C0. Introduction

C0.1

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

Associated British Foods is a diversified international food, ingredients and retail group with sales of £15.6bn, 137,000 employees and operations in 50 countries across Europe, southern Africa, the Americas, Asia and Australia. Our purpose is to provide safe, nutritious, affordable food and clothing that is great value for money. The group operates through five strategic business segments: Grocery, Sugar, Agriculture, Ingredients and Retail. We aim to achieve strong, sustainable leadership positions in markets that offer potential for profitable growth and deliver quality products and services that are central to people's lives.

Each business in the group enjoys a high degree of autonomy in the running of their operations, but at the heart of the way we operate is a principle of 'value together' – the benefit the group gains from each business being part of the larger organisation.

Grocery comprises consumer-facing businesses that manufacture and market a variety of well-known food brands both nationally and internationally. Some of its best-known household brands include Twinings, Ovaltine, Ryvita, Kingsmill, Silver Spoon, Tip Top, Mazola and Spice Islands. George Weston Foods in Australia enjoys a 75% penetration of Australian households.

AB Sugar - The heart of our business is making and selling sugar, but we do much more than that. As well as 'core products', made from sugar beet and sugar cane, we also make 'co-products', which can include anything one or two 'steps' away from the sugar- making process: animal feed, soil conditioners, electricity, bioethanol and seed enhancements. Our operations are in the UK, Spain, southern Africa and north China. In the EU, Azucarera is the major producer in Iberia and British Sugar is the sole processor of the UK sugar beet crop and is one of Europe's most efficient processors. Illovo Sugar is the biggest sugar processor in Africa and is one of the world's foremost low-cost producers. We also have a beet sugar business in north China. The group currently operates in ten countries and has 24 factories with the capacity to produce some 4.5 million tonnes of sugar. We also have the capacity to generate power sufficient to meet most of our internal needs and, in a number of locations, we export power to the national grid.

AB Agri operates at the heart of the agricultural industry. Our unique breadth and experience enable us to add value all along the food, drink and biofuel industry supply chains. AB Agri supplies products and services to farmers, feed and food manufacturers, processors and retailers. We also buy grain from farmers and supply crop inputs through our joint venture arable operation, Frontier Agriculture.

Ingredients comprises a number of businesses that supply a range of ingredients to food and non-food manufacturers. AB Mauri has a global presence in bakers' yeast with significant market positions in The Americas, Europe and Asia, and is a technology leader in, and supplier of, bread improvers, dough conditioners and bakery mixes. ABF Ingredients comprises businesses focusing on high- value ingredients for food, feed, pharmaceutical and industrial applications.

Primark is one of the largest clothing retailers in Europe. Primark employs more than 75,000 people across eleven countries across Europe and the US. Primark offers customers value for money clothing in more than 360 stores and 14.8 million square feet of retail selling space.

We have always had a decentralised approach to doing business. Operational decisions are made locally because, in our experience, they are most successful when made by the people who have the best understanding of their markets and who have to implement them. This culture of setting strategy and priorities locally gives our businesses an advantage in being able to swiftly respond to local market, environmental and people issues. The corporate centre aims to provide a framework in which our business leaders have the freedom and decision-making authority to pursue opportunities. The centre is small and uses short lines of communication to ensure prompt, incisive and unambiguous decision-making. It seeks to ensure that business activities are appropriately monitored and supported.

We believe we have a duty of care in the way we do business, including; how we employ people and develop careers, ethical and environmental standards in our many supply chains, health and safety, appropriate funding of pensions and to conserve, and where possible, enhance the environments in which we operate.

C0.2

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

Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
August 1 2017	July 31 2018	No	<Not Applicable>

C0.3

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

Argentina Australia Austria Belgium Brazil Canada Chile China Colombia Czechia Denmark Ecuador Finland France Germany India Ireland Italy Malawi Malaysia Mexico Mozambique Netherlands New Zealand Pakistan Peru Philippines Poland Portugal Singapore South Africa Spain Sri Lanka Swaziland Switzerland Thailand Turkey United Arab Emirates

United Kingdom of Great Britain and Northern Ireland United Republic of Tanzania United States of America Uruguay

Venezuela (Bolivarian Republic of) Viet Nam Zambia

C0.4

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

GBP

C0.5

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

Other, please specify (Operational entities where we have 40% + ownership)

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

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

	Relevance
Agriculture/Forestry	Own land only [Agriculture/Forestry only]
Processing/Manufacturing	Direct operations only [Processing/manufacturing/Distribution only]
Distribution	Direct operations only [Processing/manufacturing/Distribution only]
Consumption	No

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

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

Row 1

Primary reason

Other, please specify (We have looked at this as a whole and judged it not to be a current priority due to the complexity of our operational structure and range of products. Nonetheless, individual businesses have calculated emissions from consumption such as GWF's LCA.)

Please explain

A proportion of our products, for example bread, tea, ethnic foods, animal feed, clothes, soft furnishings and bioethanol are consumed directly without any further processing. As we do not directly control our operating companies, we are currently

unable to obtain the granular data needed to assess this category across all product portfolios. We have looked at this as a whole and judged it not to be a current priority due to the complexity of our operational structure. At a divisional level, our UK Grocery Group are signatories to Courtauld Commitment 2025 to work along the entire food chain to reduce the environmental impact of food and drink; to make food and drink production and consumption more sustainable. George Weston Foods has also conducted Lifecycle Analysis of their products with certain customers and other businesses are considering whether to calculate emissions from consumption of their products to collaborate with customers or respond to increasing interest from other stakeholders.

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

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

Agricultural commodity

Sugar

% of revenue dependent on this agricultural commodity

10-20%

Produced or sourced

Both

Please explain

Our sugar businesses represent approximately 10% of the group's revenue in the reporting year. Sugar represents the single largest emission contributor to the group. GHG emissions (Scopes 1, 2 and 3) from our sugar businesses contributed 56% to ABF's group emissions and 82% of the group's overall energy usage.

Agricultural commodity

Cotton

% of revenue dependent on this agricultural commodity

40-60%

Produced or sourced

Sourced

Please explain

Cotton is sourced by our retail business Primark for use in clothing and other goods such as soft furnishings. Primark's revenue represents approximately 50% of the group's revenue in the reporting year.

Agricultural commodity

Wheat

% of revenue dependent on this agricultural commodity

Less than 10%

Produced or sourced

Sourced

Please explain

Wheat is sourced primarily by our bakeries and other grocery businesses in the UK.

Agricultural commodity

Soy

% of revenue dependent on this agricultural commodity

Less than 10%

Produced or sourced

Sourced

Please explain

Soy is an ingredient used primarily by AB Agri as a key component in animal feed. AB Agri has been instrumental in the publication of the Soy Sourcing Guidelines by European Feed Compounders Association (FEFAC) as an important first step in encouraging the use of responsibly produced soy in mainstream European supply chains. AB Agri's ambition is to source 100% of soy from certified responsible sources by 2024. Other business segments sourcing soy include our Ingredients and Grocery divisions. For example, within Ingredients, PGP International has responded to an increased market interest in consuming plant-based protein by introducing a soy ingredient that can be used to bake high-protein snacks, cookies and energy bars. AB Mauri UK has maintained its 'BM Trada Responsibly Sourced' accreditation which means there is a direct link between the soy or soy cognate they source and place of origin, which should be an internationally certified farm dedicated to soy production.

Agricultural commodity

Other, please specify (Tea)

% of revenue dependent on this agricultural commodity

Less than 10%

Produced or sourced

Sourced

Please explain

Our tea business is Twinings which sells premium teas and malted beverages in more than 100 countries. Tea is sourced from 160 tea gardens; a mix of large plantations and smallholder farms and Twinings has full traceability for the tea they source. For more information about Twinings' approach to sourcing tea, see their Social Impact report at www.sourcedwithcare.com.

C1. Governance

C1.1

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

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate- related issues.

Position of individual (s)	Please explain
Chief Financial Officer (CFO)	The Chief Financial Officer (equivalent title to Chief Risk Officer and termed Group Finance Director within ABF) is accountable at board level for matters relating to risk and opportunity management, of which climate change is included. The Chief Financial Officer is a member of the Executive Board. Responsibility for risk management lies with the Chief Financial Officer, reporting to the Audit Committee, and therefore has the ability to review, influence and monitor changes at a group level.
Other C-Suite Officer	The Group Company Secretary is accountable at board level for matters relating to corporate responsibility including climate change management. The Company Secretary position reports into the Chief Executive Officer and is a board member, and therefore has the ability to review, influence and monitor changes at a group level. Any environmental risks that have a high and immediate likelihood are reported to the Group CEO via the Group HR Director and the Group Company Secretary.
Chief Executive Officer (CEO)	The Group CEO receives and reviews a summary of risks, including environmental and climate risk, from each division at least annually. In addition, environmental risks that have a high and immediate likelihood are reported to the Group CEO via the Group HR Director, and the Group Company Secretary. Otherwise, environmental and climate risks are incorporated into the group's standard risk processes.
Board-level committee	The board as a whole is responsible for overall risk management for ABF. As climate change is integrated into groupwide risk assessments, the board has ultimate responsibility for all risk related to climate change.

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 risk management policies Reviewing and guiding business plans Monitoring implementation and performance of objectives Other, please specify (Reviewing and guiding corporate responsibility strategy)	Our decentralised business model empowers the management of our businesses to identify, evaluate and manage the risks they face, on a timely basis, to ensure compliance with relevant legislation, our business principles and group policies. The risk assessments consider materiality, risk controls and the likely impact against a range of criteria such as business objectives, health and safety, financial performance, the environment, climate change, local communities, regulation and reputation. The collated risks from each business are shared with the respective divisional chief executives who present their divisional risks to the group executive. The group's Director of Financial Control (equivalent title to Chief Risk Officer and Chief Financial Officer) receives the risk assessments twice a year and, with the Group Finance Director, reviews and challenges them with the divisional chief executives. These risks and their impact on business performance are considered as part of the divisional performance updates to the board conducted at each meeting. In parallel, a summary of divisional risks is shared and discussed between the Group Finance Director and Chief Executive at least annually and shared with the board twice a year as part of the formal risk assessment process.

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
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	Half-yearly

C1.2a

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

1) Where in the organisational structure the position lies & why responsibility lies here

The Chief Sustainability Officer (CSO) is the position with highest level management responsibility for climate-related issues. The CSO reports to the Company Secretary who in turn reports to the Chief Executive. Responsibility lies here because the CSO has this direct link to the board by reporting into the Company Secretary. The board is accountable for ensuring that risk is successfully managed; climate-related issues are integrated into the group's risk assessment process.

The CSO is part of the legal compliance team but has a broad remit to cover all aspects of environment, social and governance (ESG) issues including internal communication and external reporting of ABF's sustainability performance. A part of this role is to facilitate positive change and support the businesses with their approach to corporate responsibility; sharing good practice, providing tools and resources and being a central point for corporate responsibility (CR) issues which includes climate-related risks and opportunities. ABF also has a Group Health, Safety and Environment (HSE) Manager. Part of this role is to support the businesses with their environmental performance and, as such, works with the CSO and CR Leaders in the businesses. The Group HSE Manager reports into the Group HR Director who also reports to the Chief

Executive.

The CSO is also a member of the Committee on Climate Change's Adaptation Committee, an independent, statutory body established under the Climate Change Act 2008. The Adaptation Committee's purpose is to provide advice to the UK Government and Devolved Administrations on preparing for and adapting to climate change. The knowledge and skills required to fulfill the CSO role contribute to the expertise required for the Adaptation Committee.

2) Description of responsibilities

The CSO is responsible for both assessing climate-related risks and opportunities and works with the CR Leaders and finance teams in the businesses to help manage these risks. The CSO chairs the CR Leaders Group which addresses a range of issues including climate change. Our decentralised business model empowers the management of our businesses to identify, evaluate and manage the risks they face, on a timely basis, to ensure compliance with relevant legislation, our business principles and group policies.

3) Description of specific climate-related issues monitoring

Climate-related issues are integrated into the overall group risk management and performance processes; risks are initially identified at site level, channelled to the business level, followed by the business segment and then collated at group level. An aggregated summary of risks, including environment and climate, is reviewed by the Director of Financial Control (equivalent title to Chief Risk Officer), Group Finance Director, Chief Executive and ABF's board at least annually. In parallel, the CR and HSE Leaders Groups meet throughout the year to identify and discuss groupwide and business- or geographic-specific issues such as climate change, water stewardship and deforestation. In addition, the CSO is responsible for reporting ABF's climate related disclosures, working with the CR Leaders, risk, finance and HSE to obtain performance data and activities for reporting purposes to investors, benchmarks and other external stakeholders. As well as providing annual performance data on emissions, the businesses are also required to supply the CSO with annual examples of carbon-related activities and updates to strategies or policies directed at climate change.

CR and HSE Managers from our five business segments are members of the groups as well as representatives from Finance, Procurement, Risk Management and Communications. These groups are chaired by the CSO, reporting to the Company Secretary and Group HSE Manager reporting to the Group HR Director.

For further detail and a graphic to show this, see Our CR Reporting Guidance 2018 at https://www.abf.co.uk/documents/pdfs/2018/abf_cr18_guidance_doc_2018.pdf

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

Recognition (non-monetary)

Activity incentivized

Energy reduction project

Comment

Due to the importance of sugar to the group, we include here the example from Illovo Sugar Africa (Pty) Ltd: Climate change mitigation related indicators are directed at initiatives and advancements in clean technology, energy efficiency, waste avoidance and overall greenhouse gas (GHG) emission reduction within their operations. Climate change adaptation related indicators are directed at ensuring a sustainable cane supply; both within own agricultural operations and from third party cane providers and include water and crop resilience indicators.

C2. Risks and opportunities

C2.1

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

	From (years)	To (years)	Comment
Short-term	1	3	Our businesses can make swift changes to their operations, with limited impact on operating costs, to adapt to changes in weather patterns or other climate-related issues. These are short-term horizons which can be incorporated into the annual budget and business planning processes.
Medium-term	3	10	A medium-term horizon will take into account wider value chain implications of any change to the business or operating model.
Long- term	10	30	We are a company which thinks long term, invests consistently in its assets and finances itself conservatively. Long-term horizons are harder to predict and therefore manage but nonetheless, our businesses consider the long-term future sustainability of their business model for example, availability of raw ingredients, availability of natural resources and changes in consumer behaviour so they are prepared to adapt and react to these changes if necessary.

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

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	Our decentralised model empowers our businesses to identify and manage risks on a timely basis to ensure compliance with legislation, our business principles and group policies. The risk assessments consider materiality, risk controls and likely impact against a range of criteria such as objectives, HSE, financial performance and reputation. ABF: An aggregated summary of risks including climate is reviewed by the Chief Risk Officer, Group Finance Director, Chief Executive and the board at least annually. Division: Each division collates risks biannually from their businesses. This is shared with the Chief Risk Officer who reviews and challenges them with the Group Finance Director and divisional CEOs. Business: Each business completes a risk assessment biannually in a format prescribed by the board. It is submitted to the divisional CEO who presents these to the group executive. Asset: Risk assessments start at the site level with consideration for immediate environmental risks.

C2.2b

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

ABF is a company which thinks long term, invests consistently in its assets and finances itself conservatively. Our decentralised model empowers the management of our businesses to identify and manage their risks on a timely basis to ensure compliance with legislation, our business principles and group policies.

1) Scope of risk management

ABF's board has ownership for the management of risks such as the environment and climate, energy and carbon. The

board reviews the material financial and non-financial risks and opportunities facing our businesses and, on a rolling cycle, reviews the effectiveness of the risk management process, control procedures and resources our businesses devote to them. Detailed risk assessments are managed by individual businesses across all their operating sites. Environmental risks that have a high and immediate likelihood are reported to the Group CEO via the Group HR Director, who has day to day responsibility for environmental issues, and the Group Company Secretary who has overall responsibility for the group's approach to corporate responsibility.

Otherwise, climate risks are incorporated into the group's standard risk processes.

2) Business and divisional level

The Internal Audit function reports to the board and maintains regular liaison with individual businesses and divisions. It identifies the risks arising from business activities and confirms the measures to deal with major risks by averting, minimising, transferring or retaining them. Risks are assessed on a short, medium and long-term basis which is 10+ years in the future. The frequency of assessment of identified risks takes place biannually. Each business completes its own assessment, in a format prescribed by the board, which is signed by their CEO and submitted to ABF. It highlights their main business risks and includes climate risks where relevant. These assessments are reviewed by ABF's board at least once a year.

3) Asset level

Risk assessments start at the asset level with each site taking responsibility for assessing their immediate environmental sensitivities and risks, usually related to effluent, water extraction, energy usage, all emissions and odours. These assessments are reported to the business CEO and onto to the Group CEO via the Group's Director of Financial Control (equivalent role to Group Risk Officer).

4) Assessing risk relativity

Each business is responsible for completing its own risk assessment using site level assessments and considering longer-term business objectives. We require all businesses to implement appropriate levels of risk management to ensure compliance with legislation, group policies and business principles considering business needs and local circumstances. Criteria for determining materiality and priorities include:

a. Risk of legal non-compliance/health and safety/physical environmental damage/reputation;
b. Pollution or nuisance/offence to neighbours;
c. Opportunity for enhanced financial return/client acquisition/revenue streams;
d. Ease of achievement.

5) Terminology

ABF has a Risk Assessment Policy and process; risks are quantified at site level, collated at business level and then raised to ABF on a 6-monthly basis. Contributing to the risk assessments, each is required to complete an annual return on environmental performance and provide evidence that all significant aspects of such performance have been reviewed at board level. Non-financial risks are mapped on a risk impact matrix which considers stakeholder concern and assesses likely level of impact. They are classified into 'business', 'operational', 'financial' and 'project' risks. It is the responsibility of the CEO of each business to embed assessments into their business and implement necessary response strategies.

6) Substantive impact

ABF defines substantive change in our business, operations, revenue or expenditure as change which could eventually result in a financial impact on the group e.g. affecting our group's ability to generate profit or through movements in our share price. A material change could also be one that impacts our ability to continue supplying our valuable customers. An event that may receive attention from national or international media may be considered as potentially material to the group. If a change stopped ABF from being a socially useful business or conducting our activities in a socially responsible way, that would be classified as substantive change. ABF consists of five segments or divisions; a substantive risk to ABF as a whole is very rare because if something impacts one segment, the other four will continue to operate and it is unlikely to move the group's share price. However, if climate risk is not managed effectively, operating and production costs relating to the impact of carbon and of crop risk can be substantive especially in our carbon intensive operations such as sugar. As such there is a strong focus on managing energy and carbon efficiently.

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Increased administrative burdens and costs associated with existing and new cap and trade schemes where ABF has large manufacturing facilities or operations. In addition, without a comprehensive international agreement, inconsistent climate change policies may result in inconsistent schemes and market distortions. For example, when considering investment in co-generation equipment in South Africa, Illovo reviews the policy environment which would favour new investments into climate change initiatives such as energy agreements and feed-in tariffs. How this is included in the risk management process: each business is responsible for monitoring changes to the cap and trade legislation, and other relevant carbon tax schemes, and ensuring they remain compliant. Where changes to schemes take place, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.
Emerging regulation	Relevant, always included	There are increased direct and indirect costs associated with existing and new carbon taxes impacting ABF's operations. One example of a carbon tax that affects ABF is the UK's CRC scheme. We anticipate other countries adopting similar schemes in the near future. For example, in South Africa, where we have six sites, the first carbon-tax phase will be introduced in 2019. A part of this tax is that the non- anthropogenic component of bagasse and biomass will be taxed, and therefore Illovo will be exposed to the carbon tax in South Africa even if it phases out its fossil fuel consumption. How this is included in the risk management process: each business is responsible for monitoring changes in carbon tax schemes and other climate related legislation and developing processes to ensure compliance once the legislation is confirmed. Where changes to schemes take place, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.
Technology	Relevant, sometimes included	Changes in technology can lead to a positive or negative impact on ABF operations. If new technology supports processes becoming more efficient then there is the opportunity to reduce costs. If implementing technology leads to more costs, then this can impact our ability to deliver sound financial results. Our businesses constantly investigate technological and infrastructural alternatives when managing climate change related risks. For example, Illovo promotes on-going energy optimisation enhancements to reduce overall energy footprints and reduce emissions through the optimum combustion of fuels through technology. Illovo has installed variable speed control to regulate irrigation pumps and drive more efficient use of energy. For example, in response to energy price volatility and a drive to reduce energy consumption, Allied Bakeries implements energy reduction plans maximising available technologies. These include LED-type lighting for production areas and offices, movement sensors, electrical control panels for the fans in the bread coolers and other intelligent control systems so that electricity and gas are only used only when production dictates. How this is included in the risk management process: each business is responsible for the identification of new and more efficient technologies. Where these are identified, each business undertakes cost benefit analysis which is reported up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.
Legal	Relevant, always included	As with regulatory risk, increased legal requirements can place additional costs on the business to ensure compliance is achieved and maintained across the impacted geographies. How this is included in the risk management process: each business is responsible for monitoring ensuring compliance with all relevant regulation and legislation in the geographies in which they operate. Where non- compliance has been identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.

Market	Relevant, sometimes included	Market risk can impact the income ABF receives for its products. The availability of raw materials, which may be impacted by weather changes, can lead to a change in price for those materials such as sugar or cotton. Changes in the markets across our operations can impact either positively or negatively due to the supply/demand curve. In addition, market changes can include tariffs, quotas and other levies. How this is included in the risk management process: each business is responsible for monitoring shifts in local and international markets. Where shifts in market trends are identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.
Reputation	Relevant, always included	With increased scrutiny of climate change and sustainability performance by investors such as Legal & General Investment Management who are looking into the group's consolidated climate impact and NGOs across the value chain we recognise that there may be a risk that our performance is not communicated effectively or valued sufficiently thereby reducing demand for our goods and services. How this is included in the risk management process: each business is responsible for engaging with stakeholders and monitoring local media for anything that may impact reputation. Where potential risks to reputation are identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures.
Acute physical	Relevant, always included	Unanticipated natural phenomena such as fires and flooding may impact availability of key agricultural raw materials such as sugar or cotton in our supply chain or commodities on our own land. These risks have the potential to increase operational cost, disrupt the value chain and impact our ability to do business. There is also a connected risk related to the ability of our employees to travel to work and therefore a risk to the operation of our businesses. How this is included in the risk management process: each business is responsible for understanding the risks pertinent to each location in which they operate. Where potential risks are identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.
Chronic physical	Relevant, always included	Changes in precipitation, temperatures and other local weather patterns may impact availability of key agricultural raw materials and commodities such as sugar and cotton crops in our supply chain or on our own land. This risk has the potential to increase operational cost, disrupt the value chain and impact our ability to do business. How this is included in the risk management process: each business is responsible for understanding the risks pertinent to each location in which they operate. Where potential risks are identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.
Upstream	Relevant, sometimes included	Some of ABF's businesses rely on other manufacturers and suppliers to be able to produce their end product. Each of these suppliers also face the risks that impact ABF directly. Working in partnerships with our suppliers and industry bodies helps us to understand and minimise the impact of these risks. For example, Illovo monitors upstream transport emissions and works with their growers to improve resilience against climate change impacts. How this is included in the risk management process: each business is responsible for understanding the risks pertinent to each location in which they operate. Where potential risks are identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.

Downstream	Relevant, sometime s included	Market pressure and other risks mentioned above impact ABF's customers as well as ABF directly. If the demand drops, then this would impact the financial stability of the business. Working in partnerships with our suppliers, industry bodies and retail customers helps us to understand and minimise the impact of these risks. For example, Illovo monitors GHG emissions in its downstream transportation of sugarcane and sugar products to its customers. How this is included in the risk management process: each business is responsible for monitoring shifts in local and international markets. Where shifts in market trends are identified, each business reports this up to Group level via the named senior manager or director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, who is the Group's Director of Financial Control, as per the company procedures. We use our own internal prescribed risk matrix for this process.

C2.2d

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

The board of ABF takes ownership for management of risks which include energy, climate, raw material, supply chain, product and customer risks and opportunities. Environmental risks considered as having a high and immediate likelihood are reported to the Group CEO via the Group HR Director, who has day to day responsibility for environmental issues, and the Group Company Secretary who has overall responsibility for the group's approach to corporate responsibility. Otherwise, environmental risks are incorporated into the group's standard risk processes as below.

1. **Process for managing risk and opportunities**

At business level – The Internal Audit function, which reports to the board, maintains regular liaison with each business. It identifies and evaluates the risks and opportunities arising from business activities and confirms the detailed measures intended to deal with major risks by averting, minimising, transferring or retaining them or by maximising the potential opportunities. The business's CEOs are responsible for their risk management, supported by a named director and a named senior manager who are accountable for the short and long-term environmental performance. This includes creating the business case for investing in opportunities to mitigate or adapt to climate changes. Each business completes its own risk assessment in a format prescribed by the board which is signed off by their CEO and submitted to ABF twice a year.

Adaptation: The success of our operations reliant on agriculture is intrinsically linked to climate; changes in precipitation, the frequency of extreme weather events and temperature have the potential to impact individual businesses. Where relevant, our businesses are working on improving their resilience to projected changes and ensuring prospective opportunities are realised. In the short-term, this involves identifying operations with the greatest susceptibility to climate change and developing the means to strategically manage these impacts. In the long term, our businesses aim to gain competitive advantage through resilient and resource efficient operations.

Mitigation: The opportunity exists for our businesses to play a role in global GHG mitigation. To take advantage of this opportunity, our businesses are working to decrease consumption of non-renewable energy and increase generation and /or use of renewable energy where able to do so. In the short term, our businesses are focused on improving energy efficiency which includes improving management systems and investing in new technologies. In the long term, the opportunities associated with increasing market demand for renewable energy are driving, for example, Illovo's research and development activities in cogeneration and bioethanol. Over 95% of Illovo's electricity is generated from renewable sources and they have set targets to further reduce fossil fuel consumption.

At an asset level – Risk and opportunity assessments are cascaded to asset level with each factory taking responsibility for assessing their immediate environmental sensitivities, risks and opportunities, usually related to effluent, water extraction, energy usage, all emissions and odours. These assessments are reported via the named director to the business CEO and to the Group CEO via the Group's Head of Internal Audit, (equivalent role of Director of Financial Control), as per the company procedures. The Group HR Director and the Group Company Secretary contribute to the assessment of climate risks and opportunities.

2. **Case study**

a) Following site and business level risk assessments, with recognition of the short to medium term risks, Illovo and AB Sugar included Sezela's Sugar Mill energy risks, and strategies to mitigate them, into their risk assessment submission up to ABF. Following agreement from all engaged in the risk analysis and planning, Illovo's Sezela site initiated measures in 2016 to reduce energy use, associated energy costs and GHG emissions. The Sezela Coal and Energy Savings Project aimed to reduce coal and grid electricity requirements and costs during their cane crushing season and mitigate climate change through emission reduction. The site, which consists of a sugar mill and downstream furfural plant, requires supplementary

electricity from Eskom and coal to meet its on-site energy demand. The focus therefore was to improve plant efficiency and reduce the amount of electricity imported from Eskom through the optimisation of the site's own power generation potential. The Project, made of a series of smaller projects, projected to reduce coal consumption by 12,700 tonnes, reduce imported electricity by 21,000 MWh and significantly contribute to Illovo's GHG reduction targets (10.7% reduction in Scope 1 and Scope 2 emissions by 2020). To date, the Project has delivered 50% of the coal savings and 90% of the electricity requirements. Analysis of the Project continues with feedback to all internal parties.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

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., delayed planning approvals, supply chain interruptions)

Company- specific description

As described in our response to 2.2b, it is unlikely that one extreme weather event will create a substantive change to the ABF group. However, we recognise that continued changes in precipitation patterns and extreme variability in weather patterns could impact a number of our businesses and, at a consolidated level, start to generate a group risk. Increased severity of extreme weather events such as cyclones and floods and changes in precipitation and temperatures may damage infrastructure and impact availability of key agricultural raw materials and commodities. These weather events can contribute to lower harvests, infestations and constraints on water supply. These types of risk have the potential to increase operational cost, disrupt the value chain and impact our ability to do business.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Potential increase in costs arising from lack of access to raw materials of sufficient quality could impact revenues significantly depending on the severity and the location of the change in climate. Due to ABF's decentralised structure we do not have a consolidated impact figure however, each business manages this risk and related costs.

Management method

Measures used to manage the risk include: - Conducting risk assessments - Devising procurement strategies to spread risk - Analysing water risk at country level and investing in water efficiency programmes at local level - Investing in programmes to help farmers respond to climate change e.g. Twinings support the Ethical Tea Partnership which has specific programmes for climate change adaptation and mitigation. - Investing in new low-carbon technologies and fuel from renewable sources - Investing in energy efficiencies across our operations and alternative means of transport As demonstrated with these examples, multiple initiatives are run at operating company level to identify and mitigate these risks. This approach is in line with the group management philosophy of our businesses making decisions locally. We recognise that we operate in a number of geographies already experiencing changes to their micro-climate, with experiences of flooding, drought and seasonal weather variations. These physical risks are making energy efficiency, water conservation and other climate adaptation and mitigation activities priorities for those affected businesses.

Cost of management

Comment

Managing these costs is best devolved to our businesses that are closest to their supply chains and / or have their own land to manage. Given the materiality of the risk, management is an ongoing requirement with costs embedded into business as usual activities. Additional costs do arise as and when the corporate centre conducts strategic and tactical analysis to support our businesses. For example, Illovo's operations in Malawi and Mozambique have historically been prone to flooding. This can result in damage to infrastructure and loss in productivity. At these operations, Illovo is working on re-delineating flood risk zones and implementing and improving flood protection mechanisms. Illovo's flood mitigation measures at their operations in Malawi and Mozambique have demonstrated improved resilience and yielded improved results.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Increased stakeholder concern or negative stakeholder feedback

Type of financial impact

Reduced revenue from decreased demand for goods/services

Company- specific description

With increased scrutiny of climate change and sustainability performance by investors such as Legal and General Investment Management, NGOs and others across our value chain including customers, we recognise there may be a risk that our performance is not communicated effectively or valued sufficiently thereby impacting our reputation. In turn, this could negatively impact demand for goods and services across our businesses. There is also increasing and varying certification or standards required or favoured by different markets for different product lines. To ensure reputation is maintained and demand for our goods, it is necessary to respond to these requirements while balancing operational needs.

Time horizon

Current

Likelihood

More likely than not

Magnitude of impact

Low

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

The costs associated with reputational damage are likely to vary subject to the nature of the issue and the number of our businesses impacted. Consolidated at the ABF group level, the magnitude of impact is likely to be low however, we recognise this is a growing risk that our businesses are actively managing to ensure that ABF can respond to external stakeholder disclosure expectations. For example, ABF has introduced a new internal annual reporting process for our businesses to share their policies, strategies, activities and impacts across a range of sustainability issues with climate action featuring heavily to reflect the investor and NGO requests for greater detail in this area.

Management method

This is managed in a variety of ways:

1. Compliance with ABF's Environment Policy and annual reporting of environmental impact
2. Farmer assistance and support programmes and driving ethical and sustainable procurement practices through the value chain
3. Investment in measuring and reporting the group’s GHG emissions to comply with regulation and industry best practice 4. Substantial investment to improve environmental risk management with a focus on reducing emissions 5. Engagement with governments and NGOs to ensure the views of our stakeholders are represented. For example, Illovo implemented a stakeholder engagement programme to develop their sustainability management system that complies with international best practice in ingredient management systems. Illovo also developed and participates with SUSFARMS (Sustainable Sugarcane Farm Management Systems) in collaboration with WWF-SA, the Mondi Wetlands Project and the Noodsberg Canegrowers Association as part of their stakeholder engagement. One area in this initiative is climate change. 6. We have specific roles within the businesses with responsibility for keeping the boards informed of developments in climate action. In parallel, these roles help represent ABF and its businesses when contributing to the development of national and international policy and the thought leadership of organisational bodies. For example, AB Sugar contributed to the OECD FAO's Guidance for Responsible Agricultural Supply Chains.

Cost of management

Comment

The costs associated with managing this risk are ever-increasing as we continually improve our footprints in our own operations, aspire to do so throughout our supply chains and focus resources on monitoring and reporting our progress. The requirement to monitor climate action and increasing requests to disclose further details on our approach has contributed to some additional costs. We are investing time and resources in our assessment of climate-related risks and financial exposure across our portfolio with a roadmap for future disclosure of our work in this area.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Our African operations are preparing for the planned South African carbon tax, commencing in 2019, at a rate of R120/tCO2e increasing in real terms by 2% per year during the first implementation period (up to 2022). A basic tax-free threshold of 60% is proposed for the first period with further allowances for trade exposure, participation in the national GHG inventory accounting framework and good performance allowances. A key development is that the non-anthropogenic component of bagasse and biomass will be taxed, and by virtue of the raw material used, Illovo will be exposed to the carbon tax in South Africa even if it reduces its fossil fuel consumption.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency) Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact has been calculated, but not disclosed, based on the assumed payment required towards the proposed carbon tax. The impact is based on the projected energy spend for Illovo's 2018/19 year.

Management method

Illovo has Performance Optimisation Plans to improve energy efficiencies within their South African sugar mills with the aim to reduce consumption of purchased grid electricity and coal. One example is The Sezela Coal and Energy Savings Project initiated in 2016. The Project, made of a series of smaller projects, projected to reduce coal consumption by 12,700 tonnes, reduce imported electricity by 21,000 MWh and significantly contribute to Illovo's GHG reduction targets (10.7% reduction in Scope 1 and Scope 2 emissions by 2020). To date, the Project has delivered 50% of the coal savings and 90% of the electricity requirements. In addition, Illovo has planned their activities to ensure compliance with the reporting and verification requirements of the tax and is engaging with internal stakeholders, through briefing materials and workshops, to review their regional energy strategy which considers own operations, suppliers, the changing energy landscape and potential investments required.

Cost of management

Comment

The cost of management has been estimated based on the management of the reporting and verification requirements as well as developing the energy efficiency opportunities.

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

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

Increasing the demand for the bioethanol which we manufacture generates an additional income stream for our sugar business. The UK has set itself a target of 10% of transport fuel to come from renewable sources by 2020. This is in response to comply with a legally binding EU target to source 15% of energy from renewables.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

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

The Wissington sugar factory has the capacity to create 55,000 tonnes (70 million litres) of bioethanol each year from the residual sugar syrup products from sugar beet processing. This opportunity is managed commercially and generates revenues from the sale of bioethanol subject to the prevailing market conditions. Due to ABF's decentralised structure this figure is not consolidated.

Strategy to realize opportunity

We are currently producing biofuels in order to meet market demand and realise this opportunity. As one of the UK's leading agri- processors with an interest in innovative new technology, British Sugar began production of bioethanol in September 2007 making it the first company to manufacture bioethanol in the UK. The Wissington factory is managed under the AB Sugar operating company with its separate Profit and Loss and organisational governance processes. Market trends for biofuels are monitored and where required production capacity will be increased.

Cost to realize opportunity Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Participation in renewable energy programs and adoption of energy-efficiency measures

Type of financial impact

Other, please specify (Reduced operating costs)

Company-specific description

Carbon taxation schemes create additional financial incentives to reduce energy consumption and cut GHG emissions. In the UK, for example, the Climate Change Levy and the Carbon Reduction Commitment increase the cost of energy providing further incentive for energy efficiency and hence CO2 reduction investments. The Income Tax Act of South Africa makes allowance for a Section 12L tax deduction equivalent to 95c/kWh of energy saved, as determined by a Certified Measurement and Verification Professional (CMVP).

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

100000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The estimated financial implications of the opportunity to pay less ‘carbon tax’ for one of ABF’s operating companies is over £100,000, This is calculated based on the annual energy savings achieved in the facilities and the carbon allowance price under the UK’s CRC scheme.

Strategy to realize opportunity

Rigorous analysis of energy efficiency activities in operations covered by the CRC. Only a subset of ABF operations report to the CRC (offices and retail operations) within the current reporting year and the scheme requires reporting of emissions arising from electricity and natural gas. This year, employees from AB Sugar, AB Mauri, ABF Ingredients and ABF moved into their new head office in Peterborough, UK. The environment has been a strong focus in the building’s design, particularly in energy and water efficiencies. Energy efficiency plays a significant role within the new building; the positioning and size of the windows allow for minimal artificial lighting, PV roof panels are installed and a high thermal mass construction combined with bris soleil helps to regulate the temperature of the building. In addition, there is the provision of electric charging points for employee cars and the recycling of rainwater.

Cost to realize opportunity

Comment

This cost includes managing and implementing the emissions reduction strategy.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Resource substitutes/diversification

Type of financial impact

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

Company-specific description

Changes to weather and precipitation patterns have the potential to impact the availability and cost of water in our supply chain and to our operations. By working with our agricultural supply chain as well as managing our water use and identifying effective mitigation and adaptation activities, we can potentially control costs and create competitive advantage in comparison to our competitors.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

By managing scarce resources, ABF's businesses are able to manage supply and access to key raw materials as well as reduce water-related costs. Either of the above will enable ABF to manage operational costs and may provide a competitive advantage. Due to ABF's decentralised structure this figure is not consolidated.

Strategy to realize opportunity

Our companies have or are creating programmes such as water recycling to address their particular water issues and increase water efficiency. Recent and current activities include: • developing our understanding of global water stress through the use of a water risk management tool; • publicly disclosing information on our water use and how we are addressing water scarcity; • maintaining our focus on sugar production, our largest user of water, and developing more efficient ways to reduce water consumption; • improving how we collect data on water usage and increasing our knowledge of water throughout a product lifecycle; and • engaging with external stakeholders within the river catchments where we operate. For example, all AB Sugar businesses work with regional catchment councils where they operate in the UK, Africa, China and Spain.

Cost to realize opportunity

Comment

In line with our approach of making decisions locally, costs associated with this opportunity are mainly borne at business level and embedded as business as usual costs. At group level, management costs are also embedded into business as

usual costs. However, additional costs arise when conducting strategic/tactical analysis to support the operating companies.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Ability to diversify business activities

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

With an increasing demand for low carbon products and taking advantage of the requirement for homegrown renewable energy to support the UK economy, ABF operates Vivergo Fuels, a bioethanol facility in Hull. The highly efficient plant was officially opened in July 2013 and converts UK feed-wheat (wheat grown for animal feed) into bioethanol and animal feed. Over 900 farms in the North-east of England supply the plant with over 1.1m tonnes of feed wheat.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

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

This opportunity generates revenues from the sale of bioethanol. Running at full capacity of 420 million litres a year, Vivergo generated revenue in previous reporting years.

Strategy to realize opportunity

Vivergo Fuels produces high-quality bioethanol which it sells into the market with the objective of delivering a commercial return. Financial performance is managed through its own internal governance and reporting structures, which is then reported to its key investor stakeholders, including ABF, in line with their reporting cycles. To note: Vivergo Fuels closed shortly after the reporting period for CDP in September 2018. A low ethanol price, high wheat price and slow-growing bioethanol market hindered by the lack of the UK government to introduce E10 road fuel across the UK contributed to the reasons for closure.

Cost to realize opportunity

Comment

This cost, not disclosed, was the total investment in the facility required to generate this product.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Type of financial impact

Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company-specific description

Through a groupwide Utilities Forum, which examines issues such as energy market volatility, legislation and new technologies, we identify and share good practice from around our businesses so that the benefits can be replicated. A number of our businesses have also established energy management groups to identify and target energy efficiency opportunities. For example, George Weston Foods Energy Efficiency Working Groups work to: - identify energy efficiency opportunities via energy audits conducted at their sites to AS3598; - assist in the implementation of projects such as Smart LED Lighting, that show business case potential to save energy, reduce carbon emissions and meet technical, financial and operational feasibility criteria; and, - create a forum for regular communication and knowledge transfer on energy and carbon-related matters. AB Sugar's businesses have local energy champions who work in the factories to monitor energy use and identify opportunities for efficiency improvements. The community of energy champions across the sugar businesses share best practice and identify solutions to common energy issues.

Time horizon

Current

Likelihood

Virtually certain

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

Due to ABF's decentralised structure this figure is not consolidated but each business develops its own business case for implementing energy efficiency projects which have carbon reduction targets as well as a return on investment.

Strategy to realize opportunity

Our groupwide Utilities Forum and the energy management groups in our businesses are tackling a range of activities within their operations and with their suppliers. Many of these initiatives are in line with ISO50001 requirements and utilise the latest technologies which deliver economically viable solutions.

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

	Impact	Description
Products and services	Impacted for some suppliers, facilities, or product lines	Throughout ABF we utilise natural resources in our production processes. In some places and for some crops, such as sugar beet and cane, these are already being affected by changing weather patterns. For example, water and energy availability impacts production capabilities. For Illovo, the average downtime through non-availability of imported or co-generated electricity was 6.5%. This was driven mainly by low water levels affecting hydro-power supply. Our businesses monitor and measure the risks and opportunities facing them. This local approach allows each business to respond in the most appropriate manner for their operations. The magnitude of the impact could be significant at a business level but as our group consists of five segments, a substantive risk to ABF as a whole is very rare. If something impacts one business or segment, the other four will continue and it will unlikely lead to a move in the share price of the group.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Throughout ABF our supply and value chain depend on our ability to purchase and then produce goods for sale. These relationships can be, and in some places are already being, impacted by climate change such as through the supply of sugar beet and cane. For example Illovo's sugar cane suppliers experienced a significant reduction in cane production due to climate variability and drought, with Malawi and eSwatini experiencing the largest impacts. Our businesses monitor and measure the risks and opportunities facing them due to climate change. This local approach allows each business to respond in the most appropriate manner for their operations. The magnitude of the impact could be significant at a business level but as our group consists of five segments, a substantive risk to ABF as a whole is very rare. If something impacts one business or segment, the other four will continue and it is unlikely to lead to a move in the share price of the group.
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	As part of their business planning cycle, our businesses consider material impacts from climate change. At the local level, each business considers how to minimise the impact of climate change on their processes and supply chain, either by adapting their processes or mitigating the emissions they produce. For example, Illovo's Sezela Sugar Mill initiated measures in 2016 to reduce energy use, associated energy costs and GHG emissions. The Sezela Coal and Energy Savings Project aimed to reduce coal and grid electricity requirements during their cane crushing season. The site, which consists of a sugar mill and downstream furfural plant, requires supplementary electricity from Eskom and coal to meet its on-site energy demand. The focus therefore was to improve plant efficiency and reduce the amount of electricity imported from Eskom through the optimisation of the site's own power generation potential. The Project, made of a series of smaller projects, projected to reduce coal consumption by 12,700 tonnes, reduce imported electricity by 21,000 MWh and significantly contribute to Illovo's GHG reduction targets (10.7% reduction in Scope 1 and Scope 2 emissions by 2020). To date, the Project has delivered 50% of the coal savings and 90% of the electricity requirements. A further example is when water supply is interrupted due to climate change. The frequency of severe weather events affects normal annual rainfall distribution especially affecting Illovo's operations in Mozambique, Malawi and South Africa. Mitigating initiatives include investment in water infrastructure, pumps and pump stations as well as creating flexible milling capacity and power generation.
Investment in R&D	Impacted for some suppliers, facilities, or product lines	As part of their business planning cycle, our businesses consider material impacts from climate change. At the local level, each business considers which R&D programmes they should focus investment in to ensure they are reducing the impact of climate change on their operating model. ABF has a major technical centre in the UK at the Allied Technical Centre. Facilities also exist at ACH Food Companies in the US, Weston Technologies and AB Mauri in Australia and the Netherlands, and AB Enzymes in Germany. These centres support the technical resources of the divisions in the search for new technology and in monitoring and maintaining high standards. This has a big impact on the group.

Operations	Impacted for some suppliers, facilities, or product lines	ABF has operations in many countries which are facing the physical impact of climate change in different ways. In particular, more widespread droughts and torrential downpours have recently created risks to the secure supply of crops such as sugar and cotton. These, and other environmental issues, are material to our business if not managed correctly. We allow each business the autonomy to identify and respond to the most material risks they face. This local approach allows each business to respond in the most appropriate manner for their operations. The magnitude of the impact could be significant at a business level but as our group consists of five segments, a substantive risk to ABF as a whole is very rare. If something impacts one business or segment, the other four will continue and it is unlikely to lead to a move in the share price of the group.
Other, please specify	Please select	

C2.6

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

	Relevance	Description
Revenues	Impacted for some suppliers, facilities, or product lines	Our businesses consider all material risks and opportunities in their financial planning and risk management processes. From physical to reputation, the associated risks and opportunities could have an impact on revenues which is tracked at the business level. If climate change impacts our ability to produce or source the raw materials we use, there will be a direct influence on our ability to generate revenue. However, as our group consists of five segments, a substantive risk to ABF as a whole is very rare because if something impacts one business or segment, the other four will continue and it is unlikely to lead to a move in the share price of the group.
Operating costs	Impacted	When existing approaches to production and supply costs increase due to the impact of climate change, this becomes a core issue to the sustainability of our business model. There can also be reductions in operating costs as we invest in renewable energy projects that take our sites off-grid and even supply the grid with surplus energy generated on our sites. In the reporting year, 50% of the energy we used came from renewable sources, equal to 11,500GWh. At 92%, most of this renewable energy comes from bagasse from our southern African Illovo operations. Of the total energy we exported, 4% was biogas generated by AB Agri's UK anaerobic digestion plant which operated for its full year throughout 2018. In 2018, ABF as a group exported a total of 825GWh of energy.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	During the reporting year, our businesses invested substantially in environmental risk management of which significant amounts were spent on energy improvement, reduction and innovation. Capital funding is made available to all our businesses where returns meet or exceed clearly defined criteria. Investment into the management and adaptation towards climate change is managed at the local level. For example, capital has been allocated for the installation of an additional diesel generator at Illovo's Dwangwa site in Malawi to mitigate the risk associated with power supply constraints. The site has experienced power outages of up to two days.
Acquisitions and divestments	Impacted for some suppliers, facilities, or product lines	Acquisition and divestment decisions are primarily made by our businesses. For example, British Sugar in the UK closed factories to focus on four highly efficient sites to process 1.2 tonnage of sugar beet. A key focus for this divestment decision was to make the remaining factories more energy efficient. In the last six years British Sugar has invested £260 million in these four factories; a significant proportion of this has been in energy efficiencies.
Access to capital	Impacted for some suppliers, facilities, or product lines	It is recognised that access to capital at a group level may become more difficult as the impact of climate change is felt worldwide. This impact is low.
Assets	Impacted for some suppliers, facilities, or product lines	Our factories, estates, stores and offices are part of our asset disclosure. The impact of climate change on these ranges from the need to build or to adapt sites so they can utilise different energy sources. For example, a gas pipeline was installed at British Sugar's Cantley factory in order to convert an oil fired boiler to operate on natural gas. Following consultation and agreement with Norfolk County Council and National Grid, the gas line was installed from Burlingham to the Cantley site and came online in August 2017. The installation of gas supply to Cantley has enabled the site to operate on natural gas rather than oil.

Liabilities	Impacted for some suppliers, facilities, or product lines	Each business is responsible for the management of its liabilities. They report to the Audit Committee on any material liabilities that may impact the financial performance of the business and therefore factor all material risks into their financial planning cycles.
Other	Please select	

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?

No, but we anticipate doing so in the next two years

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

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

Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

No, we do not have a low-carbon transition plan

C3.1c

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

1. **Influence on business objectives and strategy:**

   It is ABF's policy that as a minimum we increase energy efficiency and reduce carbon emissions. Each business has responsibility for its environmental impact. Where climate risks and opportunities are prevalent in our businesses, particularly in agricultural activities in direct operations and supply chain, they form part of regular decision-making processes, are integrated into strategy development and are part of the group's risk management process. All businesses are also responsible for annually reporting to group their environmental performance and GHG emissions using a set of KPIs determined by ABF. This data contributes to our businesses setting their objectives.

1.1. **Climate change influences strategy** in a number of ways:

a) Legislative change: changes in energy regulation, the influence of taxation, incentives and other trade schemes have encouraged our businesses to identify more sustainable sources of fuel. This includes building our own Combined-Heat Plants (CHP) and outsourcing and working with others to obtain greater energy efficiencies. In the UK, legislation continues to evolve with the aim to simplify the landscape, replacing the CRC by increasing the Climate Change Levy and a new reporting framework in 2019 for which our businesses are preparing. In the EU, the Energy Efficiency Directive contributed to a number of interventions in our businesses. Germany's Renewable Energy Sources Act and the 2019 South Africa carbon tax have contributed to significant business decisions.

b) Physical climate change: climatic changes impacting the supply of sugar cane, beet and other commodities have placed pressures on our supply chains. In some cases, we have had to source raw materials from new regions or change our strategy around current supply. Our businesses continuously adapt to this and engage with key suppliers to address climate issues.

Westmill has developed a project with UNEP's Sustainable Rice Platform, International Rice Research Institute and a key basmati rice supplier in Pakistan. Due to climate change, Pakistan is predicted to be chronically short of water by 2025 and the area of cultivated rice land has reduced in recent years due to water shortages. The project aims to build supply chain resilience by improving water efficiency.

c) Societal change: Stakeholders require us to keep business strategy in line with climate changes. In 2017, British Sugar was recognised for its work in energy reduction and co-product development; shortlisted for The BITC Award for Environmental Leadership for their Resource Efficiency Programme Target 2020.

1.1.1 Short term strategy that has been influenced by climate includes innovation in energy generation technologies and increasing bioethanol production which displaces carbon intensive vehicle fuels. All 21 sugar-producing factories use CHP technology. Two factories use Combined Cycle Gas Turbine technology where approximately 80% of the energy in the fossil fuel is extracted for use in our factories.

1.1.2 Climate change has influenced long-term strategy with a focus on generating our own renewable electricity and phasing out fossil fuels, with considerable success. This year, 50% of ABF's energy use came from renewable sources. Improving efficiencies in our sugar factories allows us to use surplus steam to generate renewable electricity, more than is required for factory operations. The surplus electricity is sold to local networks, displacing fossil fuel powered energy.

1.2 Strategic Advantage: the climate agenda contributes to ABF's focus on energy efficiency and securing sustainable energy supply with a focus on managing energy costs. It is also creating commercial opportunities supporting growth of some businesses which are developing products or co-products such as bioethanol and sustainability services to help customers also respond to climate change.

2. Targets: 65% of our group's Scope 1, 2 and 3 emissions are under reduction targets, set at the business level and in line with their business strategy e.g, as part of their Formula 24 strategy, AB Agri has a target of 20% reduction in GHG emissions by 2024 (baseline 2013) and in 2018, AB Sugar publicly committed to reducing their end-to-end CO2 footprint by 30% by 2030. Each business has its own approach to reducing emissions whether through improving energy efficiency, providing low-carbon goods, reviewing transport networks or generating and using renewable energy.

3. Substantial decisions Our businesses have expanded into climate-change driven products which maximise commercial opportunities as well as replace GHG emissions from fossil fuel use through the generation of renewables e.g. at British Sugar's Wissington site, the first plant to manufacture bioethanol in the UK, the sugar biorefinery produces 55,000 tonnes of bioethanol annually from the residual sugar syrup products from sugar beet processing. As part of its horticultural business, the site also uses waste carbon dioxide from the sugar factory for the plants to use during photosynthesis.

Vivergo Fuels converts UK feed-wheat into bioethanol and animal feed. It has the capacity to produce up to 420 million litres of bioethanol. AB Agri channels a liquid co-product from Vivergo to feed a large number of anaerobic digesters (AD). The liquid is produced during the fermentation/distillation stage of bioethanol production. A proportion of this liquid was previously sent to landfill. However, using AB Agri's expertise in livestock nutrition to analyse the liquid, it was identified that its nutrient profile would help drive cost-effective gas production in AD. Last year, in the region of 60,000 tonnes of the co-product was marketed into a range of AD plants that generate power for the National Grid.

Our businesses are increasingly seeing the benefit of anaerobic digestion and investing in plants on site. These include AB Mauri and AB Sugar China. At British Sugar's Bury St Edmunds' site, the AD plant enables the business to produce renewable energy from sugar beet pressed pulp, the waste after sugars are extracted. The plant was designed to take approximately 100,000 tonnes of pressed sugar beet pulp per year, some fed directly during the beet harvesting campaign and some stored as bales for future use.

This provides a sustainable feed stock not taking up food producing arable land. The biogas generated feeds a CHP generating up to 5MW of electricity for export with additional heat recovery from the exhaust. Electrical generation via two gas engines is approximately 38,260 MW per year exported to grid, enough to power approximately 8000 average homes for a year. This contributes to meeting the UK's renewable energy targets under the Renewable Energy Directive. In the year, ABF generated 790 GWh of electricity mainly by our sugar and yeast factories in CHP plants; British Sugar sites contributed 84% of the total exported electricity.

C3.1g

(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?

During the year, we explored a number of the publicly available climate-related scenario analyses to build an understanding as to which approach may be suitable for our business model. Further work will be carried out over the coming two years to help inform decisions around climate-related scenario analysis. We also conducted a high-level assessment of our businesses against a 2°C and 4°C temperature increase and the potential impact on sourcing, manufacturing, packaging and distribution and customers and communities, considering physical and transition risks. This was shared with the Chief Risk Officer and other senior executives to help inform their thinking and build knowledge. It included suggestions for next steps including more work on identifying the best-fit scenario analyses, considering the decentralised structure of ABF and diversity of our business activities. We propose to explore this approach more from the ABF corporate centre over the coming two years in parallel with the work being conducted by individual businesses in the group.

Some of our businesses are also incorporating climate-related risk as part of their business strategy particularly where it is already having an impact on operations and availability of resources. As each business operates across different

geographies, sources different raw materials such as cotton, wheat and sugar, and also has different product lines, they are best placed to decide when they will implement an approach towards climate change based on scenario-analyses.

As part AB Sugar's business planning, medium to long-term scenarios are already incorporated with specific consideration for climate-related issues such as using fewer resources, future water availability, potential GHG emissions and availability of renewable energy sources. These scenarios are integrated into business strategy development through AB Sugar's management approach of seeking continuous improvement and implementing performance improvement plans. In 2018, AB Sugar also launched their 2030 commitments which required the segment to consider global warming scenarios over the next decade and potential impacts on their sugar businesses. With operations in multiple geographies, a number of physical risks, such as chronic water stress impacting agricultural productivity, and transition risks such as the carbon pricing, were factored into the development of the 2030 commitments.

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1+2 (location-based) +3 (upstream & downstream)

% emissions in Scope

100

Targeted % reduction from base year

30

Base year

2018

Start year

2018

Base year emissions covered by target (metric tons CO2e)

2800000

Target year

2030

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

In April 2018, AB Sugar launched its commitment to creating a sustainable future through its Global Minds, Local Champions sustainability framework. Global Minds, Local Champions sets out AB Sugar's global principles and priorities for how to address the emerging challenges faced across three broad pillars; economic, social and environment. The delivery of this approach is implemented on the ground by each of the AB Sugar businesses; AB Sugar China, Azucarera, British Sugar, Germains, Illovo and Vivergo. This approach ensures the framework is central to everything that our businesses do and also recognises the various challenges and demands each business faces in their countries of operation. Under the pillar of consuming resources responsibly, AB Sugar has committed to reducing its end-to-end supply chain absolute CO2 footprints by 30% (baseline 2018). In 2018, AB Sugar emitted 2.8 million tonnes of scope 1, 2 and 3 CO2e. As there have been only three months of activity against this commitment in the reporting year, we do not yet have performance data to report. More details will be provided in future CDP reports and AB Sugar's own reporting of performance against its 2030 commitments.

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

% emissions in Scope

67

Targeted % reduction from base year

20

Metric

Metric tons CO2e per metric ton of product

Base year

2011

Start year

2011

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

0.14

Target year

2019

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

% of target achieved

31

Target status

Underway

Please explain

This target refers to Illovo's Scope 1 energy consumption. Sugar production is expected to increase which will positively impact the proportion of renewable energy used in the sugar mills, leading to an impact in Scope 1 and 2 emissions. There will however be an increase in Scope 3 emissions since it is anticipated that increased quantities of sugar will need to be distributed from factories to customers.

% change anticipated in absolute Scope 1+2 emissions

1

% change anticipated in absolute Scope 3 emissions

C4.2

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

Target
Waste

KPI – Metric numerator

KPI – Metric denominator (intensity targets only)
The WRAP initiative Courtauld 2025 has set outcomes calculated as a relative reduction per head of population.

Base year
2015

Start year
2015

Target year
2025

KPI in baseline year KPI in target year

% achieved in reporting year

Target Status
Underway

Please explain
Our UK Grocery businesses are signatories to Courtauld 2025 which has the following targeted outcomes, from 2015 to 2025, calculated as a relative reduction per head of population: - 20% reduction in food and drink waste arising in the UK - 20% reduction in the GHG intensity of food and drink consumed in the UK - A reduction in impact associated with water use in the supply chain Our UK Grocery businesses are also signatories to The UK Plastics Pact which includes: - taking actions to eliminate problematic or unnecessary single-use plastic packaging items through redesign, innovation or alternative (reuse) delivery models; - 100% of plastic packaging to be reusable, recyclable or compostable; - 70% of plastic packaging to be effectively recycled or composted; and - 30% average recycled content across all plastic packaging.

Part of emissions target

Is this target part of an overarching initiative?
Other, please specify (Courtauld 2025)

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)

Under investigation	2	24000
To be implemented*	0	0
Implementation commenced*	2	6415
Implemented*	2	43692
Not to be implemented	0	0

C4.3b

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

Initiative type

Process emissions reductions

Description of initiative

Other, please specify (Green cane harvesting)

Estimated annual CO2e savings (metric tonnes CO2e)

18777

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4) Investment required (unit currency – as specified in C0.4) Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

In the financial year 2017/2018, on two sites in southern Africa, Illovo harvested green cane as opposed to harvesting following in- field burning. The extra biomass harvested was used as a renewable fuel within the boilers which resulted in 18,77 tCO2e avoided emissions.

Initiative type

Energy efficiency: Processes

Description of initiative

Other, please specify (A range of programmes including installation of new turbine and steam saving initiatives.)

Estimated annual CO2e savings (metric tonnes CO2e)

41815

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4) Investment required (unit currency – as specified in C0.4) Payback period

1-3 years

Estimated lifetime of the initiative

1-2 years

Comment

Illovo's Sezela site initiated measures in 2016 to reduce energy use, associated energy costs and GHG emissions. The Sezela Coal and Energy Savings Project aimed to reduce coal and grid electricity requirements and costs during their cane crushing season and mitigate climate change through emission reduction. The site, which consists of a sugar mill and downstream furfural plant, requires supplementary electricity from Eskom and coal to meet its on-site energy demand. The focus, therefore, was to improve plant efficiency and reduce the amount of electricity imported from Eskom through the optimisation of the site's own power generation potential. The Project, made of a series of smaller projects, projected to reduce coal consumption by 12,700 tonnes, reduce imported electricity by 21,000 MWh and significantly contribute to Illovo's GHG reduction targets (10.7% reduction in Scope 1 and Scope 2 emissions by 2020). To date, the Project has delivered 50% of the coal savings and 90% of the electricity requirements. Analysis of the Project continues with feedback to all internal parties.

C4.3c

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

Method	Comment
Financial optimization calculations	Emission reduction activities need to meet the usual investment criteria.

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

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

Yes

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

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

Management practice reference number

MP1

Management practice

Knowledge sharing

Description of management practice

AB Sustain provides independent expert advice both nationally and internationally to growers to improve the sustainability of their agricultural operations. AB Sustain also offers proven greenhouse gas modelling to reduce environmental impacts and to make financial savings. Further information about AB Sustain's supply chain work can be found at www.absustain.com. AB Sustain has received many awards from retailers and environmental groups for their work.

Primary climate change-related benefit

Emission reductions (mitigation)

Estimated CO2e savings (metric tons CO2e) Please explain

Due to the nature of the work and services provided to a range of customers, we are unable to quantify CO2e savings for the work conducted by AB Sustain.

Management practice reference number

MP2

Management practice

Seed variety selection

Description of management practice

Sugar cane variety development and cultivation aimed at increasing the resilience of our operations to water stress and pest vectors.

Primary climate change-related benefit

Increasing resilience to climate change (adaptation) **Estimated CO2e savings (metric tons CO2e) Please explain**

Management practice reference number

MP3

Management practice

Other, please specify (Green sugar cane harvesting)

Description of management practice

In our sugar cane operations in eSwatini, Malawi and South Africa, a proportion of our sugar cane is harvested without burning the cane in the field to remove unwanted leaves. Instead, the cane has the leaves removed manually without burning. This is very labour intensive but reduces the in-field burning and subsequent CO2 emissions and resultant particulate emissions.

Primary climate change-related benefit

Emission reductions (mitigation)

Estimated CO2e savings (metric tons CO2e) Please explain

Management practice reference number

MP4

Management practice

Low carbon energy use

Description of management practice

The owned sugar cane operations have their irrigation equipment powered by electricity generated from renewable resources. In addition. treated wastewater from sugar cane mills is used as irrigation water resulting in decreased river water abstraction and decreased irrigation energy requirements.

Primary climate change-related benefit

Emission reductions (mitigation)

Estimated CO2e savings (metric tons CO2e) Please explain

Management practice reference number

MP5

Management practice

Other, please specify (Nutrient Management)

Description of management practice

We recycle boiler ash and filter cake onto our own crops of sugar cane as organic sources of plant nutrients.

Primary climate change-related benefit

Emission reductions (mitigation)

Estimated CO2e savings (metric tons CO2e) Please explain

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

Group of products

Description of product/Group of products

AB Enzymes produces enzymes which improve industrial performance while preserving natural resources. For example, our enzymes help customers to lower the energy consumption required for the production of paper. We have also created enzymes that improve the effectiveness of laundry detergent, allowing consumers to save energy by washing their clothes at a lower temperature while achieving even better cleaning performance compared to detergents without enzymes.

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 (Internal calculations)

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

Visit www.abfingredients.com and www.abenzymes.com

Level of aggregation

Product

Description of product/Group of products

The manufacture of bioethanol from our Sugar businesses which is sold as a renewable transport fuel. In the reporting year, Vivergo Fuels produced bioethanol at its facility in Hull with the capacity to produce up to 420 million litres of bioethanol each year.

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 (Internal calculations)

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

Bioethanol is used as a renewable fuel for transport.

Level of aggregation

Group of products

Description of product/Group of products

All of AB Sugar's businesses adopt a circular economy approach - to make the most out of every stick of cane and root of beet so that wherever possible, there is minimal waste by producing co-products, generating renewable energy and reusing or returning water to source. For example, AB Sugar China sell co-products like molasses and animal feed as well as ash from their boilers which they use to supply factories to make bricks.

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 (Internal calculations)

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

Level of aggregation
Group of products

Description of product/Group of products
All of AB Sugar's businesses adopt a circular economy approach - to make the most out of every stick of cane and root of beet so that wherever possible, there is minimal waste by producing co-products, generating renewable energy and reusing or returning water to source. For example, Azucarera recycles 99% of waste from the sugar process and produces around 400,000 tonnes per year of co-products like animal feed and agricultural fertiliser. For the former, Azucarera can provide bespoke feed products tailored to the need of its customers. To decrease emissions in producing animal feed, they introduced a sun-drying pulp system instead of using mechanical dryers which reduces CO2 emissions by 13,000 tonnes per year at its factories.

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 (Internal calculations)

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

Level of aggregation
Group of products

Description of product/Group of products
All of AB Sugar's businesses adopt a circular economy approach - to make the most out of every stick of cane and root of beet so that wherever possible, there is minimal waste by producing co-products, generating renewable energy and reusing or returning water to source. For example, British Sugar makes over ten different co-products from the sugar making process, including animal feed, LimeX and topsoil – the non-core sales for which deliver approximately 21% of British Sugar's revenue. Across their four factories, they produce less than 200 grams of waste per tonne of sugar produced. In Bury St Edmunds, they use an Anaerobic Digester to turn over 100,00 tonnes of beet pressed pulp per year into enough energy to power over 18,000 homes. In our Wissington operations, we run an 18-hectare glasshouse which uses 46,000 MWh of excess heat from the factory and 250,000 tonnes of CO2 for horticulture.

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 (Internal calculations)

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

C5. Emissions methodology

C5.1

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

Base year start
September 1 2010

Base year end
August 31 2011

Base year emissions (metric tons CO2e)
2694910

Comment

Scope 2 (location-based) Base year start
September 1 2010

Base year end
August 31 2011

Base year emissions (metric tons CO2e)
911386

Comment

Scope 2 (market-based) Base year start
September 1 2017

Base year end
August 31 2018

Base year emissions (metric tons CO2e)
942354

Comment
2018 was our first year of calculating our scope 2 market-based emissions. We have accurate figures for around 64% from the businesses and will work to expand this to cover 100% of our portfolio in the coming years.

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.

Defra Voluntary 2017 Reporting Guidelines
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

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

Gross global Scope 1 emissions (metric tons CO2e)
3227870

Start date
August 1 2017

End date
July 31 2018

Comment

Associated British Foods' total Scope 1 emissions are 3,158,771 metric tons CO2e for the combustion of fuel and operation of facilities and 69,099 metric tons CO2e for the generation and use of renewables.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions. Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

This is our first year reporting our market-based scope 2 emissions and we are working with our businesses to develop a structured approach which can be evidenced. The first step has been to ascertain what information we can gather from the various energy suppliers across our global operations. This has had different levels of success depending on geography and the ability of suppliers to provide the requested information. We have been able to map 64% of our scope 2 emissions in our first year and are hopeful that as we continue to work with our energy suppliers we will be able to increase this figure and therefore the accuracy of our scope 2 market-based disclosure. This year where we have been unable to get an exact figure from suppliers, we have used the DEFRA/IEA conversion factors which are in general higher and therefore led to a higher overall emissions number.

C6.3

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

Scope 2, location-based

925045

Scope 2, market-based (if applicable)

942354

Start date

August 1 2017

End date

July 31 2018

Comment

We have calculated that our market-based emissions are just over 1.5% higher than our location-based emissions. This is due to the use of more accurate emission factors for a number of countries whereby emission factors were provided by our businesses which were nationally or locally specific to their use. Our location-based emissions were calculated using the carbon conversion factors published by BEIS in August 2018, other internationally recognised sources and bespoke factors based on laboratory calculations at selected locations. Therefore for this first year of reporting market-based emissions, we are reporting an increased figure compared with our location-based emissions. This increase has not been balanced-out by the amount of use of renewable energy reported by other businesses.

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
Landlord controlled office emissions

Relevance of Scope 1 emissions from this source
Emissions are not relevant

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

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

Explain why this source is excluded
We do not collect data from a limited number of small rented offices. Their contributions to the group's Scope 1 and 2 emissions are immaterial.

C6.5

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

Purchased goods and services

Evaluation status
Relevant, not yet calculated

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
We recognise that this source of emissions is material for Associated British Foods. However, we are a diverse business with many operating companies and we do not centrally control their operations. Therefore, we do not have the granular data to calculate the emissions in this category.

Capital goods

Evaluation status
Relevant, not yet calculated

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
The processing of sugar beet and sugar cane (which accounts for the majority of our total energy usage) requires very large plant and equipment and hence is capital intensive. We recognise that this source of emissions is material for our business.

However, we are a diverse business with many operating companies and we do not centrally control their operations. Therefore, we do not have the granular data to calculate the emissions in this category.

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

514314

Emissions calculation methodology

Emissions in this category were calculated from three distinct activities: (1) Upstream emissions (well to tank - WTT) of purchased fuels; (2) Upstream emissions from purchased electricity and district heating; (3) Transmission & Distribution (T&D) losses and associated WTT from purchased electricity. The source for emission factors for T&D losses is DEFRA 2017 (as no longer published for overseas electricity) while the emission factors for the other two sources are from DEFRA 2018, using country-specific or regional average emission factors for electricity.

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

100

Explanation

All emissions calculated were from the data supplied by ABF businesses for Scope 1 and Scope 2 in their annual data submission, assured by EY.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

813293

Emissions calculation methodology

We use DEFRA Voluntary 2017 Reporting Guidelines to calculate our upstream transportation and distribution emissions. We used standard factors from DEFRA's carbon emission factors list 2018 for all fuel.

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

100

Explanation

All emissions calculated were from the data supplied by ABF businesses for Scope 1 and Scope 2 in their annual data submission, assured by EY. Our transport emissions include those resulting from any transport movement that is dedicated to move something for us (raw materials, ingredients, packaging, processing aids, waste, part processed materials or finished product) and; the means of transport is either owned or leased by us; or we are invoiced directly by the sub-contractor for that transport movement. Our reported emissions includes the movement of goods via ships and aeroplanes.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

27438

Emissions calculation methodology

Waste generated in our operations includes hazardous and non-hazardous wastes and waste material which is reused, recycled or recovered. The tonnage of waste generated is assured by EY. DEFRA's 2018 waste disposal emission factors have been applied.

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

100

Explanation

All wastes generated by our businesses are monitored and reported on an annual basis to ABF. This data is verified by ABF's HSE Team and is also independently assured by Ernst & Young (limited assurance). The coverage of primary data is 100% and the quality of this data is very high. The emission factors are secondary data, supplied by DEFRA, and are not geographically representative. Therefore, the quality of the calculated and reported information here is deemed to be intermediate.

Business travel

Evaluation status

Relevant, not yet calculated

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

As a global business with activities in over 50 countries, our employees undertake international and national travelling by various means. We are a diverse business with many operating companies and currently we do not centrally hold the granular data to calculate the emissions in this category.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

40912

Emissions calculation methodology

Emissions from employee commuting are based on an estimation of the average distance travelled per number of employees per country multiplied by DEFRA 2018 emissions factors for private and public transport.

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

0

Explanation

The relevance or materiality of emissions from employee commuting is insignificant for our group and when estimated, account for less than 1% of ABF's total emissions. However, we recognise that with over 100,000 employees worldwide there is still a considerable amount of employee commuting. Nonetheless, given the varied locations of our sites, the nature of employee commuting will also be varied including most forms of private and public transport. As we have the raw data to calculate an estimate (using employee figures, national average commuting time and country emission factors), we have reported this data. We have factored in assumptions on the type of transport used. As such, the coverage of this data is high using employee figures but the calculations used are based on assumptions and therefore the overall quality of this data is considered to be below average.

Upstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1538

Emissions calculation methodology

Emissions from upstream leased assets are estimated based on CIBSE benchmark gas and electricity consumption per FTE at these sites and multiplied by DEFRA 2018 emissions factors for gas and IEA 2018 emissions factors for electricity. The calculation used is the asset-specific method using the FTE to determine floor space and therefore estimated fuel and electricity used in the year.

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

0

Explanation

The relevance or materiality of emissions from upstream leased assets is insignificant and account for less than 1% of ABF's total emissions. However, we have the raw data to estimate a figure and therefore report the data. The calculation used is the asset specific method using the FTE to determine floor space and therefore estimated fuel and electricity used in the year. The primary data uses information captured according to the number of employees and is therefore of good quality. Coverage of leased assets may not be highly accurate, based on available information, and the resultant calculations are based on estimates, therefore the final reported data is of below average quality.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

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

We have not yet calculated this due to the complexity and diversity of our business entities. However, a number of individual businesses are starting to assess their Scope 3 emissions from across their value chain with emissions from distribution being of particular interest, and high priority, for certain businesses.

Processing of sold products

Evaluation status

Relevant, not yet calculated

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

A proportion of our products such as sugar, yeast, edible oils and bakery ingredients are sold to other companies to be further processed and incorporated into their (mainly food) products. As we do not directly control our operating companies, we are unable to obtain the granular data on the destination of their products.

Use of sold products

Evaluation status

Relevant, not yet calculated

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

A proportion of our products such as bread, tea, ethnic foods, animal feed, clothes, soft furnishings and bioethanol are consumed directly without any further processing. As we do not directly control our operating companies, we are currently unable to obtain the granular data needed to calculate this category.

End of life treatment of sold products

Evaluation status

Relevant, not yet calculated

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

ABF's final food and other products are consumed by millions of people. As we do not directly control our businesses, we are currently unable to obtain the granular data needed to calculate this category. However, a small number of businesses are starting to assess the impact of their products and consider how to engage consumers in improving disposal of such products.

Downstream leased assets

Evaluation status

Relevant, not yet calculated

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

Any emissions from downstream leased assets are certain to be extremely small and not material when compared to our main emission sources, particularly as we do not lease out a significant amount of our assets.

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

We do not have franchises.

Investments Evaluation status

Relevant, not yet calculated

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

In previous years, we reported emissions from our joint ventures under Scope 3, Category 15 Investments. From this year, we have expanded our boundary for our total GHG inventory to include joint ventures over 40% ownership in our Scope 1 and Scope 2 emissions.

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

We are not aware of other upstream Scope 3 emissions.

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

We are not aware of any other downstream Scope 3 emissions.

C6.7

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

Yes

C6.7a

(C6.7a) Provide the emissions from biologically sequestered carbon relevant to your organization in metric tons

CO2. Row 1

Emissions from biologically sequestered carbon (metric tons CO2)

3711277

Comment

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

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

Yes

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

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

CO2 emissions from land use management

Emissions (metric tons CO2)

59372

Methodology

Default emissions factors

Please explain

Clearing the land of sugar cane on our own land in preparation for new crop rotation.

CO2 removals from land use management

Emissions (metric tons CO2)

0

Methodology

Other, please specify (Managed, not measured)

Please explain

We apply best management practices to manage the soil and CO2 emissions on our own land, as required under relevant certification schemes. This does not involve the measurement and reporting of CO2 removals.

Sequestration during land use change

Emissions (metric tons CO2)

0

Methodology

Other, please specify (Managed, not measured)

Please explain

We apply best management practices to manage the soil, CO2 emissions and sequestration on our own land, as required under relevant certification schemes.

CO2 emissions from biofuel combustion (land machinery)

Emissions (metric tons CO2)

0

Methodology

Other, please specify (Managed, not reported centrally)

Please explain

We collect data for fuels used in our own transport which includes land machinery and are reported in our aggregated Scope 1 emissions. We do have data at the granular level for different fuel sources used in land machinery across our operations.

CO2 emissions from biofuel combustion (processing/manufacturing machinery)

Emissions (metric tons CO2)

0

Methodology

Default emissions factors

Please explain

These emissions relate to biogenic fuels such as biomass, wood/wood waste, fuel crops and biogas used as fuels within our manufacturing operations. CO2 emissions from biofuel combustion in our processing and manufacturing are included in Scope 1 emissions.

CO2 emissions from biofuel combustion (other)

Emissions (metric tons CO2)

0

Methodology

Other, please specify (Not measured)

Please explain

The emissions from biofuel combustion are captured and reported in our group figures.

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

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

Agricultural commodities

Sugar

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

In April 2018, AB Sugar publicly shared its commitment to growing a sustainable future through its Global Minds, Local

Champions sustainability framework. One element of this commitment is to reduce end-to-end greenhouse gas emissions by 30% by 2030. AB Sugar works with its 6 sugar businesses (British Sugar, AB Sugar China, Azucarera, Germains, Illovo and Vivergo Fuels) to collect CO2e data from suppliers, collate own operations data and build a clear understanding of end-to-end emissions. Data reported here are from own-produced sugar cane and sugar beet which is processed by AB Sugar. Our Sugar businesses report their GHG emissions data once a year to ABF using the group's CloudApps system. From each site, data is collected from several inputs across agricultural activities (own land), transport, manufacturing process and energy use. The site SHERQ (safety, health, environment, risk and quality) Manager is responsible for analysing, challenging and signing off the data. The SHERQ Manager also engages with the business level Finance team who conduct a review across business aggregated data before it is submitted to AB Sugar's Finance team. Additional checks are conducted for the data across AB Sugar before it is inputted to ABF's environment data system.

Agricultural commodities

Cotton

Do you collect or calculate GHG emissions for this commodity?

No, not currently but intend to collect or calculate this data within the next two years

Please explain

GHG emissions for sourced cotton are not currently calculated but work is expected to be conducted in the coming years to start calculating this data.

Agricultural commodities

Soy

Do you collect or calculate GHG emissions for this commodity?

No

Please explain

Priorities for soy do not currently include calculating the GHG emissions from this commodity.

Agricultural commodities

Wheat

Do you collect or calculate GHG emissions for this commodity?

No

Please explain

Priorities for wheat do not currently include calculating the GHG emissions from this commodity.

Agricultural commodities

Other (Tea)

Do you collect or calculate GHG emissions for this commodity?

No

Please explain

We are able to calculate the GHG emissions for tea based on total emissions generated by our whole Twinings business. As such, these are not specific emissions related solely to tea activities and are therefore not reported.

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

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

Cotton

Reporting emissions by

Please select

Emissions (metric tons CO2e) Denominator: unit of production

<Not Applicable>

Change from last reporting year

Please select

Please explain

GHG emissions for sourced cotton are not currently calculated but work is expected to be conducted in the coming years to start calculating this data.

Soy

Reporting emissions by

Please select

Emissions (metric tons CO2e) Denominator: unit of production

<Not Applicable>

Change from last reporting year

Please select

Please explain

Priorities for soy do not currently include calculating the GHG emissions from this commodity.

Sugar

Reporting emissions by

Unit of production

Emissions (metric tons CO2e)

128156

Denominator: unit of production

Other, please specify (Tonnes of sugar beet and sugar cane grown by Associated British Foods)

Change from last reporting year

About the same

Please explain

While there were variances between beet and cane production on our land between the two years, the overall production of sugar remained relatively static, with a 6% increase. Our Sugar businesses report their GHG emissions data once a year to ABF using the group's CloudApps system. From each site, data is collected from several inputs across agricultural activities (own land), transport, manufacturing process, and energy use. The site SHERQ (safety, health, environment, risk and quality) Manager is responsible for analysing, challenging and signing off the data. The SHERQ Manager also engages with the business level Finance team who conduct a review across business aggregated data before it is submitted to AB Sugar's Finance team. Additional checks are conducted for the data across AB Sugar before it is inputted to ABF's environment data system.

Wheat

Reporting emissions by

Please select

Emissions (metric tons CO2e) Denominator: unit of production

<Not Applicable>

Change from last reporting year

Please select

Please explain
Priorities for wheat do not currently include calculating the GHG emissions from this commodity.

Other
Reporting emissions by
Total

Emissions (metric tons CO2e) Denominator: unit of production
<Not Applicable>

Change from last reporting year
This is our first year of measurement

Please explain
We are able to calculate the GHG emissions for tea based on total emissions generated by our whole Twinings business. As such, these are not specific emissions related solely to tea activities and are therefore not reported.

C6.10

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

Intensity figure
0.0002666

Metric numerator (Gross global combined Scope 1 and 2 emissions)
4152915

Metric denominator
unit total revenue

Metric denominator: Unit total
15574000000

Scope 2 figure used
Location-based

% change from previous year
4

Direction of change
Decreased

Reason for change
The reasons for the changes include: - this year we have included our joint ventures into our Scope 1 and Scope 2 emissions (to align with our own public reporting). - this year we have allocated the methane and nitrous oxide from our renewable fuels into Scope 1. - revenues are higher by 1% this year with Scope 1 and 2 emissions decreasing by 2% over the two years.

C7. Emissions breakdowns

C7.1

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

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	3147500	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	65077	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	15201	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	91	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Argentina	33035
Australia	91124
Austria	1
Belgium	285
Brazil	32764
Canada	36877
Chile	3938
China	466230
Colombia	3823
Czechia	544
Denmark	19
Ecuador	14
Finland	3716
France	3617
Germany	99111
India	19758
Ireland	2837
Italy	64104
Malawi	60333
Malaysia	1176
Mexico	37171
Mozambique	16995
Netherlands	1206
New Zealand	10752
Pakistan	2223
Peru	4114
Philippines	20
Poland	2270
Portugal	3
Singapore	0
South Africa	260558
Spain	218330
Swaziland	53707
Switzerland	5392
United Republic of Tanzania	40954
Thailand	13109
Turkey	19183
United Arab Emirates	0
United Kingdom of Great Britain and Northern Ireland	1456043
Uruguay	418

United States of America	86857
Venezuela (Bolivarian Republic of)	0
Viet Nam	10325
Zambia	64903
Sri Lanka	31

C7.3

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

By business division By activity

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Agriculture	54654
Grocery	277941
Ingredients	562216
Retail	19495
Sugar	2313564

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Agricultural activities on our own land	191402
Processing and manufacturing in our direct operations	2938564
Transport and distribution in our control	97904

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?

Yes

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

(C-AC7.4a/C-FB7.4a/C-PF7.4a) Select the form(s) in which you are reporting your agricultural/forestry emissions.

Total emissions

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

(C-AC7.4b/C-FB7.4b/C-PF7.4b) Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.

Activity

Agriculture/Forestry

Emissions category

<Not Applicable>

Emissions (metric tons CO2e)

191402

Methodology

Other, please specify (We use a mix of sources for the factors for our agricultural emissions reflecting the variety of activities in this category.)

Please explain

Over 98% of our agricultural emissions are those from growing our own sugar cane and sugar beet crops and harvesting them including the burning of the cane crops to remove cane leaves just before they are harvested. We also include data for GHG emissions from intensive livestock farming activities which are due to enteric fermentation and the production on site of crops such as peas and corn for pig feed. Methodology is a mixture between IPCC Guidelines for National Greenhouse Gas Inventories – Volume 4, British Sugar carbon footprint methodology certified by The Carbon Trust, Department for Transport RTFO Guidance, Ecoinvent Emissions Factor Database.

Activity

Processing/Manufacturing

Emissions category

<Not Applicable>

Emissions (metric tons CO2e)

2938564

Methodology

Other, please specify (For the majority of manufacturing emissions we use international / national sources for factors such as DEFRA. For a minority of emissions from processing and manufacturing, we use activity specific factors which take into account local conditions.)

Please explain

Activity

Distribution

Emissions category

<Not Applicable>

Emissions (metric tons CO2e)

97904

Methodology

Default emissions factor

Please explain

We use DEFRA 2018 emission factors for our transport and distribution activities.

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Argentina	12462	12462	32345	0
Australia	130458	130951	155124	0
Austria	1115	1114	6657	0
Belgium	1862	1862	8258	0
Brazil	16484	15656	96575	5270
Canada	5592	5592	39345	0

Chile	1668	1668	3789	0
China	136562	136003	200967	0
Colombia	1244	1244	6173	0
Czechia	1398	1398	2671	0
Denmark	62	62	355	0
Ecuador	135	135	400	0
Finland	7786	11220	55284	0
France	1058	1058	22712	0
Germany	32759	25538	77918	0
India	14025	14025	18078	0
Ireland	15446	15446	36847	0
Italy	6403	6403	18615	0
Malawi	40300	52665	88069	0
Malaysia	1581	1581	2293	0
Mexico	13878	659	30097	28669
Mozambique	508	5646	7852	0
Netherlands	16044	16044	34356	0
New Zealand	3492	3343	28094	0
Pakistan	814	814	1978	0
Peru	1317	1317	5374	0
Philippines	13	13	21	0
Poland	6769	6769	9225	0
Portugal	4809	4809	13796	0
Singapore	16	16	36	0
South Africa	54036	51034	54291	0
Spain	28148	33130	95613	0
Sri Lanka	150	150	291	0
Swaziland	12581	18778	27493	0
Switzerland	175	0	7082	7082
United Republic of Tanzania	9349	11219	21209	0
Thailand	9718	11009	18913	0
Turkey	2097	2097	4738	0
United Kingdom of Great Britain and Northern Ireland	238872	248552	982144	0
Uruguay	39	39	739	0
United States of America	84773	83153	178619	0
Venezuela (Bolivarian Republic of)	12	12	44	0
Viet Nam	7472	7472	16965	0
Zambia	1575	193	73256	0

C7.6

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

By business division By activity

C7.6a

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

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Grocery	262951	267495
Sugar	234164	257835
Agriculture	30051	31042
Ingredients	253332	240371
Retail	144547	145612

C7.6c

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

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Processing and manufacturing. This includes manufacturing sites, offices, warehouses and distribution centres.	780499	796743
Retail stores.	144547	145612

C7.9

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

Increased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	Energy generated on our sites from renewable fuel sources bagasse and biogas are reported as out of scope.
Other emissions reduction activities	67344	Decreased	2	Energy efficiency programmes have contributed to a decrease in Scope 2 emissions.
Divestment		<Not Applicable>		

Acquisitions	0	No change		During the reporting year, we acquired Acetum and Sports Nutrition. However, due to the changes in our reporting boundary and methodology (as below), the contribution of these two businesses to our total gross Scope 1 and 2 emissions is immaterial.
Mergers	0	No change		Not applicable
Change in output	0	No change		
Change in methodology	594264	Increased	14	As per the GHG Protocol, we have allocated process emissions from yeast, ethanol and enzyme production into Scope 1 this year. In addition, we included emissions from methane and nitrous dioxide in Scope 1 from the combustion of renewable fuels within our operational boundary.
Change in boundary		<Not Applicable>	3	This year we have included the emissions from our joint ventures.
Change in physical operating conditions	0	No change		Not applicable
Unidentified	0	No change		Not applicable
Other	0	No change		Not applicable

C7.9b

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

Location-based

C8. Energy

C8.1

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

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

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	11511167	9220355	20731522
Consumption of purchased or acquired electricity	<Not Applicable>	0	1886430	1886430
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	598268	598268
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	11511167	11705053	23216220

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6707729

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

MWh fuel consumed for self-generation of heat
244353

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
4338089

Comment
Our fuel consumed for self-generation relates to our bakeries businesses and fuel consumed for self-cogeneration or self-trigeneration refers to our sugar sites.

Fuels (excluding feedstocks)
Diesel

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
44573

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

MWh fuel consumed for self-generation of heat
0

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
0

Comment
We capture the consumption of diesel at a total group level.

Fuels (excluding feedstocks)
Fuel Oil Number 2

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
67323

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat
67323

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
0

Comment
We capture the consumption of gas oil / fuel oil number 2 at a total group level.

Fuels (excluding feedstocks)
Fuel Oil Number 5

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
83611

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

MWh fuel consumed for self-generation of heat
83611

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
0

Comment
We capture the consumption of heavy fuel oil / fuel oil number 5 at a total group level.

Fuels (excluding feedstocks)
Kerosene

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
527

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

MWh fuel consumed for self-generation of heat
0

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
0

Comment
We capture the consumption of kerosene at a total group level.

Fuels (excluding feedstocks)
Motor Gasoline

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
437

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

MWh fuel consumed for self-generation of heat
0

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
0

Comment
We capture the consumption of motor gasoline at a total group level.

Fuels (excluding feedstocks)
Anthracite Coal

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
2106324

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

MWh fuel consumed for self-generation of heat
164748

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
1941576

Comment
We capture the consumption of coal at a total group level. Our yeast and sugar businesses consume coal for self-generation of heat and/or self-cogeneration.

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
143383

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

MWh fuel consumed for self-generation of heat
48750

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
0

Comment
We capture the consumption of LPG at a total group level.

Fuels (excluding feedstocks)
Biogas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
267897

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

MWh fuel consumed for self-generation of heat

264310

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
0

Comment
We capture the consumption of biogas at a total group level.

Fuels (excluding feedstocks)
Bagasse

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
10601705

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

MWh fuel consumed for self-generation of heat
0

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
10601705

Comment
All energy from bagasse is consumed on our sites for on-site energy needs.

Fuels (excluding feedstocks)
Wood

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
576352

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

MWh fuel consumed for self-generation of heat
0

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
575824

Comment
We capture the consumption of wood at a total group level.

Fuels (excluding feedstocks)
Other, please specify (Waste materials from sugar cane fibre)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
65213

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

MWh fuel consumed for self-generation of heat
0

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
65213

Comment
We capture the consumption of waste materials from sugar cane fibre at a total group level.

Fuels (excluding feedstocks)
Coke

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
66449

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

MWh fuel consumed for self-generation of heat
66499

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
0

Comment
We capture the consumption of coke at a total group level.

C8.2d

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

Anthracite Coal

Emission factor
2452.29

Unit
kg CO2 per metric ton

Emission factor source
DEFRA 2018 Fuel-Coal Industrial tonne

Comment Bagasse Emission factor
0.3308

Unit
metric tons CO2e per MWh

Emission factor source
Site-specific emission factors for different input materials.

Comment Biogas Emission factor
0.00023

Unit
metric tons CO2e per MWh

Emission factor source
DEFRA 2018 - Biogas - kWh - net

Comment Coke

Emission factor
0.34659

Unit
metric tons CO2e per MWh

Emission factor source
DEFRA 2018 – Fuel – Coking Coal – kWh - gross

Comment Diesel

Emission factor
0.25296

Unit
metric tons CO2e per MWh

Emission factor source
DEFRA 2018 - Fuel - Diesel - kWh - gross

Comment

Fuel Oil Number 2

Emission factor
0.27652

Unit
metric tons CO2e per MWh

Emission factor source
DEFRA 2018 - Fuel - Gas Oil - kWh - gross

Comment

Fuel Oil Number 5 Emission factor
0.26831

Unit
metric tons CO2e per MWh

Emission factor source
2018 UK Government GHG Conversion Factors v1.0, published July 2018

Comment Kerosene Emission factor
0.24665

Unit
metric tons CO2e per MWh

Emission factor source
2018 UK Government GHG Conversion Factors v1.0, published July 2018

Comment

Liquefied Petroleum Gas (LPG) Emission factor
0.21448

Unit
metric tons CO2e per MWh

Emission factor source
2018 UK Government GHG Conversion Factors v1.0, published July 2018

Comment Motor Gasoline Emission factor
0.24082

Unit

metric tons CO2e per MWh

Emission factor source

2018 UK Government GHG Conversion Factors v1.0, published July 2018

Comment

Natural Gas

Emission factor

0.18396

Unit

metric tons CO2e per MWh

Emission factor source

2018 UK Government GHG Conversion Factors v1.0, published July 2018

Comment Wood

Emission factor

1864.824

Unit

metric tons CO2e per MWh

Emission factor source

Intergovernmental Panel for Climate Change (2006 Guidelines for National Greenhouse Gas Inventories)

Comment Other

Emission factor

Unit

Please select **Emission factor source Comment**

C8.2e

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity				
Heat				
Steam				
Cooling				

(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

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Solar PV

Concentrated solar power (CSP) Wind

Hydropower

Biomass (including biogas)

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

Latin America

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

5270

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

0

Comment

This certifies the amount of greenhouse gases avoided by using renewable energy; either small hydro plants (PCH), thermal plants burning sugarcane bagasse, wind farms or solar energy plants

---

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Solar PV

Concentrated solar power (CSP) Wind

Hydropower

Biomass (including biogas)

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

Latin America

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

28669

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

0

Comment

Sites located in Mexico use energy from a number of possible renewable sources.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with 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

7082

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

Comment
Sites based in Switzerland source energy from hydropower.

C9. Additional metrics

C9.1

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

Description
Waste

Metric value
139000

Metric numerator
Tonnes of hazardous and non-hazardous waste.

Metric denominator (intensity metric only)
N/A

% change from previous year
15

Direction of change
Decreased

Please explain
We generated 770,000 tonnes of waste in the year; this figure includes hazardous and non-hazardous waste sent to landfill as well as waste which was recycled, recovered or had another beneficial use. As a proportion of the total amount, recycled waste material accounted for 82%. We remain focused on minimising its production and maximising the opportunities to reuse and recycle the materials. As well as the environmental impacts of waste, managing and safely disposing of it is a cost to the businesses. Therefore the first priority is to minimise it by extracting as much value as possible from all our raw materials. When we do have unavoidable waste materials, we look at how these can be of benefit to our operations. This includes implementing processes to turn waste into energy sources such as using the biogas from wastewater treatment processes to feed our combined heat and power (CHP) plants or the generation of renewable energy from anaerobic digestion plants. We consider alternative uses for waste materials including making compost, replenishing soil and as building or packaging materials. Where appropriate we donate surplus food products to charities and community groups. Again this year, all our divisions have recycled far more waste than they have sent to landfill; the figures range from 95% in our retail division to 68% in our agriculture division. These are substantial amounts of waste materials which have been segregated to fulfil a beneficial purpose when reused or recovered.

Description
Energy usage

Metric value
23200

Metric numerator
GWh

Metric denominator (intensity metric only)

% change from previous year

0.4

Direction of change

Decreased

Please explain

As energy use is one of our main environmental impacts and is a significant cost coupled with fluctuations in the price of fuels, it remains a key focus for the effective management of our businesses. They explore changes to their energy mix and ways of generating their own energy, and a number have invested in combined heat and power plants (CHP) and cycle gas turbines. Our Sugar businesses consumed 82% of the group's energy this year. Some of our sites are deemed 'energy positive' which means that they have the ability to generate energy on-site which is surplus to their needs. When this happens, they export it to the national grid or other organisations. In 2018, we exported 825 GWh of energy which is a 3% reduction compared with last year. Over 790 GWh of our exported energy, 96% of the total, was electricity generated mainly by our sugar and yeast factories in CHP plants which create steam and electricity. In fact, our British Sugar sites contributed 84% of the total exported electricity. 4% of our total exported energy was biogas generated by AB Agri's UK anaerobic digestion plant which operated for its first full year throughout 2018. This year, 50% of the energy we used came from renewable energy sources, equal to 11,500 GWh which is a slight increase of 1% compared with last year. At 92%, most of this renewable energy comes from bagasse from our southern African operations. Bagasse is the residual fibre once the sugar has been extracted from sugar cane. In addition, our businesses are expanding their capabilities in on-site anaerobic digesters which generate biogas from wastes. This is to minimise reliance on fossil fuels and maximise efficiency opportunities from co-products and waste materials within their own processes rather than dispose of the wastes off-site. While biogas accounts for only 2% of our total renewable fuels used on-site, the amount consumed has increased by 20% in the last 12 months to 268 GWh. We expect annual production figures to continue rising as our businesses continue to invest in generating biogas.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

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

ABF CR Report 2018_Assurance Statement.pdf

Page/ section reference

Please see pages 78-79 of ABF's annual CR Report (2018) for Ernst & Young's Assurance Statement. International Standard for Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other Than Audits or Reviews of Historical Financial Information.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ABF CR Report 2018_Assurance Statement.pdf

Page/ section reference

Please see pages 78-79 of ABF's annual CR Report (2018) for Ernst & Young's Assurance Statement. International Standard for Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other Than Audits or Reviews of Historical Financial Information.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

ABF CR Report 2018_Assurance Statement.pdf

Page/section reference

Please see pages 78-79 of ABF's annual CR Report (2018) for Ernst & Young's Assurance Statement. International Standard for Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other Than Audits or Reviews of Historical Financial Information.

Relevant standard
ISAE3000

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?

No, we do not verify any other climate-related information reported in our CDP disclosure

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

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
63

Period start date
January 1 2018

Period end date
December 31 2018

Allowances allocated
583429

Allowances purchased

Verified emissions in metric tons CO2e
1034541

Details of ownership
Facilities we own and operate

Comment
Our Spanish businesses used less than their allocation of allowances in 2018 by 57,339 units. This explains why the figures do not correlate.

C11.1d

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

Our strategy for compliance is to:

1. Meet compliance levels for all appropriate environmental legislation and other requirements relating to our activities
2. Continually improve our environmental performance through a process of monitoring, measuring and reviewing our environmental impacts
3. Maximise the efficient use of our raw materials
4. Minimise waste generation through promotion of re-use and recycling
5. Utilise energy more efficiently to reduce the use of fossil fuels and the production of associated greenhouse gas emissions

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

Navigate GHG regulations Drive energy efficiency

GHG Scope

Scope 1

Application

A number of our businesses use carbon pricing as a tool to manage risks and opportunities to operations participating in the EU ETS and in anticipation of new carbon regulations such as South Africa's Carbon Tax. For the majority, our businesses internalise the current EU ETS market price so that there is consistency across our European businesses. The analysis is based at a business and country level to ensure effectiveness in driving reduction behaviour.

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

12

Variance of price(s) used

Across our businesses, we use a differentiated price, depending on the geography and therefore most applicable carbon scheme or market to each business. Using the EU ETS price for those businesses in scope means that the price used may vary linked to market demand. Over the course of the reporting year, reforms to the EU ETS means that the price of carbon allowances has moved. At the high end, this has reached approximately £12.00 per tonne from a low of £4.00 per tonne within the year. Several of our businesses have used this approach to support their efforts to plan their medium and long-term work in carbon management. We will continue to track carbon prices and their movement to ensure that our approach is the most effective to support the sustainability of our businesses and in alignment with the 2 degree transition pathway.

Type of internal carbon price

Other, please specify (A price reflecting the relevant market)

Impact & implication

We use the internal carbon price to support medium and long-term planning within our businesses. Many of our businesses are now participating in carbon taxes or preparing for the introduction of national carbon tax schemes. For example, whilst the UK is moving from the CRC to an integrated approach, South Africa will, in 2019, introduce a carbon tax. Our South African business Illovo has worked to incorporate the price into project finance justification models. It is anticipated that the carbon tax will increase the cost of Scope 1 energy for Illovo by approximately 7%. The use of an internal carbon price drives both our emission reduction strategies and, aligned with this, reduced operating costs. Our CR Update 2018 presents more information on the carbon reduction activities of our businesses.

https://www.abf.co.uk/documents/pdfs/2018/ec1040090_abf_cr18_web.pdf

C12. Engagement

C12.1

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

Yes, our suppliers Yes, our customers

C12.1a

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

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Run a campaign to encourage innovation to reduce climate impacts on products and services

% of suppliers by number

% total procurement spend (direct and indirect)

% Scope 3 emissions as reported in C6.5 Rationale for the coverage of your engagement

AB Sugar China has started to use new channels to communicate with their growers including the launch of a bespoke mobile phone application. The communications have provided growers with advice on agronomy to help achieve strong productivity and to provide them with solutions to overcome specific challenges such as those related to weather or localised soil quality.

Impact of engagement, including measures of success

Since 2007/08, growers have doubled their beet volume to 1.2 million tonnes and have improved their average yield by 67%, in part due to this knowledge sharing and also due to AB Sugar China's investment in mechanisation and helping to implement best farming practices.

Comment

Since 2007/08, AB Sugar China has made a concerted effort to modernise growers' agricultural businesses. The business has worked extensively with growers to educate them on how to best grow their crop sustainably, through its Sustainable Agriculture Programme. AB Sugar China offers a multi-channel, targeted approach which focused on delivering simplified content supported by comprehensive research and development to growers over various channels, including social media.

Type of engagement

Compliance & onboarding

Details of engagement

Other, please specify (Supplier Code of Conduct)

% of suppliers by number

% total procurement spend (direct and indirect)

% Scope 3 emissions as reported in C6.5 Rationale for the coverage of your engagement

ABF's Supplier Code of Conduct sets out the values and standards we expect of our suppliers, representatives and the other people with whom we deal. Suppliers are expected to sign and abide by this Code. Environmental management is included in the supplier assessment and where climate change is a material issue for a business and/or part of the supply chain, our businesses will work with their suppliers to address carbon management.

Impact of engagement, including measures of success Comment

C12.1b

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

Type of engagement
Collaboration & innovation

Details of engagement
Other – please provide information in column 5

% of customers by number

% Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement
British Sugar identified opportunities to work with customers to contribute towards the reduction of their Scope 3 emissions.

Impact of engagement, including measures of success
British Sugar has been working with customers in Ireland to increase the average pallet weight to improve payloads by 15%, which represents an annual reduction in fuel consumption of approximately 12% or the equivalent of 86 tonnes of CO2 per year.

Type of engagement
Collaboration & innovation

Details of engagement
Other – please provide information in column 5

% of customers by number

% Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement
Innovative solutions for B2B customers who are responding to changes in the market and a drive for products with sustainability qualities.

Impact of engagement, including measures of success
At ABF Ingredients, we use our technical expertise to solve problems for our customers, including manufacturing enzymes which, besides their technical performance, are able to address specific environmental challenges. These include cutting food waste by extending the shelf life of bread and reducing the need for chemicals for bleaching as well as the energy consumption in the production of paper. We have also created enzymes that improve the effectiveness of laundry detergent, allowing consumers to save energy by washing their clothes at a lower temperature while achieving even better cleaning performance compared to detergents without enzymes.

C12.3

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

Direct engagement with policy makers Trade associations

Funding research organizations Other

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution

Other, please specify (Reducing waste)	Support	ABF's UK Grocery Group is a signatory to the Courtauld Commitment 2025 which aims to reduce food waste and associated GHG emissions in the food and drinks industry. The collective ambition is to reduce the resources needed to provide food and drink by one fifth by 2025.	Waste management across industries
Adaptation or resilience	Support	ABF's CSO is a member of the Committee on Climate Change's Adaptation Committee, an independent, statutory body established under the Climate Change Act 2008. The Adaptation Committee's purpose is to provide advice to the UK Government and Devolved Administrations on preparing for and adapting to climate change. The knowledge and skills required to fulfil the CSO role contribute to the expertise required for the Adaptation Committee.	

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

ADE – Association of Decentralised Energy

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The work of the ADE includes: Advocacy: the ADE is at the forefront of influencing; energy, planning and procurement policy; Raising awareness: building understanding through communications, events, training and the production of relevant policy and market research; Promoting best practice and collaboration; Working with our members and a wide range of relevant stakeholders to help drive improvement and innovation across the sector Enhancing and maintaining the reputation of the sector: through advocacy, promotion and adoption of best practice.

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

Trade association

Combustion Engineering Association (CEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The CEA seeks to promote the science of combustion engineering and to promote best practice.

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

An ABF representative is a member of the Executive as Past Chairman of CEA, and adds influence as the Association works towards its objectives.

Trade association

Renewable Energy Association (REA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The REA represents British renewable energy producers and promotes the use of renewable energy in the UK. The REA endeavours to achieve the right regulatory framework for renewables to deliver an increasing contribution to the UK's electricity, heat and transport needs.

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

An ABF representative is a Director on the Board of REA, and adds influence as the Association works towards its objectives.

Trade association

Low Carbon Vehicle partnership (LCVP)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The LCVP exists to accelerate a sustainable shift to lower carbon vehicles and fuels and create opportunities for UK business.

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

An ABF representative is a Director on the Board of LCVP, and adds influence as the Association works towards its objectives.

Trade association

ePURE (European Bioethanol T.A.)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ePURE represents and supports companies that produce renewable ethanol in the EU for all end-uses, i.e. fuel, potable and industrial uses. ePURE also represents companies that have an interest in ethanol production.

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

An ABF representative is a Director on the Board of ePURE, and adds influence as the Association works towards its objectives.

Trade association

Combustion Engineering Association (CEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The CEA seeks to promote the science of combustion engineering and to promote best practice.

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

Sharing of good practice and own experiences.

Trade association

Food and Drink Federation (FDF)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Members are committed to FDF's 'Ambition 2025'; leading on collaborative transformations within the food and drink supply chain that enhance productivity and deliver environmental and social benefits to ensure safe, nutritious, affordable and sustainable food for all. The climate change ambition is to achieve a 55% absolute reduction in CO2 emissions by 2025 against the 1990 baseline. FDF members are committed to the Sustainability: Ambition 2025 which launched recently as a guide for members to sustainably manage their footprint and supply chain.

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

An ABF representative attends the Climate Change and Energy Working Group so has the responsibility to engage with the Group in the direction of the overall policy of the FDF. This group has engaged with the government ahead of the proposed changes in Business Taxation and the 20 50 Decarbonisation Roadmap for example, as well as providing UK industry position input into the EU Commission in its revision of the Best Available Techniques Reference Document (BREF) covering the Food, Drink & Milk Industries. An ABF representative attends the Sustainability Group so has the responsibility to steer the Group in the direction of the overall policy of the FDF.

Trade association

The South African Sugar Association (SASA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Support research through SASRI (South African Sugar Research Institute) focused on empowering the sugar industry to respond to climate change impacts. Working with the mandated government departments, such as the Department of Energy and the National Treasury, to support industry diversification into renewable energy; both electrical co-generation from bagasse and bioethanol production from molasses. Support the avoidance of GHG emissions through the promotion of electricity from bagasse-based cogeneration and bioethanol, thereby supporting the South African government's biofuel industry strategy and mandatory blending requirements.

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

Illovo has one member on the board of SASA. Illovo and SASA are aligned in their positions on climate change legislation. Through SASA led discussion, Illovo has participated in the carbon tax process headed by the National Treasury and together have provided policy submissions.

C12.3d

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

Yes

C12.3e

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

We actively engage in a number of meetings and events aimed at understanding and influencing public policy in the area of climate change including but not limited to the examples noted below:

ABF's Spanish sugar business, Azucarera engages with the sugar beet growers in the region through AIMCRA, the Association for Research and Improvement of Sugar Beet, a private, non-profit, interprofessional association with joint management and financing in equal proportions by beet growers and Azucarera. AIMCRA aims to make beet-growing more competitive through research, development and innovation initiatives, establishing a number of lines of action to support growers' work based on the conclusions of those initiatives. Azucarera engages with the growers to disseminate information about innovation and improved crop growing techniques.

Illovo is a member of, and participates in, the activities of the National Business Initiative (NBI) which is the local partner for CDP, World Business Council on Sustainable Development and the UN Global Compact. Illovo attend workshops and seminars that the NBI presents and are represented on its board.

Primark is a member of the Sustainable Apparel Coalition, made up of more than 150 global brands, retailers and

manufacturers as well as government, non-profit environmental organisations, and academic institutions, that are collectively committed to improving supply chain sustainability in the apparel and footwear industries.

C12.3f

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

Associated British Foods is both diversified and decentralised. We are successful because we trust the people who run our businesses. Close to their markets, they use their knowledge, skills and judgement to serve their customers and so our businesses thrive. The centre engages enthusiastically and deeply with leaders across our portfolio of businesses, but it doesn't dictate what operating companies' agendas or methods should be.

Across Associated British Foods, we take an active approach to managing and reducing our environmental impact. We have invested in environmental improvement activities. These investments have primarily been targeted at areas where we have the greatest environmental impact including the use of energy and the resultant greenhouse gas emissions.

Our Group Company Secretary acts as a focal point for communications on matters of corporate governance and corporate responsibility. This role regularly liaises with Corporate Responsibility, Public Relations and other advocacy-related roles within the businesses to ensure alignment. This is carried out on an ad-hoc basis when required and through a formal annual reporting process whereby the businesses provide information on their internal activities, work with their value chain and any public policy activities related to a range of corporate responsibility issues including climate change. Any public policy engagement conducted by the businesses must be approved at a senior level.

The businesses also review engagement activities to ensure they are aware of current and future legislation that will impact their value chains. Accordingly, policy engagement will cover energy, waste, reporting, supply chain and other activities that each business, and the group as a whole, consider represent a risk or an opportunity.

Engagement activities are reviewed at least annually, to ensure alignment with business strategy and the policy landscape.

C12.4

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

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

ABF_CR Update 18_web.pdf

Page/Section reference

ABF's Corporate Responsibility Update 2018, pages 15 - 18 for group-level climate-related information and data. There are additional references to climate-related activities throughout the report from our five business segments. ABF's Annual Report and Accounts 2018 also discloses our climate-related emissions figures and activities. See pages 54 -55. Reference to climate change as an identified and managed risk is reported on page 63 of the Annual Report and Accounts 2018.

Content elements Governance Strategy

Risks & opportunities Emissions figures

Comment

Due to the size of the document, we are not able to upload our Annual Report and Accounts 2018 here. Please go to the following link to access the document: https://www.abf.co.uk/documents/pdfs/2018/abf_ar18_web.pdf

C13. Other land management impacts

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

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

Yes

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

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

Management practice reference number

MP1

Overall effect

Positive

Which of the following has been impacted?

Biodiversity Soil

Yield

Other, please specify (Cost)

Description of impact

Reduced cost, improved yields with more sustainable operations and usually with benefits to local habitats and ecosystems.

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

Yes

Description of the response(s)

AB Sustain operates in more than sixty countries and manages diverse supply-chain projects offering clients an understanding of their agricultural supply-chains through utilisation of effective tools to measure and monitor continuous improvement.

Management practice reference number

MP2

Overall effect

Positive

Which of the following has been impacted?

Water Yield

Other, please specify (Cost)

Description of impact

Less risk to crop productivity if resilient or water efficient crop varieties can be developed.

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

Yes

Description of the response(s)

Yield improvement projects for example at Illovo Nchalo and Nakambala sites and the adoption of Better Management Practices to improve cane yield.

Management practice reference number

MP3

Overall effect

Mixed

Which of the following has been impacted?

Biodiversity

Other, please specify (Cost / Improved air quality in area)

Description of impact

Additional biomass is available for combustion in the boilers resulting in increased cogeneration and consequently more renewable energy is fed into the national electricity grid.

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

Yes

Description of the response(s)

At Illovo's eSwatini site, this renewable energy is exported to the national grid.

Management practice reference number

MP4

Overall effect

Mixed

Which of the following has been impacted?

Biodiversity Soil

Other, please specify (Significant Job Creation)

Description of impact

Manual harvesting results in conserved soil and soil quality in areas suitable for manual harvesting.

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

Yes

Description of the response(s)

Conservation of soil and soil quality in areas greater than 12% slope (Land Use Plan). Improved surface water structures (grassed waterways) on a number of Illovo's irrigated estates. Minimum tillage practices in South Africa and are in trial in Zambia and Tanzania.

Management practice reference number

MP5

Overall effect

Positive

Which of the following has been impacted?

Other, please specify (Cost)

Description of impact

Generating our own renewable energy within our mills for operating both the milling and agricultural operations, where feasible, greatly reduces our cost base.

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

Yes

Description of the response(s)

C14. Signoff

C-FI

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

C14.1

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

	Job title	Corresponding job category
Row 1	Director of Company Secretariat	Chief Sustainability Officer (CSO)