---

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

Scope 1

Base year start
October 1 2014

Base year end
September 30 2015

Base year emissions (metric tons CO2e)
4112641.22

Comment
The base year is based on Sappi's 2015 financial year.

Scope 2 (location-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment
Scope 2 (market-based)

Base year start
October 1 2014

Base year end
September 30 2015

Base year emissions (metric tons CO2e)
1634760.92

Comment
The base year is based on Sappi's 2015 financial year.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

C6. Emissions data

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

Reporting year
Gross global Scope 1 emissions (metric tons CO2e)
4297428.83

Start date
October 1 2017

End date
September 30 2018

Comment

Past year 1
Gross global Scope 1 emissions (metric tons CO2e)

Start date
End date
Comment

Past year 2
Gross global Scope 1 emissions (metric tons CO2e)

Start date
End date
Comment

Past year 3
Gross global Scope 1 emissions (metric tons CO2e)

Start date
End date
Comment

C6.2

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

Row 1
Scope 2, location-based
We are not reporting a Scope 2, location-based figure

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

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

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

Reporting year
Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)
1430976

Start date
October 1 2017

End date
September 30 2018

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

Past year 1
Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)

Start date

End date

Comment

Past year 2
Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)

Start date

End date

Comment

Past year 3
Scope 2, location-based
<Not Applicable>

Scope 2, market-based (if applicable)

Start date

End date

Comment

C6.4

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

Yes

C6.4a

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

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

Relevance of Scope 1 emissions from this source
No emissions excluded

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

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

Explain why this source is excluded
Sappi includes emissions from production facilities. The excluded Scope 2 emissions are not from production facilities, i.e. Scope 1 emissions are not applicable, but the power consumption (Scope 2 emissions) has been evaluated for 2018 and relative to Sappi's production facilities these emissions are not relevant.
(C6.5) Account for your organization’s Scope 3 emissions, disclosing and explaining any exclusions.

### Purchased goods and services

**Evaluation status**  
Relevant, calculated

**Metric tonnes CO2e**  
1526241.05

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

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

**Explanation**

### Capital goods

**Evaluation status**  
Relevant, calculated

**Metric tonnes CO2e**  
1526241.05

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

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

**Explanation**

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

**Evaluation status**  
Relevant, calculated

**Metric tonnes CO2e**  
716079.4

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

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

**Explanation**

### Upstream transportation and distribution

**Evaluation status**  
Relevant, calculated

**Metric tonnes CO2e**  
716079.4

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

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

**Explanation**

### Waste generated in operations

**Evaluation status**  
Relevant, calculated

**Metric tonnes CO2e**  
25037.87

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

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

**Explanation**
Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
25687.41

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

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

Explanation

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
11497.64

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

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

Explanation

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

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

Downstream transportation and distribution

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

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

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Not considered as a relevant category for Sappi in terms of emissions.
Use of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

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

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

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

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

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

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Not applicable.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Not applicable. No investments with emissions not already included in Scopes 1 and 2.
Other (upstream)
Evaluation status
Not relevant, explanation provided
Metric tonnes CO2e
<Not Applicable>
Emissions calculation methodology
<Not Applicable>
Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>
Explanation
No other upstream emissions to be considered.

Other (downstream)
Evaluation status
Not relevant, explanation provided
Metric tonnes CO2e
<Not Applicable>
Emissions calculation methodology
<Not Applicable>
Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>
Explanation
No other downstream emissions to be considered.

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

C6.7

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

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

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

C6.10

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

C7. Emissions breakdowns

C7.1

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

<table>
<thead>
<tr>
<th>Greenhouse gas</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
<th>GWP Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>3821676.26</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
<tr>
<td>CH4</td>
<td>421387.06</td>
<td>Other, please specify (IPCC Fifth Assessment Report (AR5 - 100 year))</td>
</tr>
<tr>
<td>N2O</td>
<td>54365.52</td>
<td>IPCC Fifth Assessment Report (AR5 – 100 year)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>2363144.84</td>
</tr>
<tr>
<td>EU15</td>
<td>1482600.84</td>
</tr>
<tr>
<td>United States of America</td>
<td>451683.15</td>
</tr>
</tbody>
</table>

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

By business division
By facility
By activity

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

<table>
<thead>
<tr>
<th>Business division</th>
<th>Scope 1 emissions (metric ton CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sappi Southern Africa</td>
<td>2363145</td>
</tr>
<tr>
<td>Sappi Europe</td>
<td>1482601</td>
</tr>
<tr>
<td>Sappi North America</td>
<td>451683</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Facility</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ngodwana Mill (SA)</td>
<td>1248057.43</td>
<td>-25.57803</td>
<td>30.66549</td>
</tr>
<tr>
<td>Saiccor Mill (SA)</td>
<td>574473.05</td>
<td>-30.18078</td>
<td>30.77091</td>
</tr>
<tr>
<td>Stanger Mill (SA)</td>
<td>183617.82</td>
<td>-29.36743</td>
<td>31.28908</td>
</tr>
<tr>
<td>Tugela Mill (SA)</td>
<td>354319.69</td>
<td>-29.15216</td>
<td>31.40536</td>
</tr>
<tr>
<td>Allied Mill (Germany)</td>
<td>119130.13</td>
<td>51.98592</td>
<td>9.82076</td>
</tr>
<tr>
<td>Ehingen Mill (Germany)</td>
<td>44204.99</td>
<td>48.26766</td>
<td>9.72712</td>
</tr>
<tr>
<td>Gratkorn Mill (Austria)</td>
<td>474925.49</td>
<td>47.13333</td>
<td>15.33333</td>
</tr>
<tr>
<td>Kirkniemi Mill (Finland)</td>
<td>257440.12</td>
<td>60.18815</td>
<td>23.94212</td>
</tr>
<tr>
<td>Lanaken Mill (Belgium)</td>
<td>47354.94</td>
<td>50.8770</td>
<td>5.6547</td>
</tr>
<tr>
<td>Maastricht Mill (Netherlands)</td>
<td>186690.26</td>
<td>50.85957</td>
<td>5.6457</td>
</tr>
<tr>
<td>Stockstadt Mill (Germany)</td>
<td>352813.22</td>
<td>49.80421</td>
<td>8.46762</td>
</tr>
<tr>
<td>Cloquet Mill (Minnesota USA)</td>
<td>159488.34</td>
<td>46.72288</td>
<td>-92.4384</td>
</tr>
<tr>
<td>Somerset Mill (Maine USA)</td>
<td>238363.43</td>
<td>44.70452</td>
<td>-69.3782</td>
</tr>
<tr>
<td>Westbrook Mill (Maine USA)</td>
<td>63831.37</td>
<td>43.68397</td>
<td>-70.35211</td>
</tr>
<tr>
<td>Lomati Mill SA</td>
<td>2676.86</td>
<td>-25.7726</td>
<td>31.0402</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationary Combustion (Fossil Fuel)</td>
<td>398604.87</td>
</tr>
<tr>
<td>Stationary Combustion (Renewable Fuel)</td>
<td>6286.41</td>
</tr>
<tr>
<td>Process activities - make-up Chemicals</td>
<td>16273.13</td>
</tr>
<tr>
<td>Mobile combustion</td>
<td>18092.33</td>
</tr>
<tr>
<td>Waste management - Owned landfill emissions</td>
<td>214916.1</td>
</tr>
</tbody>
</table>

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

(C-AC7.4d/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.

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

C7.5

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 2, location-based emissions (metric tons CO2e)</th>
<th>Scope 2, market-based emissions (metric tons CO2e)</th>
<th>Purchased and consumed electricity, heat, steam or cooling (MWh)</th>
<th>Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>650390.67</td>
<td>650390.67</td>
<td>8872697.93</td>
<td>621976.12</td>
</tr>
<tr>
<td>EU15</td>
<td>698107.07</td>
<td>691420.85</td>
<td>24207413.68</td>
<td>933435.07</td>
</tr>
<tr>
<td>United States of America</td>
<td>82478.55</td>
<td>131350.16</td>
<td>4071998.26</td>
<td>135032.32</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Business division</th>
<th>Scope 2, location-based emissions (metric tons CO2e)</th>
<th>Scope 2, market-based emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sappi Southern Africa</td>
<td>650390.67</td>
<td>650390.67</td>
</tr>
<tr>
<td>Sappi Europe</td>
<td>698107.07</td>
<td>691420.85</td>
</tr>
<tr>
<td>Sappi North America</td>
<td>82478.55</td>
<td>131350.16</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Facility</th>
<th>Scope 2 location-based emissions (metric tons CO2e)</th>
<th>Scope 2, market-based emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ngodwana Mill (SA)</td>
<td>35672</td>
<td>35672</td>
</tr>
<tr>
<td>Saiccor Mill (SA)</td>
<td>200617</td>
<td>200617</td>
</tr>
<tr>
<td>Stanger Mill (SA)</td>
<td>126403</td>
<td>126403</td>
</tr>
<tr>
<td>Tugela Mill (SA)</td>
<td>187230</td>
<td>187230</td>
</tr>
<tr>
<td>Alfeld Mill (Germany)</td>
<td>119329</td>
<td>181600</td>
</tr>
<tr>
<td>Ehingen Mill (Germany)</td>
<td>97647</td>
<td>137245</td>
</tr>
<tr>
<td>Gratkorn Mill (Austria)</td>
<td>27099</td>
<td>0</td>
</tr>
<tr>
<td>Kirkeniem Mill (Finland)</td>
<td>217018</td>
<td>217018</td>
</tr>
<tr>
<td>Lanaken Mill (Belgium)</td>
<td>167697</td>
<td>58727</td>
</tr>
<tr>
<td>Maasbracht Mill (Netherlands)</td>
<td>9404</td>
<td>585</td>
</tr>
<tr>
<td>Stockstadt Mill (Germany)</td>
<td>66723</td>
<td>96446</td>
</tr>
<tr>
<td>Cloquet Mill (Minnesota USA)</td>
<td>59727</td>
<td>59727</td>
</tr>
<tr>
<td>Somerset Mill (Maine, USA)</td>
<td>95537</td>
<td>95537</td>
</tr>
<tr>
<td>Westbrook Mill (Maine, USA)</td>
<td>36</td>
<td>86</td>
</tr>
<tr>
<td>Lomati Mill (South Africa)</td>
<td>10469</td>
<td>10469</td>
</tr>
</tbody>
</table>

C7.6c

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

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope 2, location-based emissions (metric tons CO2e)</th>
<th>Scope 2, market-based emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased power</td>
<td>1430076</td>
<td>1430076</td>
</tr>
</tbody>
</table>

C7.9

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

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

<table>
<thead>
<tr>
<th>Change in emissions (metric tons CO2e)</th>
<th>Direction of change</th>
<th>Emissions value (percentage)</th>
<th>Please explain calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in renewable energy consumption</td>
<td>Increased</td>
<td>1.49</td>
<td>A 1% decrease in percentage renewable energy from 2017 to 2018 resulted in a slight increase in % fossil energy consumption. Increase in fossil energy consumption results in an increase in GHG emissions. The change in emissions brought about by decrease in renewable energy consumption over the total Scope 1 + Scope 2 emissions: (86256.23 /5770590.56) *100 = 1.49%</td>
</tr>
<tr>
<td>Other emissions reduction activities</td>
<td>Decreased</td>
<td>0.61</td>
<td>Absolute total energy decreased by 1.44%. Specific energy consumption per ton of saleable production decreased by 0.8%, resulting from a more energy efficient production process, due to implemented reduction activities.</td>
</tr>
<tr>
<td>Change in output</td>
<td>Decreased</td>
<td>0.62</td>
<td>A decrease in saleable production resulted in a decrease in emissions (metric tons CO2e). The change in emissions brought about by decrease in production over the total Scope 1 + Scope 2 emissions: (35929.23 /5770590.56) *100 = 0.62%</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Energy-related activity</th>
<th>Indicate whether your organization undertakes this energy-related activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstocks)</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>No</td>
</tr>
<tr>
<td>Generation of electricity, heat, steam, or cooling</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Consumption of fuel (excluding feedstock)</th>
<th>Heating value LHV (lower heating value)</th>
<th>MWh from renewable sources</th>
<th>MWh from non-renewable sources</th>
<th>Total MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>67039849</td>
<td>13857414.04</td>
<td>80897263</td>
<td></td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>10066651.55</td>
<td>26942044.41</td>
<td>37008685.95</td>
<td></td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Total energy consumption</td>
<td>77189869.75</td>
<td>40799458.45</td>
<td>117989328.2</td>
<td></td>
</tr>
</tbody>
</table>

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

| Consumption of fuel for the generation of electricity | Yes |
| Consumption of fuel for the generation of heat | Yes |
| Consumption of fuel for the generation of steam | Please select |
| Consumption of fuel for the generation of cooling | No |
| Consumption of fuel for co-generation or tri-generation | Yes |

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

**Fuels (excluding feedstocks)**

- **Bitumen**
  - **Heating value**
    - LHV (lower heating value)
  - **Total fuel MWh consumed by the organization**
    - 186634
  - **MWh fuel consumed for self-generation of electricity**
    - 0
  - **MWh fuel consumed for self-generation of heat**
  - **MWh fuel consumed for self-generation of steam**
  - **MWh fuel consumed for self-generation of cooling**
  - **MWh fuel consumed for self-cogeneration or self-trigeneration**

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

**Fuels (excluding feedstocks)**

- **Fuel Oil Number 2**
  - **Heating value**
    - LHV (lower heating value)
  - **Total fuel MWh consumed by the organization**
    - 6806
  - **MWh fuel consumed for self-generation of electricity**
  - **MWh fuel consumed for self-generation of heat**
  - **MWh fuel consumed for self-generation of steam**
  - **MWh fuel consumed for self-generation of cooling**
  - **MWh fuel consumed for self-cogeneration or self-trigeneration**

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

**Fuels (excluding feedstocks)**

- **Fuel Oil Number 6**

---

(CP)
Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
472290

MWh fuel consumed for self-generation of electricity
MWh fuel consumed for self-generation of heat
MWh fuel consumed for self-generation of steam
<Not Applicable>
MWh fuel consumed for self-generation of cooling
<Not Applicable>
MWh fuel consumed for self-cogeneration or self-trigeneration

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

Fuels (excluding feedstocks)
Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
8279897

MWh fuel consumed for self-generation of electricity
MWh fuel consumed for self-generation of heat
MWh fuel consumed for self-generation of steam
<Not Applicable>
MWh fuel consumed for self-generation of cooling
<Not Applicable>
MWh fuel consumed for self-cogeneration or self-trigeneration

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

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
4459315

MWh fuel consumed for self-generation of electricity
MWh fuel consumed for self-generation of heat
MWh fuel consumed for self-generation of steam
<Not Applicable>
MWh fuel consumed for self-generation of cooling
<Not Applicable>
MWh fuel consumed for self-cogeneration or self-trigeneration

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

Fuels (excluding feedstocks)
Tires

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
255523

MWh fuel consumed for self-generation of electricity
MWh fuel consumed for self-generation of heat
MWh fuel consumed for self-generation of steam
<Not Applicable>
MWh fuel consumed for self-generation of cooling
<Not Applicable>
MWh fuel consumed for self-cogeneration or self-trigeneration

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

<table>
<thead>
<tr>
<th>Fuels (excluding feedstocks)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating value</td>
<td></td>
</tr>
<tr>
<td>LHV (lower heating value)</td>
<td></td>
</tr>
<tr>
<td><strong>Total fuel MWh consumed by the organization</strong></td>
<td></td>
</tr>
<tr>
<td>68002</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of electricity</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of heat</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of steam</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of cooling</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-cogeneration or self-trigeneration</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Fuels (excluding feedstocks)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating value</td>
<td></td>
</tr>
<tr>
<td>LHV (lower heating value)</td>
<td></td>
</tr>
<tr>
<td><strong>Total fuel MWh consumed by the organization</strong></td>
<td></td>
</tr>
<tr>
<td>12574</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of electricity</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of heat</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of steam</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of cooling</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-cogeneration or self-trigeneration</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Fuels (excluding feedstocks)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating value</td>
<td></td>
</tr>
<tr>
<td>LHV (lower heating value)</td>
<td></td>
</tr>
<tr>
<td><strong>Total fuel MWh consumed by the organization</strong></td>
<td></td>
</tr>
<tr>
<td>1740</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of electricity</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of heat</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of steam</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of cooling</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-cogeneration or self-trigeneration</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Fuels (excluding feedstocks)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating value</td>
<td></td>
</tr>
<tr>
<td>LHV (lower heating value)</td>
<td></td>
</tr>
<tr>
<td><strong>Total fuel MWh consumed by the organization</strong></td>
<td></td>
</tr>
<tr>
<td>4591888</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of electricity</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of heat</td>
<td></td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of steam</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>MWh fuel consumed for self-generation of cooling</td>
<td></td>
</tr>
</tbody>
</table>
MWh fuel consumed for self-cogeneration or self-trigeneration

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

Fuels (excluding feedstocks)
Black Liquor

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
13875842

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

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

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

MWh fuel consumed for self-cogeneration or self-trigeneration

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

Fuels (excluding feedstocks)
Biogas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
80875

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

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

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

MWh fuel consumed for self-cogeneration or self-trigeneration

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

C8.2d

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

Biogas

Emission factor
54.6545

Unit
kg CO2e per GJ

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

Comment
2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3. IPCC Fifth Assessment Report (AR5) for GWP
<table>
<thead>
<tr>
<th>Commodity</th>
<th>Emission factor</th>
<th>Unit</th>
<th>Emission factor source</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitumen</td>
<td>80.943</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Black Liquor</td>
<td>95.914</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Coal</td>
<td>995.2775</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Diesel</td>
<td>74.343</td>
<td>lb CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Fuel Oil Number 2</td>
<td>77.643</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Fuel</td>
<td>Emission factor</td>
<td>Unit</td>
<td>Emission factor source</td>
<td>Comment</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
<td>------</td>
<td>------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Oil Number 6</td>
<td>77.643</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Kerosene</td>
<td>72.143</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>56.1548</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Wood Waste</td>
<td>113.9</td>
<td>kg CO2e per GJ</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>kg CO2e per GJ</td>
<td>2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3.</td>
<td>2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3.</td>
</tr>
<tr>
<td>Sulphur</td>
<td>2006 IPCC Guidelines for National Greenhouse Gas Inventories. Default Emission Factors for Stationary Combustion in Manufacturing industries, Table 2.3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C8.2e

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

<table>
<thead>
<tr>
<th></th>
<th>Total Gross generation (MWh)</th>
<th>Generation that is consumed by the organization (MWh)</th>
<th>Gross generation from renewable sources (MWh)</th>
<th>Generation from renewable sources that is consumed by the organization (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>4680977.44</td>
<td>3487411.49</td>
<td>1009587.87</td>
<td>1635945.31</td>
</tr>
<tr>
<td>Heat</td>
<td>772877.19</td>
<td>772877.19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Steam</td>
<td>23581391.18</td>
<td>23581391.18</td>
<td>11026196.7</td>
<td>11026196.7</td>
</tr>
<tr>
<td>Cooling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

C8.2f

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

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

- **Low-carbon technology type**
  - Hydropower

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

- **MWh consumed associated with low-carbon electricity, heat, steam or cooling**
  - 87415

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

- **Comment**
  - 100% hydropower used by power supplier, supplying to Sappi Gratkorn Mill in Austria.

C9. Additional metrics

C9.1

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

- **Description**
  - Waste

- **Metric value**
  - 0.06

- **Metric numerator**
  - Tons

- **Metric denominator (intensity metric only)**
  - Air dry ton saleable production

- **% change from previous year**
  - 15.7

- **Direction of change**
  - Decreased

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

- **Description**
  - Waste

- **Metric value**
  - 422376

- **Metric numerator**
  - Tons

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

- **% change from previous year**
Direction of change
Decreased

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

Description
Waste

Metric value
9.8

Metric numerator
kg

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

% change from previous year
1.88

Direction of change
Decreased

Please explain
Chemical oxygen demand (COD) in wastewater results in CO2 emissions. COD in wastewater effluent is monitored per ton of saleable production. Saleable production includes paper, pulp and dissolving wood pulp. Anaerobically treated wastewater emits methane emissions which are included in Scope 1 emissions as CO2 equivalent.

Description
Energy usage

Metric value
22.38

Metric numerator
GJ

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

% change from previous year
0.83

Direction of change
Decreased

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

C10. Verification

C10.1

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

<table>
<thead>
<tr>
<th>Scope</th>
<th>Verification/assurance status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>Third-party verification or assurance process in place</td>
</tr>
<tr>
<td>Scope 2 (location-based or market-based)</td>
<td>Third-party verification or assurance process in place</td>
</tr>
<tr>
<td>Scope 3</td>
<td>No third-party verification or assurance</td>
</tr>
</tbody>
</table>

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

**Scope**
- **Scope 1**
  - Verification or assurance cycle in place: Annual process
  - Status in the current reporting year: Complete
  - Type of verification or assurance: Limited assurance
  - **Attach the statement**
    - KPMG final signed opinion December 2018.pdf
  - **Page/section reference**
    - 1-4
  - **Relevant standard**
    - ISAE3000
  - **Proportion of reported emissions verified (%)**
    - 100

**Scope**
- **Scope 2 market-based**
  - Verification or assurance cycle in place: Annual process
  - Status in the current reporting year: Complete
  - Type of verification or assurance: Limited assurance
  - **Attach the statement**
    - KPMG final signed opinion December 2018.pdf
  - **Page/section reference**
    - 1-4
  - **Relevant standard**
    - ISAE3000
  - **Proportion of reported emissions verified (%)**
    - 100

**Scope**
- **Scope 1**
  - Verification or assurance cycle in place: Annual process
  - Status in the current reporting year: Complete
  - Type of verification or assurance: High assurance
  - **Attach the statement**
    - We do hold the EU ETS certificates, but do not share these publicly.
  - **Relevant standard**
    - European Union Emissions Trading System (EU ETS)
  - **Proportion of reported emissions verified (%)**
    - 35

C10.2

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

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

<table>
<thead>
<tr>
<th>Disclosure module verification relates to</th>
<th>Data verified</th>
<th>Verification standard</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8. Energy</td>
<td>Other, please specify (Year on year change in energy usage)</td>
<td>ISO50001</td>
<td>Sappi SA region was audited for ISO50001 certification purposes. Certification received in 2017. The European operations are also ISO50001 certified.</td>
</tr>
</tbody>
</table>

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

EU ETS
Finland carbon tax

C11.1b

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

**EU ETS**

- % of Scope 1 emissions covered by the ETS: 34.5
- Period start date: October 1, 2018
- Period end date: December 31, 2018
- Allowances allocated: 1050605
- Allowances purchased: 613062
- Verified emissions in metric tons CO2e: 1663667
- Details of ownership: Facilities we own and operate
- Comment: Sappi will be refunded US$13.3 million by 2019.

C11.1c

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

**Finland carbon tax**

- Period start date: January 1, 2018
- Period end date: December 31, 2018
- % of emissions covered by tax: 6.02
- Total cost of tax paid: 16012179.15
- Comment: Sappi is expected to be refunded US$13.3 million by 2019.
(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

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

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

We have a global target in place to reduce energy intensity from a 2014 base of 22.66GJ air dry tons by 5% by 2020. In 2019 we achieved a reduction of 1.24% compared with the 2014 baseline. We are currently working on introducing science-based targets across the group. We are fully compliant with the EU ETS rules and annual emissions are verified according to national legislation. Globally, our Scope 1 and 2 emissions have been externally verified (limited assurance). We have established an inter-regional group to examine and assess new disruptive technologies to reduce waste, water, energy and emissions.

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

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

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

C12. Engagement

(C12.1) 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.

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Compliance &amp; onboarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details of engagement</td>
<td>Included climate change in supplier selection / management mechanism</td>
</tr>
<tr>
<td>% of suppliers by number</td>
<td>0.28</td>
</tr>
<tr>
<td>% total procurement spend (direct and indirect)</td>
<td>26</td>
</tr>
<tr>
<td>% Scope 3 emissions as reported in C6.5</td>
<td></td>
</tr>
</tbody>
</table>

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

Impact of engagement, including measures of success
It is still too early to establish this, we hope to be able to report next year.

Comment

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Information collection (understanding supplier behavior)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details of engagement</td>
<td>Collect climate change and carbon information at least annually from suppliers</td>
</tr>
<tr>
<td>% of suppliers by number</td>
<td>1.53</td>
</tr>
<tr>
<td>% total procurement spend (direct and indirect)</td>
<td>38</td>
</tr>
<tr>
<td>% Scope 3 emissions as reported in C6.5</td>
<td></td>
</tr>
</tbody>
</table>

Comment

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

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Education/information sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details of engagement</td>
<td>Share information about your products and relevant certification schemes (i.e. Energy STAR)</td>
</tr>
<tr>
<td>% of customers by number</td>
<td>80</td>
</tr>
<tr>
<td>% Scope 3 emissions as reported in C6.5</td>
<td></td>
</tr>
</tbody>
</table>

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

Impact of engagement, including measures of success
We believe we are successful in raising the awareness of the role of sustainably managed forests/plantations and our renewable products in achieving a low-carbon society, and in working with our customers and other stakeholders to substitute fossil-based and other non-renewable materials. In all three regions, we were awarded a Gold Recognition Level in sustainability performance by independent rating agency EcoVadis, placing us in the top 5% of 30,000 companies.
(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

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

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

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

Specify which agricultural or forest management practices with climate change mitigation and/or adaptation benefits you encourage your suppliers to undertake and describe your role in the implementation of each practice.

Management practice reference number
MP1

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

Description of management practice
The Confederation of European Paper Industries (CEPI), of which Sappi Europe is a member, participates in actions supporting and promoting the development of sustainable forestry management tools, including forest certification—all over the world, particularly in less developed countries. In North America our Forestry Programme assists woodlot owners in the states of Maine, Minnesota, Wisconsin, and Michigan’s Upper Peninsula develop, manage and harvest their woodlands. In Southern Africa, qualified extension officers work with growers in our enterprise development scheme Sappi Khulisa, to promote response planting and harvesting practices.

Your role in the implementation
Financial
Knowledge sharing
Operational

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

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

Comment
To further assist with the development of small growers and other forestry value chain participants, we have established a training centre known as Khulisa Ulwazi (‘Growing Knowledge’) and developed training material in conjunction with the Institute of Natural Resources. Training is offered to all value chain participants including small growers, land reform beneficiaries and small-scale contractors and covers all aspects of forestry, including the core operational skills as well as safety, legal compliance and running a business.

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

Do you collect information from your suppliers about the outcomes of any implemented agricultural/forest management practices you have encouraged?

Yes

C12.3

Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
C12.3a

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

<table>
<thead>
<tr>
<th>Focus of legislation</th>
<th>Corporate position</th>
<th>Details of engagement</th>
<th>Proposed legislative solution</th>
</tr>
</thead>
</table>

C12.3b

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

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

**Trade association**
Confederation of European Paper Industries (CEPI)

**Is your position on climate change consistent with theirs?**
Consistent

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

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

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**Trade association**
Confederation of European Paper Industries (CEPI)

**Is your position on climate change consistent with theirs?**
Consistent

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

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

---

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

**Is your position on climate change consistent with theirs?**
Consistent

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

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

---

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

**Is your position on climate change consistent with theirs?**
Consistent

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

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

---

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

**Is your position on climate change consistent with theirs?**
Consistent

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

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

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C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?
Yes
What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

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

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).

<table>
<thead>
<tr>
<th>Publication</th>
<th>Status</th>
<th>Attach the document</th>
<th>Page/Section reference</th>
<th>Content elements</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>In mainstream reports</td>
<td>Complete</td>
<td>sappi 2018 annual report final.pdf</td>
<td>Page 40, pages 54, 55-57</td>
<td>Governance, Strategy, Emissions figures, Emission targets, Other metrics</td>
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<td>Publication</td>
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<tr>
<td>In voluntary communications</td>
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<td>Sappi-FAQs-Climate-change (2).pdf</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C13. Other land management impacts
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

Provide details on those management practices that have other impacts besides climate change mitigation/adaptation and on your management response.

<table>
<thead>
<tr>
<th>Management practice reference number</th>
<th>Overall effect</th>
<th>Which of the following has been impacted?</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP1</td>
<td>Mixed</td>
<td>Biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yield</td>
</tr>
</tbody>
</table>

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

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

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

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

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
Provide details of those management practices implemented by your suppliers that have other impacts besides climate change mitigation/adaptation.

Management practice reference number
MP1

Overall effect
Positive

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

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

Have any response to these impacts been implemented?
Yes

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

C14. Signoff

C-FI

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

C14.1

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

<table>
<thead>
<tr>
<th>Job title</th>
<th>Corresponding job category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>Head of Investor Relations and Sustainability</td>
</tr>
</tbody>
</table>

SC. Supply chain module

SC0.0

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

Sappi Europe (SEU) is the largest fine paper producer in Europe and one of the largest publication and speciality paper manufacturers. SEU operates six paper mills and one speciality mill in Europe of which six have integrated pulp production lines. Sappi North America (SNA) operates one paper mill, one speciality mill and one paper and dissolving wood pulp mill. In FY2018 SEU produced 51% of group sales, while SNA produced 25%.
SC0.1

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

<table>
<thead>
<tr>
<th>Annual Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>5806000000</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>ISIN country code (2 letters)</th>
<th>ISIN numeric identifier and single check digit (10 numbers overall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZA</td>
<td>E000006284</td>
</tr>
</tbody>
</table>

SC1.1

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

**Requesting member**
L'Oréal

**Scope of emissions**
Scope 1

**Allocation level**
Facility

**Allocation level detail**
Emissions from the fuel combustion are allocated equally per ton product at each mill.

**Emissions in metric tonnes of CO2e**
1681

**Uncertainty (±%)**
Major sources of emissions
Combustion of fuels at our own power plants.

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

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

**Requesting member**
L'Oréal

**Scope of emissions**
Scope 3

**Allocation level**
Facility

**Allocation level detail**
Emissions from purchased power are allocated equally per ton product.

**Emissions in metric tonnes of CO2e**
2648

**Uncertainty (±%)**
Major sources of emissions
Purchased power.

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased
Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

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

**Requesting member**
L’Oréal

**Scope of emissions**
Scope 3

**Allocation level**
Commodity

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

**Emissions in metric tonnes of CO2e**
979

**Uncertainty (±%)**
40

**Major sources of emissions**
Pulp production, fuel production. Industry average CO2 emission factors are used for most raw materials.

**Verified**
No

**Allocation method**
Allocation based on the chemical content of products purchased

---

**Requesting member**
Philip Morris International

**Scope of emissions**
Scope 1

**Allocation level**
Facility

**Allocation level detail**
Emissions from combusted fuels are allocated evenly over all products manufactured at the mills.

**Emissions in metric tonnes of CO2e**
6526

**Uncertainty (±%)**

**Major sources of emissions**
Combustion of fuels at our own managed power plants.

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

---

**Requesting member**
Philip Morris International

**Scope of emissions**
Scope 2

**Allocation level**
Facility

**Allocation level detail**
Purchased power is allocated evenly to all products manufactured at the mill.

**Emissions in metric tonnes of CO2e**
10323

**Uncertainty (±%)**

**Major sources of emissions**
Emissions from purchased power

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

---

In carbon footprinting, we follow the guidelines by the CEPI/Eurograph manual.
Requesting member
Philip Morris International

Scope of emissions
Scope 3

Allocation level
Commodity

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

Emissions in metric tonnes of CO2e
3939

Uncertainty (±%)
40

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

Verified
No

Allocation method
Allocation based on the chemical content of products purchased

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

Requesting member
Bank of America

Scope of emissions
Scope 1

Allocation level
Facility

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

Emissions in metric tonnes of CO2e
695

Uncertainty (±%)

Major sources of emissions
Combustion of fuels at our own operated power plant

Verified
Yes

Allocation method
Allocation based on mass of products purchased

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

Requesting member
Bank of America

Scope of emissions
Scope 2

Allocation level
Facility

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

Emissions in metric tonnes of CO2e
200

Uncertainty (±%)

Major sources of emissions
Purchased power/steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Invoices from the power supplier, consumption meters at the mills.
Bank of America

Scope of emissions
Scope 3

Allocation level
Facility

Allocation level detail
Allocated equally to all products at the mill

Emissions in metric tonnes of CO2e
1134

Uncertainty (±%)
50

Major sources of emissions
Emissions from manufacturing the raw materials, emissions from manufacturing the fuels.

Verified
No

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
This is our first year to report on Scope 3. We have relied on industry average CO2 factors for raw materials.

SC1.2

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

SC1.3

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

<table>
<thead>
<tr>
<th>Allocation challenges</th>
<th>Please explain what would help you overcome these challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing the different emission factors of diverse and numerous geographies makes calculating total footprint difficult</td>
<td>It is often difficult and time consuming to obtain data from suppliers in order to calculate Scope 3 emissions.</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>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.</td>
</tr>
</tbody>
</table>

SC1.4

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

SC1.4a

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

We are working to improve our use of the most up-to-date CO2-factors for our raw materials and constantly improving the accuracy of allocations of raw materials to products. We will first focus on our customers that are most engaged in GHG accounting.

SC2.1

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

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?
No
SC3.1

(SC3.1) Do you want to enroll in the 2019-2020 CDP Action Exchange initiative?
No

SC3.2

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

SC4.1

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

Submit your response

In which language are you submitting your response?
English

Please confirm how your response should be handled by CDP

<table>
<thead>
<tr>
<th>I am submitting my response</th>
<th>Public or Non-Public Submission</th>
<th>I am submitting to</th>
<th>Are you ready to submit the additional Supply Chain Questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am submitting my response</td>
<td>Public</td>
<td>Investors</td>
<td>Yes, submit Supply Chain Questions now</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customers</td>
<td></td>
</tr>
</tbody>
</table>

Please confirm below
I have read and accept the applicable Terms