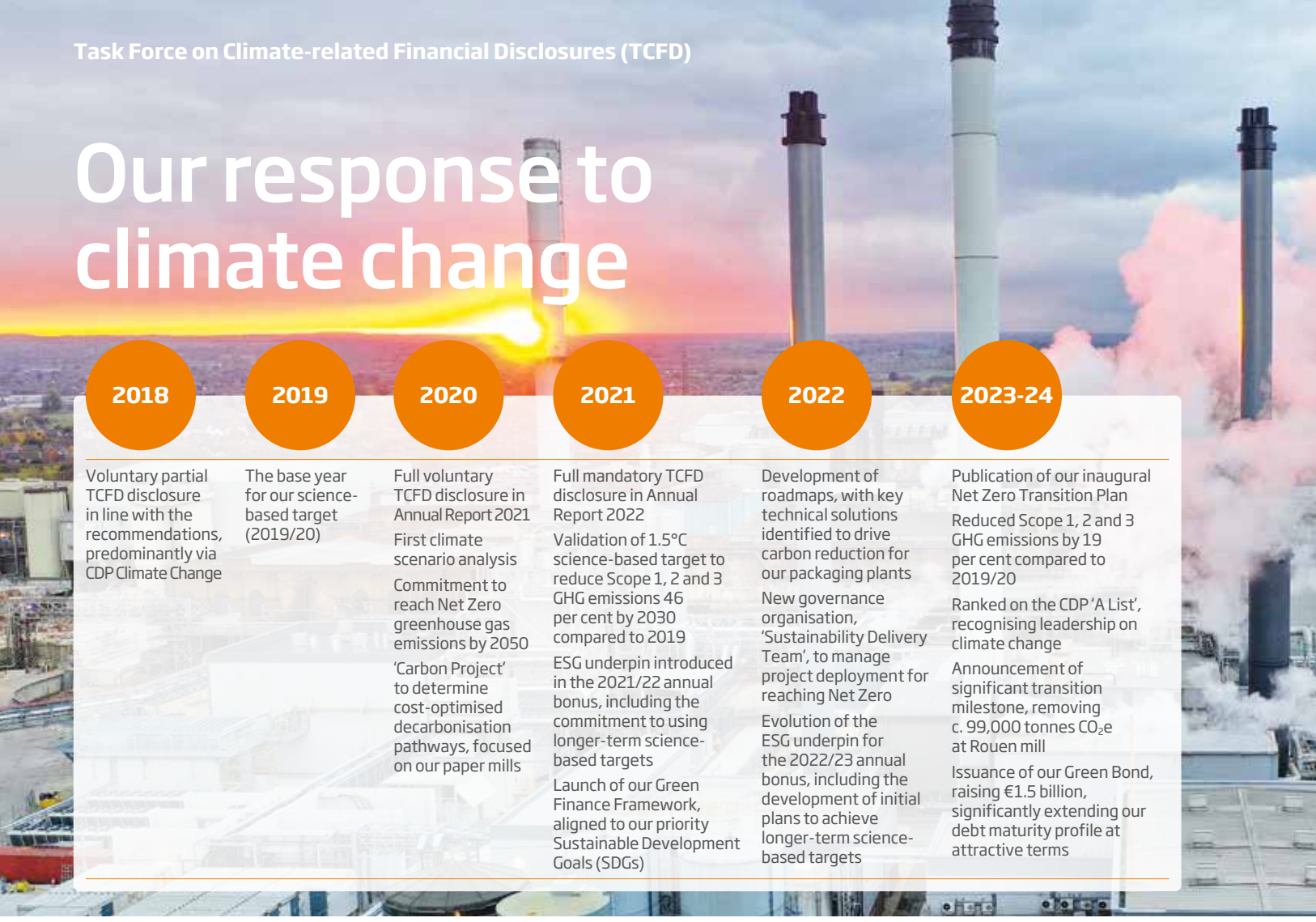
Our response to climate change



2018	2019	2020	2021	2022	2023-24
Voluntary partial TCFD disclosure in line with the recommendations, predominantly via CDP Climate Change	The base year for our science-based target (2019/20)	Full voluntary TCFD disclosure in Annual Report 2021 First climate scenario analysis Commitment to reach Net Zero greenhouse gas emissions by 2050 'Carbon Project' to determine cost-optimised decarbonisation pathways, focused on our paper mills	Full mandatory TCFD disclosure in Annual Report 2022 Validation of 1.5°C science-based target to reduce Scope 1, 2 and 3 GHG emissions 46 per cent by 2030 compared to 2019 ESG underpin introduced in the 2021/22 annual bonus, including the commitment to using longer-term science-based targets Launch of our Green Finance Framework, aligned to our priority Sustainable Development Goals (SDGs)	Development of roadmaps, with key technical solutions identified to drive carbon reduction for our packaging plants New governance organisation, 'Sustainability Delivery Team', to manage project deployment for reaching Net Zero Evolution of the ESG underpin for the 2022/23 annual bonus, including the development of initial plans to achieve longer-term science-based targets	Publication of our inaugural Net Zero Transition Plan Reduced Scope 1, 2 and 3 GHG emissions by 19 per cent compared to 2019/20 Ranked on the CDP 'A List', recognising leadership on climate change Announcement of significant transition milestone, removing c. 99,000 tonnes CO_2e at Rouen mill Issuance of our Green Bond, raising €1.5 billion, significantly extending our debt maturity profile at attractive terms

Our circular business model keeps materials recirculating through recycling services, which support the manufacture of recyclable packaging. Whilst this alleviates pressure on natural systems, such as forests, and prevents waste from entering landfills and oceans, it is energy intensive, generating greenhouse gas (GHG) emissions that contribute to climate change.

We have set a 1.5°C science-based target to reduce Scopes 1, 2 and 3 GHG emissions 46 per cent by 2030 compared to 2019, and we are committed to reaching Net Zero by 2050.

Our near-term 2030 target has been validated by the Science Based Targets initiative (SBTi) and we are in the process of setting a FLAG (Forest, Land and Agriculture) target and no deforestation commitment in order to obtain Net Zero validation from the SBTi.

In support of a 1.5°C 'Net Zero' economy, we are committed to considering the Paris Agreement in our activities, including in our external engagement, as underpinned by the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) and the IPCC Special Report on Global Warming of 1.5°C (SR1.5).

We first included the TCFD recommendations in our 2018 Annual Report. Since then we have developed our reporting, reaching disclosure of all recommendations a year ahead of mandatory disclosure in 2022. The timeline above demonstrates how we have used the TCFD recommendations to accelerate climate action.

Voluntary IFRS S2 'Climate-related Disclosures' and UK Transition Plan Taskforce disclosures

For the DS Smith Annual Report 2024, we have enhanced our TCFD disclosures with reference to IFRS ISSB (International Sustainability Standards Board) S2 and UK TPT disclosures.

The requirements of IFRS S2 Climate-related Disclosures integrate, and are consistent with, the TCFD's four core recommendations and 11 disclosures, with some additions.

IFRS S2 Climate-related Disclosures require the disclosure of information about any climate-related transition plan the entity has and how the entity plans to achieve climate-related targets.

This is consistent with the TCFD's guidance on metrics, targets and transition plans (2021) and the UK TPT framework, which sets out good practice for robust and credible transition plans.

These disclosures are therefore included in this integrated section of the DS Smith Annual Report 2024.

This early voluntary application of IFRS S2 is accompanied by IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information on pages 30 to 37.

We will continue to develop these disclosures as the IFRS sustainability disclosure standards and UK TPT are expected to become endorsed by the UK Government's framework to create UK Sustainability Reporting Standards (UK SRS).

A climate disclosures content index is presented on page 83 to sign post where relevant disclosures are located.

Compliance statement

DS Smith Plc has complied with the requirements of Listing Rule 9.8.6R(8) by including climate-related financial disclosures consistent with the Task Force on Climate-related Financial Disclosures recommendations (Oct 2021 update) in the DS Smith Annual Report 2024, pages 61 to 77.

Governance

Describe the Board's oversight of climate-related risks and opportunities

The Board and the Audit Committee maintain oversight of climate-related risks and opportunities when reviewing and guiding strategy, budgets and business plans. Annual updates on risk assessments, mitigation and progress are reviewed by the Board, and the Board makes significant strategic decisions, for example, the adoption of the science-based target.

The Board considers any trade-offs associated with climate-related risks and opportunities by evaluating climate matters as part of setting the strategic direction of the Group, strategy implementation and resourcing and leadership. The terms of reference of the Audit Committee document the Committee responsibilities. These were updated to incorporate TCFD disclosures last year.

Upon appointment to the Board, Directors undertake an induction programme, receiving a broad range of information about the Group, including information about sustainability and climate-related matters, tailored to their previous experience.

Directors are given training and receive presentations to keep their knowledge current, including on TCFD and transition planning, and take responsibility for identifying and satisfying their own specific training requirements.

The Board and its Committees, members of whom have relevant ESG and sustainability experience, are updated on climate-related issues at a minimum annually. This includes the progress of our Now & Next Sustainability Strategy and other items that involve climate-related issues, such as the Corporate Plan, principal risks and uncertainties, and remuneration. The Audit Committee is engaged on the assurance of climate-related metrics and developments in ESG reporting.

Describe management's role in assessing and managing climate-related risks and opportunities

Members of the Health, Safety, Environment and Sustainability (HSES) Committee, chaired by the Group Chief Executive, assess and manage climate-related risks and opportunities. This Committee meets monthly, having met 12 times during 2023/24 to discuss, amongst other topics:

- GHG emissions forecasts.
- Plans to deliver the science-based target.
- Progress on climate-related opportunities, such as plastic replacement.

Climate-related risks are monitored as part of our standard operating procedures to ensure that appropriate mitigation is in place and are regularly reviewed by management. Management is supported by the Carbon, Water and Waste Steering Committee, which is the primary thematic steering committee handling climate-related matters, including the delivery of the science-based target.

Comprising leaders from across the business, the Committee maintains a portfolio of projects to allocate resources, coordinate delivery and propose solutions to critical trade-offs related to addressing climate-related risks and opportunities. These Committees draw on subject matter experts from Risk and Insurance, Strategy, Sustainability, Finance and Procurement teams. They report progress updates and escalate decisions to executive management on an ongoing basis.

Project deployment and the maintenance of Net Zero roadmaps are carried out by a technical sustainability delivery team. This team is responsible for driving carbon/energy, water and waste reduction and coordinating, through the steering committee, the design, planning and implementation of our commitment to reach Net Zero.

Climate-related metrics are discussed at least monthly by management teams. Senior management teams review within year performance, forecasts and longer-term progress against our targets, in addition to challenges, trends and opportunities for addressing climate-related issues monthly, and this is monitored by the HSES Committee on a quarterly basis, with progress presented to the Board annually.

Sustainability governance framework

Strategy

The strategy for managing climate-related risks and opportunities is integrated into our overall corporate strategies, including our strategic goal 'to lead the way in sustainability' and our Now & Next Sustainability Strategy.

We have identified seven key climate-related issues that are described in this section as climate-related risks and opportunities.

This strategy section then goes on to explain our primary strategy for mitigating climate change, which is articulated within the 'Carbon' pillar of our Now & Next Sustainability Strategy, supported by our Net Zero Transition Plan.

Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term

Climate-related risks and opportunities could arise over the short term (0-3 years), medium term (3-10 years) and long term (10+ years). These time horizons fit with the Group's corporate and capital planning cycle time horizon (three years), which is used to develop the Group's strategy, in addition to the annual risk reporting cycle (one year), which is used to assess and communicate risk.

Physical assets in our industry tend to have long lifetimes and efforts are made to extend the lifetime of machinery, components and spare parts, fitting into the long-term (10+ years) time horizon. As such, investment decisions are made, including the implications that such decisions may have on climate-related risks and opportunities under this long-term time horizon.

Climate-related risks

Increased spend on carbon taxes

In the short term, there is a risk that new carbon taxes could be introduced or existing carbon taxes could be extended as a policy tool to incentivise decarbonisation.

Increased cost of raw materials or threat to supply

In the medium to long term, there is a risk that raw materials could become more expensive or difficult to acquire due to disruption or market dynamic shifts caused by climate change.

Increased severity of extreme weather events

In the medium to long term, there is a risk that the frequency and severity of extreme weather events could increase, causing damage and disruption in our own operations or the value chain.

Increased likelihood of water stress

In the long term, there is a risk that competition for water could increase in the river basins from which we withdraw water, increasing the chance that supply constraints could be imposed.

Climate-related opportunities

Growth in demand for sustainable packaging

In the short term, there is an opportunity to drive organic growth by demonstrating the benefits of circular packaging that helps brands and consumers to replace plastic and reduce their carbon footprint in the transition to Net Zero.

Greater resource efficiency

In the short term, there is an opportunity to use fewer resources (materials, energy and/or water), both in manufacture through design and operating efficiency, and throughout the value chain to reduce climate impact and cost.

Use of lower-emission energy sources

In the medium to long term, there is an opportunity to adopt lower-emission energy sources and energy efficiency measures. These could be equipment-based (e.g. e-boilers and carbon capture and storage), fuel-based (e.g. hydrogen) or process-based (e.g. heat recovery and optimisation through digital and data innovation).

Summary of climate-related risks and their potential future impact

Climate-related risk			Type	Time horizon	Likelihood 1.5°C scenario	Likelihood >2°C scenario	Potential financial impact as indicated by reference to climate scenarios and our analysis*
Transition		**Increased spend on carbon taxes**	Policy and legal	Short term	●●●●●	●	£45-107 million potential increase in operating costs, depending on the price of future allowances in emission trading schemes, which would likely be greater in a 1.5°C scenario versus a >2°C scenario as a way to meet public policy objectives.
		**Increased cost of raw materials or threat to supply**	Market	Medium - long term	●●●	●●●●●	£26-87 million potential increase in production costs attributable to climate-related disruption, which would likely be greater in a warmer scenario (e.g. 10 per cent increase in costs in a >2°C scenario versus 3 per cent increase in a 1.5°C scenario).
Physical		**Increased severity of extreme weather events**	Acute physical	Medium - long term	●●	●●●●●	£8-90 million potential business value-at-risk due to production downtime, assuming 1-12 months of disruption at one of our paper mills located in a region prone to specific climate events (e.g. 12 months in a >2°C scenario versus one month in a 1.5°C scenario).
		**Increased likelihood of water stress**	Chronic physical	Long term	●●	●●●●●	£1-2 million potential business value-at-risk due to production downtime, assuming 7-31 days of interruption at one of our paper mills located in a region at risk of water stress (e.g. 31 days in a >2°C scenario versus seven days in a 1.5°C scenario).
Total potential financial impact of climate-related risks							**£80-286 million***

Summary of climate-related opportunities and their potential future impact

Climate-related opportunity	Type	Time horizon	Likelihood 1.5°C scenario	Likelihood >2°C scenario	Potential financial impact as indicated by reference to climate scenarios and our analysis*
Growth in demand for sustainable packaging	Products and services	Short term	•••••	•••	£420-637 million potential increase in revenue owed to production growth, which would likely be greater in a 1.5°C scenario as society demands more sustainable products and services.
Greater resource efficiency	Resource efficiency	Short term	•••••	•	£12-37 million potential cost saving as a result of resource efficiency (reduced energy consumption), which would likely be greater in a 1.5°C scenario as more efficiency opportunities are exploited.
Use of lower-emission energy sources	Energy source	Medium – long term	•••••	•	Zero-£77 million potential cost saving as a result of use of lower-emission energy sources, which would likely be greater in a 1.5°C scenario as more lower-emission energy sources are exploited.
Total potential financial impact of climate-related opportunities					**£432-751 million***

••••• Greater likelihood • Lesser likelihood

* Climate scenarios are used, alongside other tools, to assess vulnerability to climate change and are intended to represent plausible future states to assist learning and aid decision-making rather than to present future projections or forecasts. The values presented have changed compared to last year owed to changes in revenues, costs, currency exchange rates and emission values used for the analysis. The values are illustrative and estimated within the context set out by each reference scenario and then adapted to fit DS Smith. This is based on a single financial metric, without considering the implications of secondary impacts. For example, there may be a cost associated with damage to reputation that could occur as a result of business interruption owing to climate change.

Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning

The Board, Group Operating Committee (GOC) and its management committees consider climate-related issues when reviewing and setting strategy, policies and financial planning.

There are already changes occurring in our business model and value chain in response to climate change. We anticipate that these will continue over the timescales mentioned on the previous page and accelerate towards 2050.

Acquisitions or divestment

This includes significant strategic decisions, including how capital is secured and spent. For example, having divested our plastics business, our focus has turned towards organic growth through circularity, recyclability and resource efficiency, exploiting climate-related opportunities as a fibre-based manufacturer.

Capital investment

In our operations, our asset renewal strategies and decisions relating to capital investment are impacted by the value of emissions. This includes incorporating emissions valuations into project appraisals and capital planning, particularly when considering significant energy-related expenditure in our paper operations (as the most energy intensive part of our business and therefore the greatest emissions source).

Research and development (R&D)

Our R&D investments include alternative packaging materials, in addition to barrier coatings that increase the efficacy of corrugated as an alternative to plastic.

For example, in 2022 we opened our Fibre and Paper Development Laboratory at Kemsley mill, as part of our £100 million five-year R&D package announced in 2021, hosting innovative projects to accelerate our work on the circular economy. We also invest in achieving greater resource efficiency for natural assets, such as water. This includes, for example, the installation of water re-circulation systems within some of our paper mills.

Strategy and decision-making

Our primary strategy for responding to the effects of climate change is articulated in the 'Carbon' pillar of our Now & Next Sustainability Strategy, which includes our commitment to reach Net Zero GHG emissions by 2050.

This is supported by our Net Zero Transition Plan, which documents the targets, actions and resources deployed to enable the transition, supporting and guiding our decision-making.

The impact of climate-related risks and opportunities has been considered in the development of our Net Zero Transition Plan, which is a 'living' document, meaning that it is flexible and responsive to new information and developments in the external environment.

Key assumptions and external factors

Our transition plan looks into the future, and as such, assumptions have to be made to support decisions, often made with limited information. There are significant external factors that we depend on to deliver our plan. For example, to achieve science-based Scope 3 reductions, we are reliant on our suppliers, particularly those that are most energy-intensive (e.g. of paper, starch and chemicals), to reduce their emissions in line with a 1.5°C trajectory.

Our plan is dependent on market factors, including continued demand for recyclable packaging with a low carbon footprint, and national investment in recycling infrastructure and renewable energy systems to increase resource efficiency and ensure secure long-term supply.

Our plan will benefit from stable long-term energy policy, strategies and incentives that encourage investment, particularly between 2030 to 2050, in terms of future availability of quality bioenergy feedstocks and technological development.

We remain responsive to changes in our assumptions and the external environment, for example, reacting to new policy measures and seeking to benefit from incentives.

Our complete Net Zero Transition Plan report, which documents key assumptions and external factors in greater detail, can be downloaded from the ESG Reporting Hub on the DS Smith website.

A summary of our Net Zero Transition Plan

Our transition plan includes a roadmap of projects to deliver our 1.5°C validated science-based target to reduce Scope 1, 2 and 3 GHG emissions 46 per cent by 2030 compared to 2019 and to reach Net Zero GHG emissions by 2050.

Our plan sets clear actions and milestones in our own operations (Scope 1 and 2)

Reduce

Reducing energy consumption

- We are identifying ways to continuously improve energy efficiency.

Reducing material consumption

- We keep material use at a minimum through circular design.

Reducing waste generation

- We are finding ways to minimise operational waste by focusing on greater resource efficiency, yield improvement and higher-quality 'right first time' output to reduce energy consumption.

Switch

Switching to renewable energy

- We are investigating opportunities to transition from fossil to renewable fuels, such as biomass and energy generated from waste, where viable.
- We will purchase electricity generated from certified renewable sources, such as wind and solar, where viable.

Adopt

Adopting new technologies

- We are exploring modernising how we generate and consume energy, from new efficient combined heat and power (CHP) plants, boilers and corrugators, to future fuel and technological innovations such as hydrogen, when available.

Our plan aims to engage and influence in our value chain (Scope 3)

Upstream emissions

Downstream emissions

Suppliers

Scope 3 Categories 1, 4, 5 and 9

Engaging our suppliers to set their own science-based targets

Purchased goods and services

We are working with our suppliers to encourage them to set science-based targets, collaborating on projects and building capacity to reduce supply chain emissions.

Transportation and distribution

We are partnering with our logistics suppliers to optimise transportation and distribution, increasing truck-fill, improving mileage and switching to low emission fuels.

Waste generated in operations

We work with our waste management suppliers to divert materials from landfill to recovery, extracting energy from waste and keeping materials in use for longer.

Customers

Scope 3 Category 10

Supporting our customers to reduce downstream product emissions

Processing of sold products

We are helping our customers to identify reduction opportunities, increasing recyclability, optimising supply chains and promoting the adopting of science-based targets.

Consumers

Scope 3 Category 12

Enabling consumers to recycle more

End of life treatment of sold products

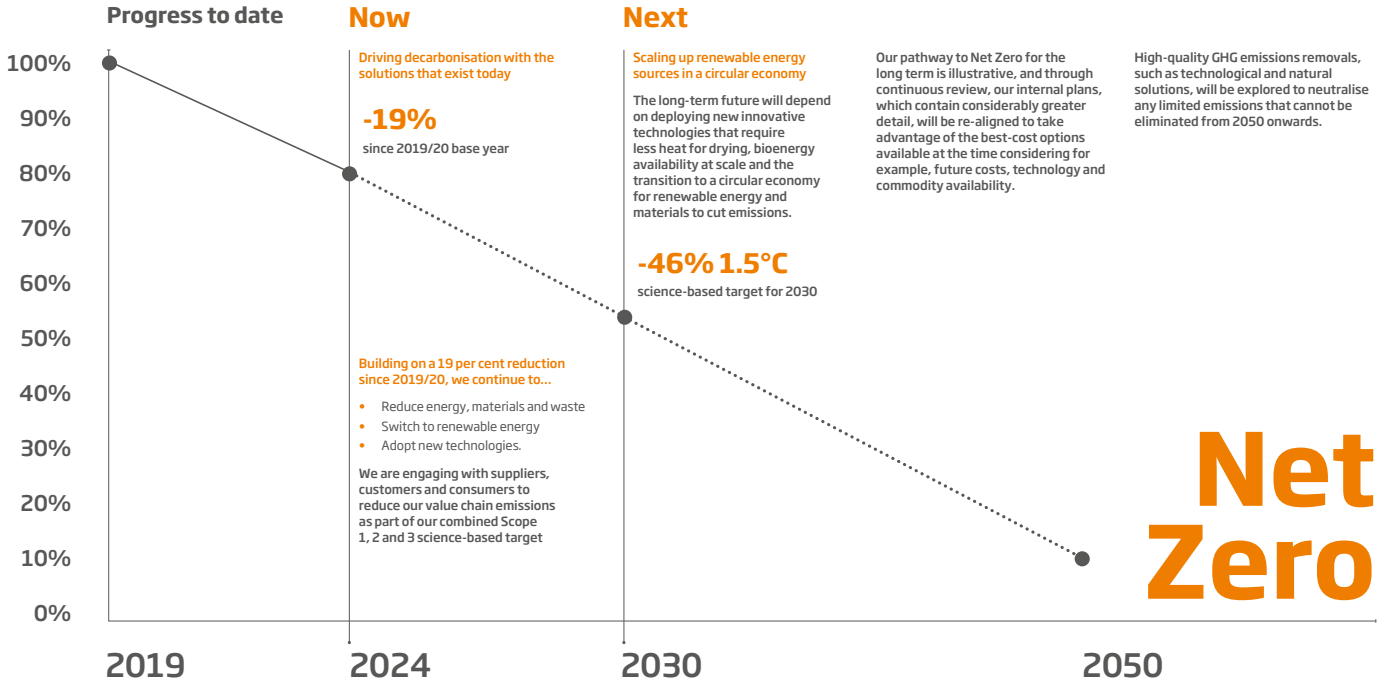
We will promote recycling towards increasing the average recycling rate for 2030, advocating for source segregation, consistent collections and greater clarity to enable consumers to recycle more.

Our plan is supported by

- Strong governance.
- Transparent reporting.
- Robust assurance.

As we continue to develop our internal roadmap and plans to reach Net Zero, we will explore the best ways to utilise each of these decarbonisation levers, in addition to others that may be developed between now and 2050. We will reduce greenhouse gas emissions urgently and cost effectively, taking into consideration the likely future availability and viability of options.

Our anticipated pathway to Net Zero GHG emissions



There are inevitable uncertainties relating to the precise timings of the deployment and delivery of our plan, which predominantly stem from planning far into the future. Actual future emissions are likely to vary as it is challenging to predict the future availability and cost of commodities, policy environment and timings of project delivery. Our internal plans take into consideration assumptions relating to future growth, which will impact emissions.

Rouen mill transition from coal to biomass

In partnership with Engie, the coal-fired boiler at Rouen is being replaced with a new biomass boiler, which will supply c. 80 per cent of the heat demand, with operation by 2025/26.

It is expected that the 56 MW Valmet boiler will be fuelled by c. 30 per cent by-products (pulper waste) and c. 70 per cent waste wood (e.g. from furniture and demolition waste).

It is anticipated that by 2025/26, this will reduce emissions by c. 99,000 tonnes, reflecting a significant transition delivery milestone alongside those at Kemsley and Aschaffenburg mills.

Practical considerations in our planning

With the support of our energy transition expert partners, we are continuing to evaluate the practical considerations associated with energy transition projects, as part of our planning.

This includes in-depth studies of potential transition changes to be made to some of our most energy-intensive assets, including our paper mills and largest packaging operations.

These assessments consider practical factors, such as regional availability of biomass and renewable certificate supply to meet future energy demand.

We have evaluated local issues, such as site space availability, permitting and the impact on site operations and local communities, such as increased traffic and site-level production growth.

As part of these assessments, assumptions have been made relating to discount rates, investment years and technical lifetimes, as well as future costs (e.g. carbon and commodity price forecasts).

The disclosures within this section of our TCFD disclosures have been prepared with reference to the UK Transition Plan Taskforce (UK TPT) framework, which aims to set the gold standard for private sector transition plans.

Our complete Net Zero Transition Plan, which describes our key actions and initiatives in greater detail, can be obtained from our ESG Reporting Hub on the DS Smith website.

Transitioning our own operations to Net Zero

Around one-third of our total greenhouse gas emissions are Scope 1 and 2 emissions, meaning that they are either direct emissions related to the use of fuels in our own operations (Scope 1) or indirect emissions relating to the electricity and steam we import to consume in our own operations (Scope 2).

We have identified the primary decarbonisation levers described on page 64. Within these levers is a roadmap of projects, at varied stages of project progression, with quantified costs and anticipated emission reductions.

Predominantly for our own operations, these projects include upgrades to physical assets, production processes and equipment, contractual changes and energy efficiency initiatives.

Often, changes made to one part of the process have a range of implications, for example, upgrading a waste water treatment plant, bringing improvements in water quality and biogas generation.

Examples of milestones in our transition plan

There are milestones within our plan that tackle our most significant emission sources. These build on the progress delivered at Kemsley mill, where one third of the steam demand is met by the neighbouring 'K3' waste-to-energy combined heat and power (CHP) generating facility and the remainder of the steam demand and electricity demand is met by a modernised E.ON owned and operated 'K4' plant.

2023/24

Preparation of our inaugural Net Zero Transition Plan, building on a 19 per cent reduction in total GHG emissions achieved since 2019/20

2024/25

Start of programme to introduce partial waste-to-energy transition (natural gas to refuse-derived fuel) at Aschaffenburg mill

2025/26

Anticipated commencement of biomass boiler operation (coal to biomass transition) at Rouen mill

Products and services

We anticipate that as society transitions to a 1.5°C future, demand for sustainable packaging will continue to rise as consumers are more conscious of their impact on the planet, necessitating greater recycling.

We are adapting our products and services strategies in response to this, realising our identified climate-related opportunities.

We work with some of the world's most iconic brands, which place climate change at the forefront of their agendas.

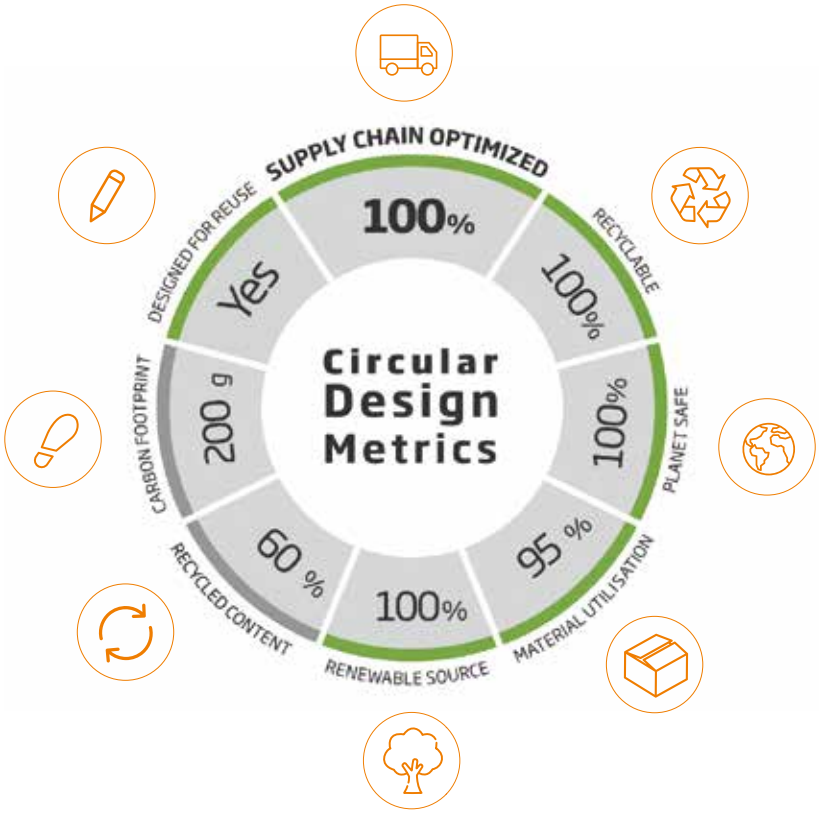
In response, this has impacted our product strategy, for example in the articulation of our customer value proposition, which was recently adapted to include 'Circular ready: we help our customers with circular packaging solutions'.

Crucially, as we implement our Net Zero Transition Plan in our own operations, we expect that the product carbon footprint will decrease.

Circular Design Metrics

We engage our customers using innovative tools such as our Circular Design Metrics, which help our customers compare the industry-average lifecycle carbon footprint* of different packaging and help our customers to identify opportunities for greater resource efficiency across the supply cycle and engage with them on sustainability campaigns.

* Carbon footprint calculation is based on industry-average data from the FEFCO cradle to grave life cycle assessment. The life cycle inventory data and methodology can be obtained from https://www.fefco.org/lca/.



Policies and conditions

We have a range of policies in place, from Carbon and Energy Efficiency to Sustainable Forest Management and Fibre Sourcing, that promote the necessary conditions to guide decision-making and actions that support the implementation of our transition plan. These are explored in our full Net Zero Transition Plan report, which can be downloaded from our ESG Reporting Hub on the DS Smith website.

The DS Smith Sustainability Report 2024 includes further information on climate-related topics, such as sustainable forest management, energy management and procurement.

Engagement strategy

Although we are not directly responsible for generating Scope 3 emissions, understanding our value chain emissions presents opportunities to influence decarbonisation. This involves engaging with stakeholders to identify reduction opportunities and encourage the deployment of initiatives to reduce emissions at scale.

Our engagements prioritise the business activities that generate the greatest emissions to maximise their contribution towards achieving our science-based target of reducing Scope 1, 2 and 3 greenhouse gas emissions 46 per cent by 2030 compared to 2019.

As part of setting the science-based target and calculating the base year Scope 3 emissions, we conducted a screening exercise to determine significant value chain emission sources.

The most significant emission sources include:

Upstream emissions

- Emissions from the manufacture of production-related goods (e.g. paper, starch), generated by suppliers.
- Well-to-tank emissions from natural gas, generated by energy suppliers.
- Emissions from waste sent to landfill, generated by waste management suppliers.

Downstream emissions

- Emissions from the manufacture of new recycled paper from paper for recycling sold to our customers.
- Emissions from waste that decomposes in landfill from consumer end of life disposal.

Reflecting these emission hotspots, our engagement efforts prioritise suppliers (e.g. strategic suppliers of paper and other production-related goods that have energy-intensive manufacturing processes) and customers (e.g. large global FMCG brands).

Further to this, we engage widely with industry, government, public sector and civil society to support the delivery of our transition plan.

Engaging our suppliers

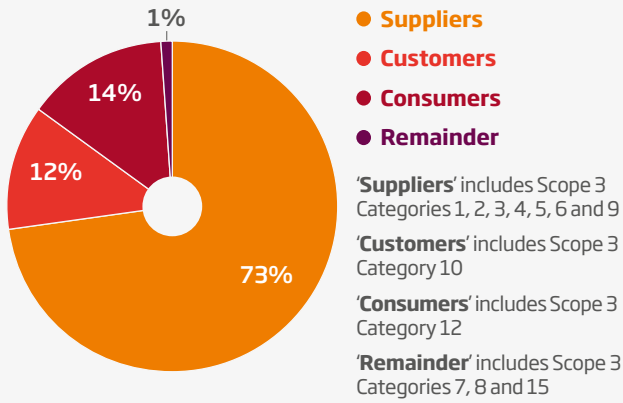
We engage our strategic suppliers to set science-based targets, deploying bespoke engagement mechanisms depending on supplier maturity, towards delivering our Now & Next supplier engagement target, 'by 2027, encourage 100 per cent of our strategic suppliers to set their own science-based targets'*.

We prioritise 'strategic suppliers', which we define as the suppliers with whom we hold a long-term, mutually cooperative relationship with mutual commitment, where significant and ongoing value is accrued to both parties through operational capabilities. In 2023/24, we categorised 110 of our suppliers as strategic. We typically have large amounts of annual spend with these suppliers, meaning that we have the greatest degree of leverage to influence actions.

Given that our strategic paper suppliers generate our greatest source of upstream emissions, our Paper Sourcing team regularly meets with these suppliers to review their decarbonisation progress, discuss their plans and identify opportunities to share knowledge.

We engage less mature suppliers through the Supplier Leadership on Climate Transition initiative, founded by some of our key customers, to encourage them to calculate their carbon footprint, set a science-based target and begin reducing emissions.

Scope 3



'**Suppliers**' includes Scope 3 Categories 1, 2, 3, 4, 5, 6 and 9

'**Customers**' includes Scope 3 Category 10

'**Consumers**' includes Scope 3 Category 12

'**Remainder**' includes Scope 3 Categories 7, 8 and 15

In 2023/24, we estimate that c. 42 per cent of our Scope 3 Category 1 (Purchased Goods and Services) emissions were generated by suppliers who have set or are in the process of setting their own science-based target (2022/23: 32 per cent).

Over the next year, we plan to engage a greater number of suppliers as a member of the CDP Supply Chain programme, building on our first CDP cycle in 2023. This enables us to collect data to understand the progress made in our supply chain.

In line with our Supplier Management policy, we aim to retain and engage suppliers in instances where the engagement does not lead to desired changes. In extreme cases, non-adherence can result in exiting a relationship with a supplier. We continue to assess the sustainability practices of our suppliers using EcoVadis, in addition to requiring that our suppliers adhere to our Global Supplier Standards.

* Within our base year Scope 3 inventory, we estimate that these companies generate c. 76 per cent of emissions in Scope 3 Category 1: Purchased Goods and Services. In 2023/24, we categorised 110 of our suppliers as 'strategic'. The percentage of emissions figure may change as we adopt supplier-specific emission factors in our greenhouse gas inventory.

Engaging our customers

We engage with our customers on a range of topics relating to Net Zero, including decarbonisation plans, product life cycle assessments and bespoke carbon data requests.

These engagements tend to prioritise our largest global FMCG brands, that have relatively mature sustainability strategies, comprehensive plans and advanced data requirements. They are typically pan-European brands with whom we have long-term significant relationships and from whom we generate significant revenues. These customers purchase significant volumes and work with us as their packaging strategists and circularity experts. Our value chains have become integrated and interdependent, increasing the degree of leverage to influence actions in our operations, our customers' operations and the value chain more widely.

This included, for example, purchasing renewable electricity via Energy Attribute Certificates (EACs) estimated to represent the electricity consumption associated with the production of packaging supplied to a global FMCG customer in certain markets.

It is difficult at this stage to accurately quantify the expected contributions of specific activities, but collective actions with many customers could contribute meaningful reductions.

Engagement with industry

We engage with industry peers predominantly through our trade association memberships. This includes participating in and/or chairing committees, sub-committees and working groups on specific topics.

These industry platforms provide an appropriate engagement mechanism as they tend to involve industry counterparts and other relevant adjacent industries, in well-governed, collaborative and consensus-driven environments.

Engagement activities are prioritised based on the perceived opportunity to build capacity and transfer knowledge (either to/from DS Smith and industry counterparts, within the industry and/or associated industries), build consensus and develop mutually beneficial capabilities that contribute towards achieving the strategic ambition of the transition plan.

Our current and planned engagement activities include engagements with:

- FEFCO (European Federation of Corrugated Board Manufacturers).
- Cepi (Confederation of European Paper Industries).
- EUROPEN (The European Organisation for Packaging and the Environment).
- 4evergreen.

We also engage through national trade associations, including:

- CPI (The Confederation of Paper Industries).
- The Packaging Federation.
- The Recycling Association.

Driven by significant issues from circularity to carbon, technical experts from across our business are involved in providing inputs to these engagements, aiming to actively influence climate change-related policy and related activities.

For example, 4evergreen, a cross-industry initiative to drive the recycling rate of paper products in Europe to 90 per cent by 2030, is a significant opportunity to reduce downstream (Category 12) Scope 3 greenhouse gas emissions.

Our Government Affairs function coordinates our approach to trade associations, monitoring that contributions and outcomes are in accordance with a 1.5°C future and that the engagements maintain alignment with the goals of the transition plan. This includes monthly internal briefings, policy monitoring and factsheets, disseminated to a wide cross-functional group, whose responsibilities are linked to the deployment of our transition plan.

Engagement with government, public sector, communities and civil society

Our engagement activities with government, public sector, communities and civil society are prioritised based on the perceived opportunity to influence policy towards a favourable legislative and policy landscape for the success of the Company, including in our ability to deliver our transition plan.

Government and public sector

This includes progressing and securing significant policy issues in the UK and the EU that involve key external factors that the delivery of our transition plan is dependent on, such as enabling greater recycling and decarbonising our industry in a predictable policy environment, ensuring a successful and smooth transition to Net Zero.

Crucially for the deployment of the transition plan, we call upon policymakers to remove uncertainty through a predictable policy environment that enables long-term planning and investment to achieve the aim of the Paris Agreement under the United Nations Framework Convention on Climate Change.

Policy priorities

Our policy priorities include:

Decarbonisation of heat

We call on governments to provide increased support for low carbon energy sources and to set out clear deployment timelines to enable industry to plan and invest for the future timely and efficiently

Reuse and recycling

We call on policymakers to promote packaging solutions that deliver the best outcome for the environment based on transparent and robust scientific evidence, whereby in a circular economy, both multi-use and recyclable single-use packaging have a role

Extended producer responsibility

We call on extended producer responsibility (EPR) systems to fund improvements in recycling infrastructure and investment in separate waste collection to achieve increased recycling rates

Specific policies, laws and regulations related to Net Zero

In 2023/24, our policy engagement specifically focused on:

- Revision of the Packaging and Packaging Waste Directive (via trade associations FEFCO and Cepi, and direct engagement).
- Delegated acts supplementing the EU Deforestation Regulation (via trade association Cepi).
- Revision of the Emissions Trading System Directive (via trade association Cepi).
- Revision of the EU Carbon Border Adjustment Mechanism (via trade association Cepi).
- Implementation of the UK Packaging Waste Regulations, including UK EPR (via trade associations CPI and Packaging Federation).
- Proposal for a UK Carbon Border Adjustment Mechanism (CBAM) (via trade association CPI).

Our strategic engagement and advocacy in these priority areas are helping to minimise risk and amplify opportunities in these areas for our business, maximising their contribution towards achieving the strategic ambition of our transition plan.

Our current and planned engagement activities include ensuring support and incentives for the decarbonisation of our industry, campaigning for high-quality recycling infrastructure and raising our profile amongst prominent politicians in the United Kingdom and the European Union. An example of this can be found in our recent publication, 'Wasted Paper: A Path to Better Recycling'.

Communities and civil society

One of our most prominent stakeholder relationships is with the Ellen MacArthur Foundation (EMF), of whom we are a strategic partner.

The EMF aims to promote the circular economy to eliminate waste and pollution, regenerate nature, minimise new resources and create an economy that benefits all. Significant areas of engagement activity with the EMF include initiatives relating to product design, policy events and policy goals.

We have worked together to develop our Circular Design Principles and Circular Design Metrics with experts in circular design from the EMF. We have collaborated to educate EU policy audiences on the circular economy and design for circularity at key events and we have contributed to the development of EMF's universal circular economy policy goals, enabling governments and businesses to benefit from the circular economy.

All of these activities contribute to our transition plan at the interface of circular economy and climate change.

Our engagements with communities and civil society tend to be highly localised and context specific. We are committed to engaging with our communities and civil society, particularly in instances where the deployment of this transition plan impacts these stakeholders.

It is difficult to quantify the expected principal contributions of this type of engagement as these engagements tend to address long-term, systemic issues. If left unaddressed, issues of a systemic nature could present risk to the delivery of our transition plan.

We therefore use our engagement to influence significant actors in government, parliamentary bodies, public sector, communities and civil society to help create the optimal external conditions in which to deliver our transition plan.

See the stakeholder engagement section of the DS Smith Sustainability Report 2024 for further examples of how we engage with our stakeholders

Wasted Paper: A Path to Better Recycling

Our comprehensive report, which can be downloaded from the DS Smith website, delves into the recycling rates for paper and cardboard packaging across Europe and the opportunity we have to achieve an aspirational 90 per cent target recycling rate by 2030. We make four key recommendations, including the introduction and enforcement of long-lasting, consistent recycling legislation to realise the benefits of keeping resources in use for longer in the circular economy.

Financial position, performance and cash flows

We consider the impact of climate change in preparing our consolidated financial statements, including the effect upon the application of our accounting policies, judgements, estimates and assumptions. In making our assessment of the impact, we consider climate-related risks and opportunities identified through our risk management processes as set out in our TCFD disclosures and in our Now & Next Sustainability Strategy.

These considerations, which are core to our strategy, do not have a material impact on any accounting estimates and judgements, including the estimated future cash flows used in the impairment assessment of goodwill; the assessment of residual values and useful economic lives of property, plant and equipment; or the adequacy of provisions for liabilities.

As we continue to identify the actions proposed to be taken to achieve our 1.5°C science-based target, we will continue to identify the capital projects, investments and other decarbonisation levers needed to achieve the strategic ambition of the transition plan.

These projects are considered over the time periods referred to on page 62 and will be prioritised with consideration for a range of factors, including asset retirement, technology availability and investment cost.

These factors are evaluated through annual budget reviews, informed by the corporate and capital planning processes. Any capital expenditure or project costs are anticipated to be funded through the existing or similar replacement financing structures of the Group.

Climate resilience

Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario

Our identified climate-related risks and opportunities, alongside example outcomes drawn from several IEA and IPCC climate scenarios, including industry-specific scenarios, are described in the tables that follow.

Climate-related risks

Climate-related risk	Description
 **Increased spend on carbon taxes** **Type:** Policy and legal transition risk **Time horizon:** Short term **Link to principal risk:** 'Regulation and governance' **Potential to impact:** our European paper mills, with the potential to extend to other regions	**Definition** New carbon taxes could be introduced, or existing carbon taxes, such as the European Union Emissions Trading System (EU ETS), could be extended as a policy tool to incentivise decarbonisation. **Example outcome in a 1.5°C scenario** Carbon taxes are introduced in new regions in the future, and/or schemes become more expensive to limit emissions. **Example outcome in a >2°C scenario** Carbon taxes are lower.
 **Increased cost of raw materials or threat to supply** **Type:** Market transition risk and/or acute or chronic physical risk **Time horizon:** Medium – long term **Link to principal risk:** 'Security of paper/fibre supply' **Potential to impact:** our Paper Sourcing and Procurement functions	**Definition** Raw materials, such as paper, pulp or starch, could become more expensive or difficult to acquire owed to disruption or shifts in market dynamics as a result of climate change. **Example outcome in a 1.5°C scenario** Disruption or shifts in market dynamics are less severe and more predictable, e.g. caused by planned regulatory change. **Example outcome in a >2°C scenario** Disruption or shifts in market dynamics are more severe due to chronic reasons, e.g. extreme weather causes crop failure.
 **Increased severity of extreme weather events** **Type:** Acute physical risk **Time horizon:** Medium – long term **Link to principal risk:** 'Security of paper/fibre supply' **Potential to impact:** specific geographies as identified by specialists, e.g. hurricanes on the south-eastern coast of the USA	**Definition** The frequency and severity of extreme weather events could increase, causing damage and disruption. **Example outcome in a 1.5°C scenario** Extreme weather is less severe, causing minimal disruption. **Example outcome in a >2°C scenario** Extreme weather is more severe, causing greater disruption, e.g. thunderstorms, tornadoes and extreme heat.
 **Increased likelihood of water stress** **Type:** Chronic physical risk **Time horizon:** Long term **Link to principal risk:** 'Regulation and governance' **Potential to impact:** specific geographies as identified by the WRI Aqueduct tool, particularly our paper mills which use significant volumes of water to convert paper for recycling back into pulp	**Definition** Competition for water could increase in the river basins from which we withdraw water, increasing the chance that water supply constraints could be imposed by local authorities. **Example outcome in a 1.5°C scenario** Water stress is less severe, causing minimal disruption. **Example outcome in a >2°C scenario** Water stress is more severe, with greater disruption, e.g. as greater consumption patterns drive up water usage.

Primary potential financial impacts	Key actions in our strategies that mitigate the risk
Increased operating costs (e.g. higher compliance costs) The scenarios explore a range of potential future carbon taxes. For example, if the cost per European Union Allowance (EUA) increased to €130 per tonne and if, as described by the IEA ETP 2°C scenario, a North American carbon tax was introduced, rising to $93 per tonne by 2030, this could amount to a cost of £107 million. Alternatively, with a lower cost of carbon estimated at €71 and $64 per tonne, this could amount to a cost of £45 million, which is more likely in a >2°C scenario with lower carbon taxes.	• Hedge the cost of fuel, energy and carbon with our suppliers and financial institutions. • Factor the cost of carbon into our net zero transition planning and analysis and optimisation of project deployment, alongside scenarios and forecasts of future growth and fuel availability. • Deploy actions in our Net Zero Transition Plan to deliver our 1.5°C science-based target, including switching from fossil to renewable fuels that reduce our GHG emissions and therefore limit exposure to carbon taxes.
Increased production costs (e.g. higher input prices) Higher input costs would have to be recovered through increased packaging pricing, which would increase revenue. If, for example, in a >2°C scenario, the average price of a key input was to increase by 10 per cent compared to present day, this could lead to an increase in production costs, assuming the same level of production as today, of £87 million. Alternatively, in a 1.5°C scenario, if only a 3 per cent increase was observed, owed to less severe disruption, this could lead to an increase in production costs of £26 million.	• Optimise the best fit between paper production, fibre sourcing and packaging demand to balance over the long term. • Remove unnecessary waste and save natural resources through innovative design, as part of delivering our Now & Next target to optimise fibre use for unique supply chains.
Increased capital costs (e.g. more repair and maintenance) This could be as a result of damage to property, which may result in higher insurance premiums, compounded by costs to ensure continuity of supply. We use a 'business interruption value-at-risk' metric to determine the potential impact of disruption caused by a climate-related event. If, for example, in a >2°C scenario, production was halted for a whole year at our highest-value site in a geographic region prone to specific climate events, this could present an incident valued at £90 million. If, in a 1.5°C scenario, disruption only lasted for one month due to a less severe climate-related weather event, this would be valued at £8 million.	• Ensure that climate resilience indicators are part of the evaluation process when evaluating strategic decisions relating to our production footprint and capacity planning. • Implement adequate and flexible business continuity plans, using data to improve climate modelling and to strengthen our business resilience with a changing climate pattern.
Decreased revenues and profit (e.g. temporary curtailment) This could be as a result of decreased production capacity because of limits placed on water withdrawal. We use the IPCC 4°C scenario to identify sites at risk of water stress and a 'business interruption value-at-risk' metric to determine the potential impact resulting from a climate-related disruption. If, for example, in a >2°C scenario, production was halted for 31 days at our highest-value site located in a region at future risk of water stress, this could present an incident valued at £2 million. Were this incident only to occur for seven days, in a 1.5°C scenario, this would be valued at less than £1 million.	• Invest in closed-loop solutions that recycle water and other water efficiency measures, from optimising the configuration of processes to modernising water intensive equipment. • Maintain localised water stress mitigation measures (water management and water scarcity plans) at sites with greater than 5,000m^3 water withdrawal, with business continuity planning, regular contact with relevant stakeholders (e.g. the water authority and local community) and monthly performance review.

Climate-related opportunities

Climate-related opportunity	Description
 **Growth in demand for sustainable packaging** **Type:** Products and services **Time horizon:** Short term **Link to principal risks:** 'Changes in shopping habits', 'Packaging capacity fluctuations', 'Organisation capability', 'Substitution of fibre packaging' **Alignment with strategic pillar:** To delight our customers **Potential to impact:** predominantly our Packaging business, with implications for our Paper, Paper Sourcing and Recycling operations	**Definition** Drive organic growth by demonstrating the benefits of circular packaging that helps brands and consumers to replace plastic and reduce their carbon footprint in the transition to Net Zero. **Example outcome in a 1.5°C scenario** Demand for sustainable packaging is greater as consumers are more conscious of their impact on the planet, necessitating greater recycling. **Example outcome in a >2°C scenario** Uptake for sustainable packaging is slower and appetite for recycling is lower, foregoing the opportunity.
 **Greater resource efficiency** **Type:** Resource efficiency **Time horizon:** Short term **Link to principal risks:** 'Paper/fibre price volatility', 'Sustainability commitments' **Alignment with strategic pillar:** To double in size and profitability **Potential to impact:** the whole business, but predominantly in packaging design to reduce material consumption and in the energy efficiency of our recycled paper mills, as they use heat to evaporate water in drying pulp and paper	**Definition** Use fewer resources (materials, energy and/or water), both in manufacture through design and operating efficiency, and throughout the value chain to reduce climate impact and cost. **Example outcome in a 1.5°C scenario** Greater resource efficiency is achieved across the industry at the 'system' level, for example, by encouraging markets to invest in improved recycling infrastructure to create cleaner waste streams. This has the added benefit of increasing energy efficiency, as cleaner material requires less processing. **Example outcome in a >2°C scenario** A lesser focus on resource efficiency fails to protect natural resources and the potential benefits are foregone.
 **Use of lower-emission energy sources** **Type:** Energy source **Time horizon:** Medium – long term **Link to principal risk:** 'Sustainability commitments' **Alignment with strategic pillar:** To lead the way in sustainability **Potential to impact:** the whole business, but predominantly our recycled paper mills, which rely on fossil fuels as, unlike primary pulp production, recycled production does not have biofuels readily available as a by-product from the wood used	**Definition** As energy systems evolve, there is an opportunity to adopt lower-emission energy sources and energy efficiency measures. These could be equipment-based (e.g. e-boilers and carbon capture and storage), fuel-based (e.g. hydrogen) or process-based (e.g. heat recovery and optimisation through digital and data innovation). **Example outcome in a 1.5°C scenario** Transitioning from fossil fuels to renewable fuels, including biomass, biomethane and hydrogen limits warming to 1.5°C. **Example outcome in a >2°C scenario** Lower-emission energy sources are not affordable or are unavailable at the scale required to achieve Net Zero and the fuel mix remains roughly the same as present-day.

Primary potential financial impacts	Key actions in our strategies that realise the opportunity
Increased revenues and profit (e.g. more sales) Organic growth and market share capture as a result of greater demand for recyclable packaging, enhanced by the added value of our sustainability, innovation and circularity credentials. If, for example, in a 1.5°C scenario, 1.5 per cent annual growth, as described in the IEA NZE 2050 scenario, could be fully exploited, by 2030 this could increase revenue by c. £637 million. Alternatively, in a >2°C scenario, with less demand for sustainable packaging, assuming 1 per cent annual growth, by 2030 this could increase revenue by c. £420 million. In each of these figures, we assume that the growth in paper production described in the reference scenario is a result of packaging demand, increasing packaging revenue.	• Support our design and innovation community with the tools they need to design for the circular economy, building on over 1,000 designs for millions of products geared towards reducing the use of plastic. • Invest in R&D (doubled to a £100 million package to deliver over five years) to include the creation of new breakthrough technologies in materials and design innovation to support the circular economy. • Identify new plastic replacement opportunities, including capitalising on opportunities brought about by regulatory changes, e.g. the Single Use Packaging Directive and Packaging and Packaging Waste Regulation (PPWR).
Decreased production costs (e.g. less material consumption) Decreased cost as a result of reduced materials, energy and water consumption, increasing profitability and added positive reputation value associated with a low environmental impact product. If, for example, in a 1.5°C scenario, energy intensity reduced by c. 2 per cent per year to 2030, as described in the IEA NZE 2050 scenario, this would result in a saving of c. £37 million. Alternatively, if in a >2°C scenario, only a 0.6 per cent decrease in energy consumption was secured, as described in the IEA SDS 2030 scenario, the saving would be reduced to c. £12 million. Beyond this example of energy efficiency, material efficiency through better product design and supply chain optimisation could present more savings and value creation opportunities.	• Reduce energy consumption as part of our Group-wide ISO 50001:2018 certified energy management system at 100 per cent of relevant sites to continuously improve energy performance, cost and GHG emissions, with site-level targets and monitoring. • Advocate for separate collection of recyclables to improve quality of material by reducing contamination, increasing recycling rates, lowering environmental impact and cost for local authorities as part of our engagement with policy makers. • Work with our customers to reduce fibre consumption, predominantly through better design, as part of delivering our Now & Next target to optimise fibre use for unique supply chains.
Decreased operating costs (e.g. less fossil fuel consumption) Decreased cost as a result of reduced energy consumption and less exposure to future fossil fuel price increases and sensitivity to the cost of carbon. Added returns on investment secured from low-emission technology. According to the IEA NZE 2050 scenario, it will be important to move away from fossil fuels to near zero-emission alternatives for the industry to reach Net Zero, with the proportion of renewable fuels in the average energy mix increasing from 43 per cent to almost 50 per cent in 2030. Assuming average renewable/non-renewable fuel costs, achieving this transition could present an energy cost reduction of £77 million. Alternatively, were no transition achieved, this would be zero. Inevitably costs would be incurred in achieving this transition which are not included in this analysis.	• Investigate opportunities to implement lower-emission energy sources, including the viability of renewable fuel sources as fossil fuel alternatives, to be well-positioned to take advantage of lower-emission energy sources. • Deploy actions in our Net Zero Transition Plan, which includes initiatives relating to switching to lower-emission energy sources so that our business can grow without increasing emissions, realising the benefits of harnessing renewable energy.

Climate scenario analysis methodology

In order to increase the utility of our climate scenario analysis, we draw on industry-specific reference scenarios.

Industry-specific reference scenarios:

- Provide data that fits with our business and industry data.
- Address some of the decarbonisation challenges and climate-related risks and opportunities that we face.
- Align with the latest international agreement on climate.

They include information to 2030 and 2050, the same time horizon as our science-based target and Net Zero commitment.

The selected scenarios, developed for the pulp and paper sector, predominantly focus on our paper businesses because these are our most energy-intensive operations.

IEA NZE 1.5°C by 2030 (Pulp & Paper)

In this scenario, growth in production and energy consumption are decoupled to achieve decarbonisation to the extent required to be on track with the Sustainable Development Scenario (SDS) by 2030.

IEA Net Zero Emissions by 2050 (Pulp & Paper)

In this scenario, annual production expands, necessitating greater recycling. Using a higher share of bioenergy is important to align with the Net Zero by 2050 trajectory.

We supplement these with non industry-specific scenarios that reflect a range of warming trajectories, including greater than 2°C by 2100 compared to pre-industrial levels, presenting a range of contrasting futures, including an alternative to the 1.5°C scenario. They address cross-industry issues, such as carbon taxes.

The scope includes our packaging and paper businesses.

IEA ETP SDS 2°C

In this scenario, mitigation measures are applied to carbon intensive industries, alongside technological advancements to the extent required to limit global warming to within 2°C by 2100 versus pre-industrial levels.

IPCC RCP 8.5 4°C

In this scenario, a 'business as usual' state of no policy changes leads to growth in emissions, causing some of the physical effects of climate change to be felt with greater severity.

In each scenario, we assume that we have the same activities as today, drawing on financial and non-financial data from the most recent reporting period at the time of the analysis. We model the most relevant reference points from the scenarios and use financial data to assess potential future effects on financial metrics. The primary potential financial impact figures given are illustrative estimates, given within the context of each scenario. The analysis was updated in May 2024 and some of the estimates have changed compared to last year, due to changes in the inputs to our climate scenario analysis model. For example, revenues, costs and currency exchange rates have changed compared to those used previously. For water stress, the latest version of the WRI Aqueduct tool has updated inputs to the hydrological model, providing more accurate baseline data, as well as future projection data for 2030, based on the latest climate models. The estimates provided may therefore be incomparable to those previously given.

Resilience based on climate scenario analysis

The results obtained from analysis suggest that our present-day strategy is resilient to climate-related risks and opportunities and that we would not need to make fundamental changes to our business model between now and 2030, under a variety of contrasting future warming scenarios.

The strategic ambition of our Net Zero Transition Plan, including our science-based target, guides us towards maximising the identified opportunities arising from the transition to a 1.5°C world.

Our transition plan helps to mitigate climate-related risk through the deployment of roadmap projects, combined with appropriate risk management practices, increasing resilience.

As we decarbonise alongside the entire industry, we see an opportunity to be at the forefront of leading the transition to a circular economy, which, compared to the linear economy, is a better system for tackling climate change, pollution and biodiversity loss.

Significant areas of uncertainty

The scenarios used in our analysis explore a range of assumptions about how climate change and variables such as carbon taxes, rates of energy efficiency and river basin water demand may develop far into the future. Inevitably, there is inherent uncertainty relating to these variables and how they would likely develop towards 2030.

We consider these uncertainties to be acceptable, as the results from this analysis are used to assess resilience at a high-level to inform strategic responses, such as the decision to commit to a 1.5°C science-based target.

Risk management

Describe the organisation's processes for identifying and assessing climate-related risks

We undertake regular materiality analysis to ensure our sustainability priorities remain aligned to those of our stakeholders. In developing our Now & Next Sustainability Strategy, we consulted our stakeholders on a range of issues, including climate change, asking them about their perception of each issue as a risk or opportunity to our business.

In 2022/23, we refreshed this analysis through a 'double materiality' lens, considering financial materiality (e.g. the impact of climate change on the Group) and impact materiality (e.g. the impact of the Group on climate change). This is described in detail on page 35.

The results reinforced climate action, energy use and efficiency, product design for optimal resource use, recyclability and transitioning to a circular economy as of critical importance for the business and for the planet and society. These topics, considered of 'critical importance', are captured within our climate-related risks and opportunities.

These results, alongside a range of other credible sources such as industry research, are used to grade risks using the likelihood of the risk occurring and an estimate of the severity of resulting financial or strategic impacts over various time horizons.

Based on this risk grading, the highest graded risks are evaluated in greater depth, considering our operations, supply chain, stakeholder expectations and regulation.

Transition risks are assessed by the Group Risk and Insurance, Group Sustainability, Government and Community Affairs, and Group ESG Reporting teams, working across functions to develop responses to the financial and strategic implications.

Physical risks are assessed by each division, supported by the Group Risk and Insurance team, drawing on expertise from specialist organisations.

Our physical climate risk assessment includes inputs and parameters:

- Site location, with engineering and behavioural considerations.
- Third-party climate exposure data and intelligence, including:
  - Environmental mapping (e.g. wind and flood maps).
  - Satellite imagery.
  - Data models for temperatures and consecutive dry days.
  - Data models for maximum one day and five day precipitation.
  - Standardised Precipitation Index.
  - Statistics relating to sea level rise and wind.

This includes the identification of specific event-driven risks, combining engineering visits, natural hazard maps and global climate model data to produce recommendations that maximise resilience to climate-related risk.

Climate scenario analysis is used to identify acute and chronic physical risk at our locations, according to a range of scenarios, in the long term (to 2030 and 2050), specified by peril.

This includes scenarios relating to a range of potential future outcomes, covering:

- Extreme precipitation.
- Wind.
- Temperature.
- Drought.
- Sea level rise.

This insight identifies the locations with the greatest exposure to these perils, with financial metrics including property value and business interruption value at risk.

These analytics include ongoing monitoring, covering all our operations, and are used to inform our insurance and resilience policies.

Climate-related opportunities are predominantly identified and assessed by the Group Sustainability team, who lead the sustainability materiality analysis and propose the strategic direction of the Group for sustainability by way of the Now & Next Sustainability Strategy, which sets the strategic ambitions to realise climate-related opportunities, as well as respond to climate-related risks.

Climate change could affect the availability of raw materials and production processes, while natural disasters can disrupt supply chains and damage infrastructure. It could also enhance the focus and opportunities presented to DS Smith from investment into alternatives, innovation and focus on regulation. In considering the prioritisation of climate-related risks and the relative significance of climate-related risks in relation to other risks, we assess climate change factors within the wider context of our Group principal risks (see pages 51 to 55), given that climate change may amplify or dampen some of the Group's principal risks.

This integrated approach reduces the chance of inadvertently neglecting or creating a trade-off between climate change and other risks, ensuring that climate-related risks and opportunities are embedded in the Group's enterprise risk management and corporate planning. This situates climate-related risks and opportunities alongside, and integrates climate-related risks and opportunities with, other types of risks and opportunities.

Describe the organisation's processes for managing climate-related risks

Our process for managing, including monitoring and prioritisation of, climate-related risks involves deciding whether to avoid, transfer, mitigate or accept a given risk. This is influenced by a range of factors, such as the type of risk, site location, investment needed and forecasts of volume demand.

Our risk management processes require that our principal business risks, including climate risks, are graded on a scale from negligible to critical using specific impact criteria such as a financial value range. By way of example, a financial impact between 2.5 per cent and 10 per cent of operating income or net profit is graded as a moderate strategic or financial risk.

Specialist Group functions (e.g. energy procurement), Sustainability Steering Committees (e.g. nature) and working groups (e.g. those deploying our Net Zero Transition Plan) work across the divisions and functions to implement mitigation measures through the delivery of our Now & Next targets that address climate-related risks and opportunities. These teams draw on internal and external resource, utilising specialist analysis, tools and expertise.

For example, we have applied forecasts relating to the carbon price, electrical demand, decarbonisation policy, renewable deployment, and availability of technologies in our project work to inform decarbonisation roadmaps for our packaging plants to manage climate-related risk, as part of implementing our Net Zero Transition Plan.

Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management

Climate-related risks and opportunities are integrated into our principal risk assessments and corporate planning, evaluated using the Group's common risk language, where such risks could significantly affect the business during the Corporate Plan time horizon.

All divisions and Group functions produce formal principal risk assessment reports twice per year and undertake frequent risk reviews, considering the grading, trends and controls. The most significant climate-related risks and opportunities are selected for climate scenario analysis, prioritising those for which high-quality data is available.

Key mitigating actions in response to climate-related risks, such as the science-based target, are agreed and developed by specialist working groups and teams, with the sponsorship of the Carbon, Water and Waste Steering Committee and approval of the HSES Committee. These are prioritised based on factors such as materiality, regulatory requirements and commercial opportunity. For example, actions relating to climate change and the circular economy are prioritised given that our stakeholders considered these issues of 'critical importance' in the most recent materiality assessment.

Prioritised actions are implemented by the relevant sustainability working group, project teams and site teams, with accountability for delivery with Divisional and Functional leadership. Management performance, including challenges and opportunities relating to deploying mitigating actions, is reviewed alongside the wider review of sustainability performance and strategy progress. Any material risks to deployment are captured in our regular operational risk reviews (see pages 49 and 50).

Our processes for identifying, assessing, prioritising and monitoring climate-related risk are unchanged compared to the prior period.

Metrics and targets

Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process

Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks

Group greenhouse gas (GHG) emissions (Streamlined Energy and Carbon Reporting (SECR))

Metric	Unit of measure	**2023/24**	2022/23	2019/20 (base year)	Compared to last year	Compared to base year
Direct (Scope 1) GHG emissions	tonnes CO_2e	**1,340,272***	1,542,250*	2,181,890	-13%	-39%
Indirect (Scope 2 market-based) GHG emissions	tonnes CO_2e	**944,921***	833,759*	792,275	13%	19%
Indirect (Scope 2 location-based) GHG emissions	tonnes CO_2e	**922,923***	891,267*	875,544	4%	5%
Indirect (Scope 3) GHG emissions	tonnes CO_2e	**4,700,076**	5,015,409	5,671,528	-6%	-17%
Total GHG emissions	tonnes CO_2e	**6,985,269**	7,391,418	8,645,693	-5%	-19%
Gross Scope 1 and 2 (market) GHG emissions	tonnes CO_2e	**2,285,193***	2,376,009*	2,974,165	-4%	-23%
GHG emissions from energy export	tonnes CO_2e	**488,604***	529,699*	791,810	-8%	-38%
Net Scope 1 and 2 (market) GHG emissions	tonnes CO_2e	**1,796,589***	1,846,310*	2,182,355	-3%	-18%
Energy consumption	MWh	**14,058,435***	14,407,601*	15,707,667	-2%	-10%
Energy exported	MWh	**1,525,376***	1,739,186*	1,977,616	-12%	-23%
Total production	tonnes	**9,874,853***	10,164,657*	10,222,065	-3%	-3%
GHG emissions (net) per tonne of production	kg CO_2e /t nsp	**182***	182*	213	0%	-15%
Outside of scopes GHG emissions	tonnes CO_2e	**1,022,400***	1,018,232*	911,659	0%	12%

UK reporting: 4 per cent of Scope 1 emissions and 29 per cent of Scope 2 (market-based) generated by UK-based operations in 2023/24.

12 per cent of energy consumption consumed by UK-based operations in 2023/24.

Group Indirect (Scope 3) value chain greenhouse gas (GHG) emissions

Scope 3 category	Unit of measure	**2023/24**	2022/23	2019/20 (base year)	Compared to last year	Compared to base year
1: Purchased goods and services	tonnes CO_2e	**2,233,164**	2,341,614	2,562,626	-5%	-13%
2: Capital goods	tonnes CO_2e	**141,634**	161,217	96,891	-12%	46%
3: Fuel- and energy-related activities	tonnes CO_2e	**480,239***	471,063	425,243	2%	13%
4: Upstream transportation and distribution	tonnes CO_2e	**363,900**	377,052	407,883	-3%	-11%
5: Waste generated in operations	tonnes CO_2e	**101,192***	119,671*	252,834	-15%	-60%
6: Business travel	tonnes CO_2e	**3,102**	3,912	4,173	-21%	-26%
7: Employee commuting	tonnes CO_2e	**4,903**	5,390	7,992	-9%	-39%
8: Upstream leased assets	tonnes CO_2e	**4,037**	4,110	4,507	-2%	-10%
9: Downstream transportation and distribution	tonnes CO_2e	**104,621**	109,260	109,381	-4%	-4%
10: Processing of sold products	tonnes CO_2e	**581,463***	693,418	943,600	-16%	-38%
12: End of life treatment of sold products	tonnes CO_2e	**654,726***	693,027	780,090	-6%	-16%
15: Investments	tonnes CO_2e	**27,095**	35,675	76,308	-24%	-64%
Total Indirect (Scope 3) GHG emissions	**tonnes CO_2e**	**4,700,076**	5,015,409	5,671,528	-6%	-17%

Scope 3 Categories 11, 13 and 14 are excluded on the basis of irrelevance to our value chain, as described in our Basis of Preparation.

GHG emissions are reported in accordance with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (Revised), under a financial control boundary. Department for Business, Energy & Industrial Strategy (BEIS) 2022 emission factors are applied, unless emission factors from other sources are deemed more appropriate. See our Basis of Preparation, available from our ESG Reporting Hub.

* Independent Assurance has been obtained for metrics marked '*', see the statement below.

Independent Assurance Statement

Deloitte have provided independent third-party limited assurance in accordance with the International Standard for Assurance Engagements 3000 (ISAE 3000) and Assurance Engagements on Greenhouse Gas Statements (ISAE 3410) issued by the International Auditing and Assurance Standards Board (IAASB) over the selected information, identified with * in the above table, and other selected information relating to carbon, energy, water, waste, production and employee diversity identified with * within the DS Smith Annual Report 2024, DS Smith Sustainability Report 2024, DS Smith Net Zero Transition Plan 2024 and DS Smith ESG Databook 2024.

Deloitte's full unqualified assurance opinions, which include details of the selected information assured in 2023/24, 2022/23 and 2021/22, can be found on our ESG Reporting Hub, at https://www.dssmith.com/sustainability/reporting-hub.

Independent third-party limited assurance of selected information for the 2019/20 base year was provided by Bureau Veritas.

See the full assurance statement on our ESG Reporting Hub, at https://www.dssmith.com/sustainability/reporting-hub.

Carbon pricing

We use internal carbon pricing as a tool to assess and manage carbon-related risks and opportunities. We apply an internal carbon price on an ad-hoc, project-by-project basis to arrive at the best cost solution, balancing financial and non-financial outcomes.

For example, in our strategic assessment to achieve Net Zero, we modelled growth and investment phasing over 30 years to tackle our greatest emission sources.

The analysis included a range of historic and forecast carbon prices, as well as carbon offset costs.

Climate-related remuneration

The importance of ESG and sustainability, including climate change, continues to be emphasised by the use of a variety of ESG considerations as an underpin to the annual bonus.

In 2023/24, the three elements of the ESG underpin were met, including the roll out of an updated Now & Next Sustainability Strategy, which includes our approach to the delivery of science-based targets.

When considering the application of discretion to override the formulaic outcome for the 2024/25 annual bonus, the Remuneration Committee will take into account, alongside other ESG factors, continued delivery of the updated Now & Next Sustainability Strategy and of progress towards our science-based targets, taking account of updated actual performance and current customer/regulatory requirements. For more information, see page 119.

Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets

Industry-specific metrics and targets used to assess and manage outcomes of climate-related risks and opportunities

Climate-related risk or opportunity	Metric	Unit of measure	2023/24	2022/23	2021/22	Trend
Increased spend on carbon taxes	Gross global Scope 1 emissions	tonnes CO_2e	**1,340,272***	1,542,250*	2,023,278*	↓
	Percentage covered under emissions-limiting regulations	Per cent	**70***	73*	79	↓
Now & Next target: By 2030, reduce Scope 1, 2 and 3 GHG emissions by 46 per cent compared to 2019						
Increased cost of raw materials or threat to supply	Percentage of fibre use optimised for individual supply chains[1]	Per cent	**90**	64	26	↑
Now & Next target: By 2025, optimise fibre for individual supply chains in 100% of new packaging solutions						
Increased severity of extreme weather events	Internal and highly localised insurance metrics (financial and non-financial), such as loss expectancy and proprietary risk scores, which can be compared within the Company and across the industry					
Increased likelihood of water stress	Total water withdrawals	m^3	**52,477,496***	53,802,571*	54,644,995*	↓
	Percentage of water withdrawn from areas at risk of water stress	Per cent	**29***	38	31	↓
	Percentage of paper mills and packaging sites with a water management plan in place	Per cent	**10**	-	-	-
Now & Next target: By 2025, 100 per cent of our paper mills and packaging sites to have water management plans[2]						
Growth in demand for sustainable packaging	Number of pieces of plastic replaced	Million units	**Over 1.2 billion (cumulative to the end of 2023/24)**			↑
Now & Next target: By 2025, help our customers to replace one billion pieces of plastic with alternative fibre-based solutions						
Greater resource efficiency	Total energy consumption	MWh	**14,058,435***	14,407,601*	15,324,120*	↓
	Water withdrawals at mills in areas at risk of water stress	m^3/t nsp (tonne net saleable production)	**7.9***	8.9*	8.1	↓
Now & Next target: Maintain ISO 50001:2018 certification at 100 per cent of in-scope sites, covering 90 per cent of total energy consumption						
Use of lower-emission energy sources	Percentage of overall energy consumption from renewable sources	Per cent	**29***	26	21	↑
	Percentage of electricity consumed that was generated from renewable sources	Per cent	**11***	15	13	↓
Now & Next target: Reach Net Zero GHG emissions by 2050						

Selected information marked with an asterisk (*) has been independently assured by Deloitte – see the Independent Assurance Statement on page 76.

1. This figure represents c. 74 of our conventional packaging sites for which BSIR (Board Strength Index Rating) data is available. It does not capture all packaging designs and specifications and excludes board purchased externally and sheet board sales. See DS Smith Sustainability Report 2024, page 17.
2. Target updated from 'Maintain water stress mitigation plans at 100 per cent of our sites in current or future water stressed areas'. Scope includes manufacturing sites with >5,000m^3 annual water withdrawal.