

# What science can do

**AstraZeneca** Task Force on Climate-related Financial Disclosures Statement 2023



# Task Force on Climate-related Financial Disclosures Statement <sup>BV</sup>

## Our commitment to addressing the impacts of climate change

Climate change and the degradation of ecosystems are already impacting human health and undermining the capacity of health systems. The World Health Organization (WHO) estimates that 13.7 million people die each year from environmental health risks<sup>1</sup>, including 6.7 million from air pollution alone<sup>2</sup>. Heat-related deaths have more than doubled in the last decade, and heat exposure can result in heat-related illness and exacerbate underlying health conditions.<sup>3</sup> Climate change also threatens access to water resources, including sanitation, which is essential for disease prevention, and to the provision of healthcare services. The complex network of relationships that connects human and planetary health requires a systems-level approach to be taken to address the interconnected challenges of climate change, health resilience and health equity.

Healthcare is responsible for approximately 5% of total global greenhouse gas (GHG) emissions<sup>4</sup>, so stakeholders across the sector have a role to play in tackling the climate crisis. The commitments and actions AstraZeneca has taken through our flagship \$1 billion Ambition Zero Carbon strategy ensure that we are driving deep decarbonisation across our organisation and value chain, which includes identifying opportunities that transitioning to a low-carbon economy could present for our business. As part of Ambition Zero Carbon and our AZ Forest initiative, we are also expanding our investment in reforestation and biodiversity in support of climate and health. In 2023, we increased our investment to \$400 million to plant and ensure the survival of 200 million trees across six continents by 2030, generating positive environmental, health and socio-economic co-benefits of reforestation.

We support the Task Force on Climate-related Financial Disclosures (TCFD) framework and have made disclosures within the 2023 Annual Report consistent with the four TCFD recommendations, the 11 recommended disclosures and all sector guidance, and in compliance with the requirements of Listing Rule 9.8.6R(8) of the UK Financial Conduct Authority (FCA) and in compliance with sections 414CA and 414CB of the Companies Act 2006 and amended by The Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022. This report is in addition to the TCFD Summary Statement on pages 51 to 53 of our Annual Report, where we make the required disclosures and explain where additional information can be found. We have applied the TCFD framework annually since 2020 and continued to apply it to describe activities conducted in 2023.

All our business operations worldwide are in scope, unless otherwise stated. The framework was introduced with a risk-based approach focusing on the most material risks and opportunities. Future priorities to broaden the scope to include medium- and low-risk areas are indicated in each section.

## Outcome of assessments of climate-related risks and opportunities

We will build resilience by addressing the physical and transitional risks and opportunities from climate change across the value chain, through adaptation and business continuity planning. In many cases, mitigation measures are already in place, including for the risks and opportunities presented by the transition to a low-carbon economy and the provision of net-zero healthcare. Based on current assessments, climate-related risks, both physical and transitional, are included within the risk 'Failure to meet regulatory or ethical expectations on environmental impact, including climate change', which is a specific risk in the Group's risk landscape. However, this is not currently considered to be a Principal Risk for the Group.

## Climate change and our strategy for physical risks

It is critical to understand the physical hazards from climate change (such as extreme heat, floods, droughts and high wind speed) and the risks to our value chain, including to our workforce, local communities, suppliers, partners and patients, as well as our assets. Working in a preventive way, we will implement planned response strategies and minimise interruptions from acute weather events and longer-term shifts in chronic climate patterns leading to, for example, sea-level rise or chronic heatwaves.

We have screened physical risks from climate change across our operations and strategic suppliers (defined by cost of interruption and strategic importance) to assess climate change-related hazards arising under three different scenarios by 2030, 2050 and 2100,

including a worst-case scenario (SSP5-RCP 8.5). We combined the results of climate assessments conducted in 2020 and 2021 with a business criticality prioritisation process to identify material sites for further deep-dive assessment in 2022. In 2023, we continued to focus on strategic partners with a critical role in patient supply that are most exposed to climate-related hazards in our predictions, to understand their resilience to climate change (including, for example, drug manufacturing in bulk, Quality Assurance/Quality Control testing, and distribution centres).

## Climate change and our strategy for transition risks and opportunities

The nature of the risks and opportunities we face is not solely driven by the physical aspects of climate change. Regulatory, technical and commercial changes in the markets in which we operate are already resulting in pressures to reduce the GHG footprint of specific medicines. Understanding the potential impact of future climate scenarios on healthcare providers, including our customers, their supply chains and our patients, together with proactive mitigation, intervention plans and targeted investment, will future proof our business and build resilience to ensure our long-term financial sustainability and the continued supply of medicines to patients.

## Targets, commitments and initiatives

To respond to the identified climate risks and opportunities, we are taking action across the Group, and are committed to near-term and longer-term absolute GHG reduction and net-zero targets which have been verified under the Science-Based Targets initiative Net-Zero Corporate Standard.

## Near-term targets and commitments

- > Achieve 98% absolute reduction in Scope 1 and Scope 2 GHG emissions by 2026 from a 2015 baseline.
- > Maximise our transition to electric vehicles in our road fleet (EV100) by the end of 2025.
- > Use 100% renewable energy (RE100) for power and heat by the end of 2025.
- > Double energy productivity (EP100) from 2015 by the end of 2025.
- > Launch first next-generation respiratory inhalers with a near-zero climate impact propellant from 2025.
- > Align supplier spend to companies with approved science-based targets (SBTs) by the end of 2025, covering 95% in Scope 3 Categories 1 and 2 and 50% in Scope 3 Categories 4 and 6.
- > Plant and maintain over 50 million trees by the end of 2025 as a nature-based solution to enhance climate, ecological and community resilience through our global AZ Forest initiative.

For more information, see:

Risk supplement and TCFD disclosures, on our website, [www.astrazeneca.com/annualreport2023](http://www.astrazeneca.com/annualreport2023).

Sustainability Report on our website, [www.astrazeneca.com/sustainability/resources.html](http://www.astrazeneca.com/sustainability/resources.html).

CDP response for further disclosures (2022 performance) on our approach to climate change is available at [www.cdp.net/en](http://www.cdp.net/en).

Scenario table on page 4 of this Statement.

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### Longer-term targets and commitments

- > Achieve 50% absolute reduction in total Scope 3 GHG emissions by 2030 and 90% absolute reduction by 2045, from a 2019 baseline, to achieve science-based net zero.
- > Become carbon negative for all residual emissions from 2030 – meaning that we will offset more GHG emissions than we emit – and remove our residual GHG emissions from the atmosphere by investing in high-quality, nature-based removals.
- > Transition to next-generation respiratory inhalers with a near-zero climate impact propellant across our portfolio by 2030.
- > Plant and steward 200 million trees by 2030, building on our initial AZ Forest investment, including new or expanded projects in Brazil, India, Vietnam, Ghana, Rwanda and Kenya that will contribute to our climate action, restore nature, improve human health, promote biodiversity, and build ecological and community resilience, spanning over 100,000 hectares worldwide.

### Initiatives

In March 2023, AstraZeneca was one of seven global pharmaceutical companies that came together to set joint, minimum climate and sustainability targets for suppliers to address emissions across the value chain, through the Sustainable Markets Initiative (SMI) Health Systems Task Force (HSTF). This public-private collaboration comprised 13 global leaders from across the health sector and is chaired by Pascal Soriot at the invitation of His Majesty King Charles III, in his former role as His Royal Highness The Prince of Wales, and aims to accelerate the transition to net-zero health systems. In an open letter published in July 2023, the private sector members of the HSTF called on suppliers to sign up to the targets and play their part to decarbonise the healthcare value chain. The initiative is intended to reduce the complexity of multiple asks for suppliers by setting common expectations of the minimum targets that suppliers should achieve. More stringent individual company targets will take precedence as relevant.

In November 2023, ahead of COP28, AstraZeneca and members of the SMI HSTF announced that they are in advanced discussions with energy providers in China and India to scale renewable power across their supply chains. This is the first time that

companies from across the global healthcare sector have come together to pioneer such initiatives in these countries. In addition, recognising the importance of a harmonised method to measure and report the environmental impact of medicines and healthcare products, the HSTF announced it has worked with the Pharmaceutical Environment Group through a newly created consortium and NHS England to support the development of a sector-wide standard for medicines Life-Cycle Assessment (LCA). With support from experts, the delivery of this LCA standard will improve transparency and support the assessment and reduction of the environmental impact of medicines across their manufacture, supply, use and end of product life.

To reduce our Scope 3 emissions, AstraZeneca is engaging with our suppliers across our value chain, working to accelerate the decarbonisation of active pharmaceutical ingredient (API) supply chains, and addressing this shared challenge in collaboration with other global pharmaceutical companies through the Activate programme. Since joining Activate at COP27, we have worked with 65 of our supplier sites to provide primary data on their environmental footprint, build detailed reduction action plans and connect them with third-party support and funding to accelerate their journeys.

In addition, through our participation as a co-founder of the Energize collaboration with Schneider Electric and global pharmaceutical companies to facilitate access to renewable power at scale, 286 AstraZeneca suppliers have registered with the programme. In 2023, a collaboration was announced between Energize and the Pharmaceutical Supply Chain Initiative to accelerate the adoption of renewable energy across the pharmaceutical sector supply chain to support their transition to net zero. By enabling suppliers to reduce their Scope 2 emissions, the programme in turn enables us to reduce our Scope 3 emissions.

The research, development and production of medicines is energy intensive. As part of our transition to net zero, in 2023 we announced a series of innovative partnerships that are decarbonising our operations, expanding access to renewable energy and contributing to the circular economy:

- > US: In a first-of-its-kind initiative, we collaborated with Vanguard Renewables to enable the delivery of renewable natural gas (RNG) to all our research and manufacturing sites in the contiguous US by 2026. From June 2023, AstraZeneca began purchasing RNG produced by Vanguard Renewables for our Newark Campus in Delaware, where the Company packages 27 medicines for distribution across the US and makes medicine formulations for global supply. By 2026, this collaboration will enable as much

as 650,000 million British thermal units (MMBtu), or 190,500 megawatt-hours (MWh), per year of RNG to be used across AstraZeneca's US sites, equivalent to the energy required to heat more than 17,800 US homes for a year. In November 2023, we announced an expansion of our collaboration with Vanguard Renewables, aiming to significantly increase the productivity of US renewable natural gas generation.

- > Sweden: We entered into a 10-year power purchase agreement with Statkraft, Europe's largest renewable energy producer, to source electricity from a wind farm in Sweden that will supply 200 gigawatt-hours (GWh) per year to our Swedish sites at Gothenburg and Södertälje. This new-to-grid project provides additional zero-carbon electricity to the grid and will correspond to approximately 80% of our electricity demand in Sweden.
- > UK: We entered into a 15-year agreement in the UK with Future Biogas to establish the first unsubsidised industrial-scale supply of biomethane. This supply of renewable natural gas will support the transition away from fossil gas at our sites in Macclesfield, Cambridge, Luton and Liverpool. The new biomethane plant will add renewable energy capacity to existing UK infrastructure and supply more than 100 GWh of biomethane, equivalent to the heat needs of more than 8,000 homes. Using crops grown locally as part of diverse crop rotations, the plant will also contribute to the development of a circular economy, supporting UK farms with sustainable land management practices.
- > Next-generation propellant for respiratory inhalers: We also continued our collaboration with Honeywell International Inc to develop a next-generation propellant with near-zero Global Warming Potential (GWP) for our portfolio of respiratory inhalers. We anticipate the first medicine with this next-generation propellant to be launched from 2025, subject to regulatory approvals. Most patients with asthma and chronic obstructive pulmonary disease (COPD) need inhaled medicines and many make use of pressurised metered-dose inhalers (pMDIs) which contain small quantities of a type of GHG which acts as the propellant to facilitate delivery of the medicine into the lungs. These medicines are essential for millions of people living with respiratory diseases, so transitioning to a more climate-friendly propellant reduces the environmental impact of care while ensuring people can treat their disease.

### Governance

The Board Sustainability Committee monitors the execution of our sustainability strategy, oversees communication of our sustainability activities with stakeholders and provides input to the Board and other Committees on sustainability matters. The members of the

For more information, see [www.sustainable-markets.org/taskforces/health-systems-taskforce](http://www.sustainable-markets.org/taskforces/health-systems-taskforce).

For more information on the Sustainability Committee, Audit Committee and other Board Committees, see from page 77 of AstraZeneca's Annual Report and Form 20-F Information 2023.



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## *continued*

Committee are Nazneen Rahman (Chair of the Committee), Sheri McCoy, Andreas Rummelt and Marcus Wallenberg.

During 2023, the Committee held two formal meetings and considered climate-related topics at each meeting, including progress of Ambition Zero Carbon, which was also reported to the full Board at its meeting in July.

The Audit Committee is responsible for overseeing sustainability-related disclosures that are linked to the Financial Statements, which includes this extended TCFD Statement published separately on our website, and the TCFD Summary Statement in the Annual Report. These statements are also reviewed by the Sustainability Committee, to support the Audit Committee's review.

Our CEO is responsible to the Board for the development and performance of our business, including our Ambition Zero Carbon strategy and our response to climate-related risks and opportunities. Our EVP, Global Operations & IT, Chief Sustainability Officer leads execution of the overall sustainability strategy, including measuring progress against targets. All Senior Executive Team (SET) members have responsibility for working with their teams to ensure alignment of the Ambition Zero Carbon strategy, and our response to climate-related risks and opportunities, with our business priorities.

Several well-established groups support the delivery of our sustainability and climate strategies:

- > An Ambition Zero Carbon Governance Group with executive-level ownership, accountable for the delivery of our Ambition Zero Carbon strategy. In 2023, the Group included our CEO; CFO; EVP, Global Operations & IT, Chief Sustainability Officer. The Ambition Zero Carbon Governance Group met four times in 2023.
- > A TCFD steering group with cross-functional membership from Global Corporate Affairs, Investor Relations, Group Financial Reporting, Enterprise Risk Management, R&D, Operations and Global Sustainability, to identify and proactively manage the physical and transition risks and opportunities posed to AstraZeneca by climate change. The TCFD steering group

met five times in 2023, with a focus on (i) the execution of climate risk assessments at priority sites in AstraZeneca's supply chain, (ii) mapping of transition risks and opportunities, (iii) integrating the management of climate risks and opportunities within the current governance structure, and (iv) how to structure the TCFD Disclosure in the annual reporting process for a smooth transition to upcoming regulations on environmental, social and governance (ESG) reporting.

### Execution

Our climate strategy is executed across our Company's operations, commercial activities, and supply chain:

- > At a site level, the execution of roadmaps to deliver against our climate strategy and to manage the physical risks posed by climate change are led by the accountable site lead, executing control measures (technical or organisational) as an integral part of their existing risk management framework.
- > At a commercial level, each franchise lead is accountable for integrating transition risks in their strategies and financial forecasts for each medicine. By managing the risks posed by a low-carbon economy and healthcare system, each business can unlock potential opportunities to support the transition to a low-carbon, patient-centric healthcare system.
- > Our goal of becoming carbon negative across our entire value chain from 2030 recognises that total emissions from our value chain partners are significantly larger than our own direct operations. Our Procurement function is engaging our suppliers to reduce their direct emissions through to 2030 and identify carbon removal options that will lead to more carbon dioxide (CO<sub>2</sub>) being removed from the atmosphere than added to it.

### Remuneration

Since 2021, to incentivise delivery of our ESG priorities, delivery of our Ambition Zero Carbon Scope 1 and 2 GHG reduction target, 98% by 2026 from 2015 baseline, has been included in our executive incentive arrangements for the Performance Share Plan (PSP), with a weighting of 10%. This underlines the importance we place on reducing our Scope 1 and Scope 2 GHG emissions during the strategy period towards the 2026 target year.

### Identifying and managing climate risk and opportunity

To inform the wider enterprise risk management process of any specific risks and opportunities posed by climate change, and/or the transition to a low-carbon economy, we have integrated climate assessments into the overall enterprise risk management process.

### Scope and definitions

Scenario analyses help us to understand the potential impact of climate change on our business to inform our business strategy and financial planning. In line with the TCFD guidance, we used a low/medium/high case scenario based on Representative Concentration Pathways (RCPs) shared by the Intergovernmental Panel on Climate Change.

For more information, see the Directors' Remuneration Report from page 102 of AstraZeneca's Annual Report and Form 20-F Information 2023.

Our overall approach to risk management and a summary of our Principal Risks can be found from page 54 of AstraZeneca's Annual Report and Form 20-F Information 2023.

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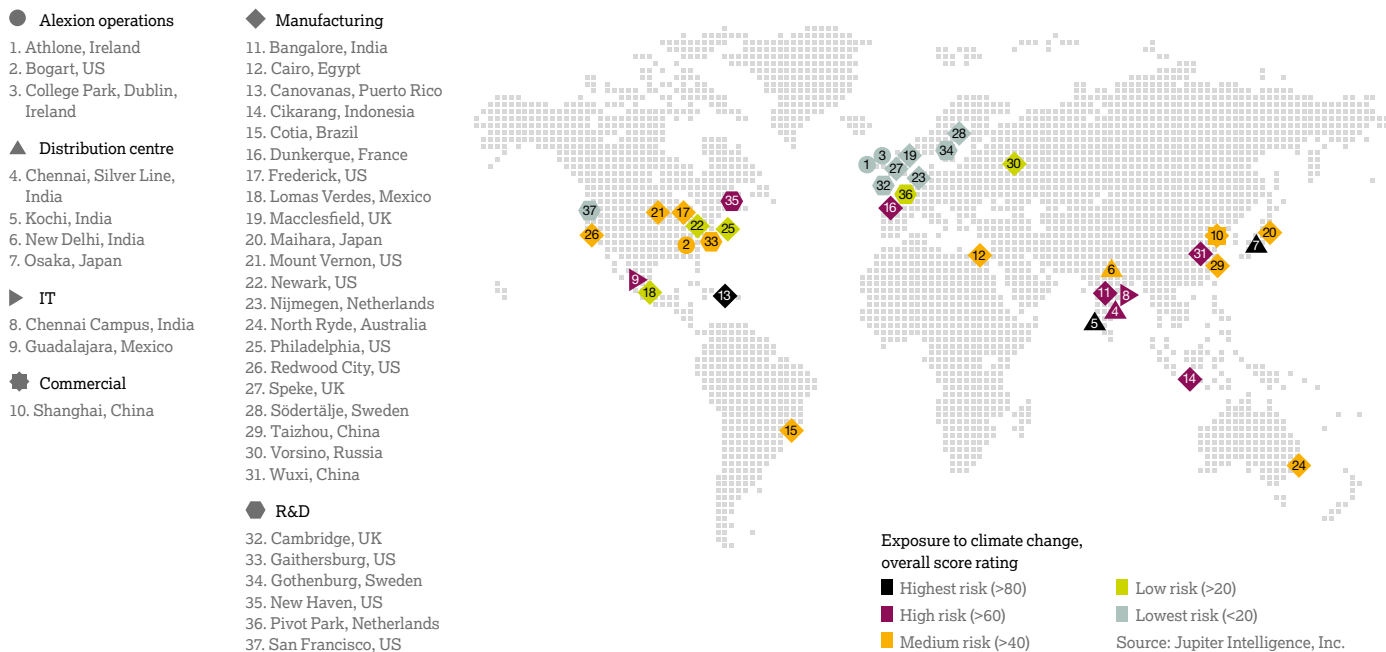
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Physical risks and temperature scenarios by 2100	Transition risks and opportunities scenarios used		
<b>Low emission scenario, +1.8°C (SSP1-RCP 2.6)</b>	<ul style="list-style-type: none"> <li>&gt; This scenario lays out a pathway and emissions trajectory that is generally aligned with the objectives of the Paris Agreement to limit global warming to well below 2°C, preferably to 1.5°C by 2100, compared to pre-industrial levels.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; 1.7°C (IEA WEO<sup>5</sup> Announced Pledges Scenario (APS) – equivalent to RCP 2.6).</li> <li>&gt; 1.5°C (IEA WEO Net-Zero Emissions by 2050 scenario (NZE) – equivalent to RCP 1.9).</li> </ul>	<ul style="list-style-type: none"> <li>&gt; The IEA WEO APS was used as the primary low-carbon future scenario within the Climate Financial Driver Analysis (CFDA). As a ‘well below 2°C’ pathway, the APS represents a gateway to the outcomes targeted by the Paris Agreement. The APS assumes that governments will meet, in full and on time, all the climate-related commitments they have announced, including longer-term net-zero emissions targets and pledges in Nationally Determined Contributions.</li> <li>&gt; The IEA WEO NZE is a normative IEA scenario that shows a narrow but achievable pathway for the global energy sector to achieve net-zero CO<sub>2</sub> emissions by 2050, with advanced economies reaching NZE in advance of others.</li> </ul>
<b>Current trajectory scenario, +2.7°C (SSP2-RCP 4.5)</b>	<ul style="list-style-type: none"> <li>&gt; This is an intermediate scenario with emissions peaking in 2040 and falling rapidly thereafter until 2080. Deemed to be the ‘most likely’ scenario.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; 2.5°C (IEA WEO Stated Policies Scenario – (STEPS) – equivalent to RCP 4.5).</li> </ul>	<ul style="list-style-type: none"> <li>&gt; The IEA WEO STEPS provides a more conservative benchmark for the future because it does not take for granted that governments will reach all announced goals.</li> </ul>
<b>High-emissions scenario, +4.4°C (SSP5-RCP 8.5)</b>	<ul style="list-style-type: none"> <li>&gt; This is a worst-case scenario consistent with no policy changes to reduce emissions, where CO<sub>2</sub> concentrations in the atmosphere are roughly doubled by 2050 and continue on that path until 2100.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; 4°C (IEA WEO business as usual – equivalent to RCP 8.5).</li> </ul>	<ul style="list-style-type: none"> <li>&gt; This ‘high emissions business as usual’ scenario was not modelled in detail but is expected to give rise to more significant physical impacts and delayed but more uncertain/disruptive transition, potentially leading to higher overall costs and representing failure to implement stated policies.</li> </ul>
<b>Time horizons</b>	<ul style="list-style-type: none"> <li>&gt; Present day, 2030, 2050, 2100.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Present day, 2025, 2030, 2035, 2040, 2050.</li> </ul>	

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Graph A – AstraZeneca locations where a detailed assessment of climate-related risks has been conducted



### Assessment of physical risks

We have conducted screening studies of three future climate scenarios to explore our physical climate-related risks (floods, water scarcity, extreme heat, cyclones and wildfires). These scenarios were applied to material AstraZeneca sites with prediction timeframes from 2020 to 2030, 2050 and 2100. The evaluated sites included all business-critical manufacturing sites, R&D hubs, IT centres, Alexion sites, and other strategic hubs. The outcome of these screening studies was combined with a revenue-based assessment for each site to identify mid- to long-term risks. We have also used climate scenario data from Jupiter Intelligence for screening of risks from climate hazards to all AstraZeneca sites in future scenarios (RCP 2.6, 4.5 and 8.5).

We also use the World Wide Fund (WWF) for Nature Water Risk Filter to assess site water risks such as scarcity, flooding and diminishing quality and ascertain how these could be amplified in a changing climate, using the outputs to introduce a water stewardship pilot to build on our experience, focusing on efficient water use within the boundaries of our sites, along with water quality and collective action opportunities in the local basin. We have prioritised six sites located in water-scarce areas across five countries, as these are facing increasing risks in relation to water availability and quality as climate change impacts the global water cycle.

Between 2021 and 2023, we conducted a deep dive at 37 sites with high business criticality and potential exposure to climate change impacts in a worst-case scenario (RCP 8.5) by 2030 and 2050. Locations are shown in Graph A.

The assessments cover:

- > Inventory of hazards
- > Risk analysis
- > Risk evaluation
- > Identification of mitigation measures.

Global subject matter experts coordinated these assessments, together with local representatives of our Manufacturing, Facilities Management and Safety, Health and Environment (SHE) functions and our Risk Management Network. Where appropriate, the risk mitigation measures and interventions were escalated to site management and captured on the local risk register. Measures and actions to address these risks are included in the site master plans and business continuity plans as they are developed and captured under the mid- and long-term financial planning for each site and function.

Vulnerability to climate change as a formal decision criterion for the establishment of future internal or external manufacturing capacity was first applied to projects reviewed in 2022, and in 2023 we included hazards associated with climate change forecasts into the design phase of our new site in Qingdao, China.

The screening assessment of physical climate hazards we conducted in 2022 for over 750 strategic suppliers has enabled us to understand the Group's exposure to climate-related hazards in the value chain at a product level. This means we can use science-based climate data in dialogue with critical suppliers to assess their vulnerability to climate change and implications to our supply chain, as well as integrate climate risks in business continuity plans by medicine to increase climate resilience where needed.

For further information relating to the screening assessments for material sites, see our website [www.astrazeneca.com](http://www.astrazeneca.com).

More details on using scenarios to assess future climate-water risks are presented in a case study produced in partnership with WWF. See our website [www.astrazeneca.com/sustainability/resources.html](http://www.astrazeneca.com/sustainability/resources.html).

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In 2023, we prioritised the review of third-party owned distribution centres (more than 160 unique locations) with a focus on those located in high-risk areas. These locations have been added to the global risk register, with a risk mitigation plan in place where needed.

### Coverage and costs of insurance

The frequency and severity of natural disasters because of climate change are increasing. Third-party insurers continue to restrict policy coverage for natural disasters and adjust pricing structure to compensate against the perceived increased risk, resulting in a widening of the gap between insured/ uninsured loss.

Locations exposed to natural catastrophes will attract higher risk premiums, based on annual rating of our portfolio at the enterprise level.

Our external property premiums have increased 100% over the past five years, due to various factors, which include climate-related risks.

### Nature-based solutions

We will invest \$400 million in nature-based solutions through our global AZ Forest initiative, which aims to mitigate the effects of climate change while also delivering multiple ecological, health, economic and community co-benefits. In addition to conserving and restoring biodiversity, the programme contributes to building more sustainable livelihoods, for example through agroforestry interventions, to increase food security, provide renewable timber resources and generate new sources of revenue for local

communities. By protecting and restoring soil and water resources, AZ Forest increases resilience to threats exacerbated by climate change, such as heatwaves, droughts, floods and landslides. By moderating pollution levels, reforestation is also expected to tackle drivers of negative impacts on human health, including air and water quality which are expected to be intensified by climate change.

### Priorities for physical risks in 2024 include:

- > Mitigate climate-related risks identified at site level as part of overall risk management processes through site master plans and business continuity planning with an increasing focus on sites which have been identified as most at risk from water scarcity.
- > Invest \$5 million per year to fund nature restoration and water stewardship projects in the communities where we operate to increase resilience.
- > Conduct climate risk assessment at office-based locations with a focus on workforce safety and health.
- > Continue to review distribution centres (including outsourced) to understand vulnerability to extreme weather events with a risk mitigation plan where needed, including an appropriate inventory strategy for high-risk locations.
- > Further develop processes to integrate climate risk assessment into supply chain design and product-level business continuity management.
- > Suppliers with a critical role in patient supply and exposure to significant future climate hazard will be prioritised for further assessment.

### Assessment of transition risks and opportunities

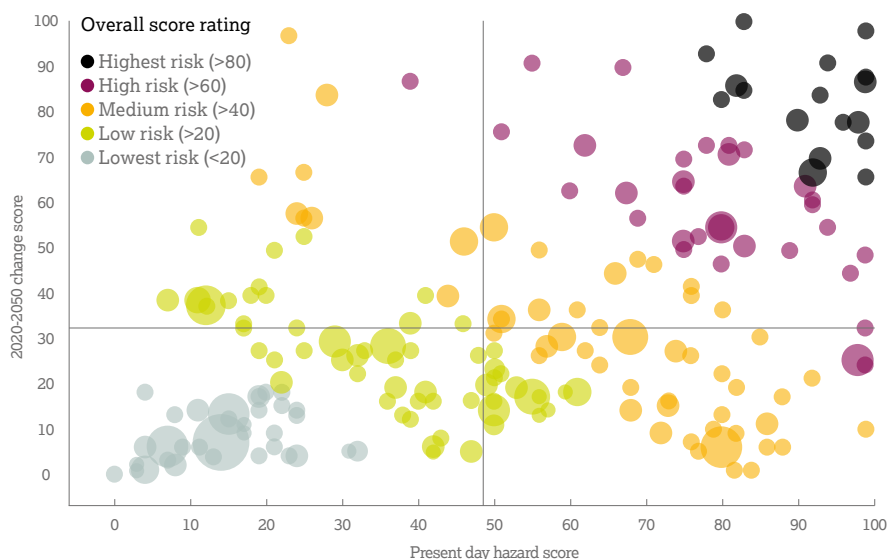
To meet our commitments to be net zero and restrict global warming to 1.5°C in line with the Paris Agreement, we need to adopt a product, Group and healthcare system perspective to proactively manage the risks and opportunities posed by the transition to a low-carbon economy and the resilience of healthcare systems.

To achieve our science-based GHG emissions reduction target of halving our entire value chain footprint (Scope 3) by 2030, and achieve a 90% reduction by 2045, from a 2019 baseline, we will need extensive decarbonisation across our products and supply chain. However, we also need to recognise that, given the limited period of exclusivity we have for innovative medicines, the GHG footprint of our current portfolio of products will not fully reflect our 2030 footprint. Many innovative treatments that will make up our 2030 portfolio are still in development, and we can prioritise sustainability and efficiency in design, both in terms of process and product design, as well as the supplier network for manufacture and delivery. That means we are responsible for our choices in raw material sourcing, manufacture, and formulation of APIs, along with device and packaging selection.

We believe our patients, and society at large, will require medicines that have the smallest possible environmental impact, without sacrificing medical efficacy or safety. As technologies and healthcare systems evolve, so too should circular solutions to:

- > design out waste and pollution
- > keep products and materials in use
- > regenerate natural systems.

Graph B – Exposure to climate change in the supply chains of 10 medicines (Assessment of climate risk)



Graph B shows exposure to hazards related to climate change at material supplier locations for 10 selected AstraZeneca medicines. The X-axis shows current hazard exposure on a 1-100 scale and the Y-axis shows the climate change factors over a 2020-2050 time period on the same 1-100 scale. The size of a circle is relative to how many of the 10 selected medicines are supplied by each of the material supplier locations. Locations rated as highest risk (upper-right quadrant) are prioritised for further discussions and potential mitigations.

Source of climate data: Jupiter Intelligence, Inc.

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To deliver medicines that improve patient outcomes and minimise the burden on the planet, we evaluate and aim to address the environmental impact of materials and processes across the entire product value chain. To help with prioritisation, we use LCAs to understand the environmental impact of our products. The GHG footprint for most medicines lies in our upstream supply chain; the exception is for the respiratory pMDI portfolio where the GHG footprint lies with the patient use and represents 20% of AstraZeneca's Scope 3 carbon footprint. The current estimate for LCA coverage is over 70% of Group revenues and clearly demonstrates the relatively high carbon intensity and potential transition risks of our inhaled respiratory portfolio, compared to other medicines.

As governments begin transitioning to deliver low carbon, climate-resilient health systems, there will be new risks for us to manage, as well as opportunities to deliver better patient, environmental and societal outcomes.

AstraZeneca is included in the supply chain emissions of healthcare providers as part of their purchased goods and services footprint. Some healthcare providers have already set out their net-zero ambitions. For example, the National Health Service (NHS) in England has established targets to procure medicines only from suppliers with climate targets aligned with, or more ambitious than their own, and they have goals to reduce the footprint of respiratory products by 50% over the next seven years. This is one way in which the rapid decarbonisation of our portfolio is being driven by our customers, in a similar way to how AstraZeneca is engaging its own suppliers. For example, the transition to next-generation propellants with near-zero GWP within our Ambition Zero Carbon strategy is not only reducing our GHG footprint, but also mitigating some of the transition risks we face in the market and will ensure continuity of supply for patients.

To better understand the financial consequences of the transition to a low-carbon economy for our business, risks and opportunities were assessed at an enterprise level and product-specific level for the medicines where LCA data is available, with examples from all our disease areas.

In 2023, we continued to focus on the next-generation propellant transition for pMDI products in our respiratory portfolio due to their importance as essential, life-saving medicines for millions of patients globally with respiratory diseases, their strategic importance to the business, and as an important element of our Ambition Zero Carbon strategy due to their relatively high carbon intensity. In initial Climate Financial Driver Analyses (CFDAs), risks and opportunities were identified during the

transition phase where the current propellant will be substituted with a near-zero GWP propellant. We aim to launch our first next-generation pMDI from 2025 and complete transition of the portfolio by 2030, subject to regulatory approvals. The transition to next-generation propellants is reflected in our financial forecasts. We continue to work with governments and healthcare stakeholders to mitigate the unintended consequences, for patients and our inhaled product portfolio, of proposed environmental legislation, for example, the EU Fluorinated-gas (F-gas) Regulation and per- and polyfluoroalkyl substances (PFAS) restriction proposal.

Although the conclusion of the F-gas Regulation intends to allow the necessary safeguards for us to safely complete the transition of our pMDI portfolio to next-generation propellants by 2030, the PFAS restriction proposal by five European countries to the European Chemicals Agency (ECHA) risks AstraZeneca's transition if HFO-1234ze(E) is not excluded from the universal PFAS ban.

In 2023, we finalised CFDAs for transition risks and opportunities identified in the screening at enterprise level: transportation, renewable energy and raw materials represented by F-gases used in our inhaled respiratory portfolio. Results show that our Ambition Zero Carbon strategy will mitigate potential material transition risks over the short, medium and long term. Investments in GHG reduction and removal projects will be balanced out against maintaining revenue and avoiding costs of future regulations, carbon taxation and customer requirements in a low-carbon economy.

### **Priorities for transition risks and opportunities in 2024 include:**

- > Determine the transition risks for lower GHG emission intensity products in our portfolio based on established methodology and identify potential opportunities to reduce the environmental footprint of existing healthcare pathways.
- > Integrate outcome of CFDAs in annual product planning processes, including understanding market demands to contribute to low-carbon healthcare, and opportunities to meet these requirements.

### **Climate change and its impact on patients and the wider healthcare sector**

The climate crisis is a public health crisis<sup>6</sup>: rising temperatures are resulting in an increase in hospital admissions and heat-related deaths; extreme weather events (such as flooding and droughts) are disrupting food systems, displacing people and undermining access to healthcare; and changing patterns of water-borne and vector-borne diseases are threatening decades of progress in infectious

disease control.<sup>7</sup> Climate change is also exacerbating the incidence of many non-communicable diseases, including cardiovascular and respiratory illnesses, through increased air pollution, extreme heat and other factors.<sup>8</sup>

For example, climate change is expected to increase the frequency, duration, severity, and season length of wildfires, all increasing exposure to wildfire smoke and evacuations. This will put increasing strain on those who live and work in the impacted areas; those working in public health, healthcare, and response services; and on other populations who are impacted by smoke and/or evacuations. Canada serves as an example where health-related hazards driven by climate change have been experienced during an unprecedented wildfire season in 2023. By June, there had been 2,619 fires reported nationally, and an estimated 5.3 million hectares burned. Smoke migrating from the fires impacted air quality across North America, with historical records for poor air quality being broken in cities across Canada and the US. Wildfires are now considered a public health risk in Canada, due to their impacts on physical health, mental health, and wellbeing. Short-term exposure to wildfire smoke or wildfire PM2.5 has been strongly associated with all-cause mortality, acute bronchitis, exacerbation of chronic respiratory conditions such as asthma and COPD, as well as increases in respiratory emergency room visits and hospitalisations.<sup>9</sup>

Climate change affects us all, but populations living in low- and middle-income countries are the most severely impacted.<sup>10</sup> The health risks associated with climate change also disproportionately affect the most vulnerable and disadvantaged in our societies, such as children, displaced populations, and people with underlying health conditions. Climate change is also adding further pressure to already overburdened health systems, increasing the risk of patient needs not being met.



# Task Force on Climate-related Financial Disclosures Statement

## continued

A summary of identified risks and opportunities related to climate change and transition into a low-carbon economy

### Key

- Low risk
- Medium risk
- High risk
- Opportunity

### Time horizon for impact

- Short-term: 1-3 years
- Mid-term: 3-7 years
- Long-term: 7-25 years

Risk or opportunity	Time horizon Short/Mid/Long	Potential impact	How it is managed
<b>Physical risks</b>			
Increased frequency of extreme weather and climate-related natural disasters.	● ● ●	<ul style="list-style-type: none"> <li>&gt; Detailed site-level climate risk assessments have now been conducted at 37 sites to verify the screening results from 2020. Outcomes indicate potential for:               <ul style="list-style-type: none"> <li>– Increased exposure to extreme heat events and an increased need for cooling to maintain Good Manufacturing Practice compliance.</li> <li>– Heavy rainfall causing local flooding and/or inducing landslides.</li> <li>– High wind events that can damage site structures.</li> <li>– Inability to secure a consistent high-quality water supply, which may lead to disruption of manufacturing and supply chain activity.</li> </ul> </li> <li>&gt; Potential risks relate primarily to disruption or delays in a single manufacturing site (supply chain included), product distribution and/or product spoilage due to failure of cold chain logistics, along with associated increased liability insurance premiums and reputational damage. However, investment in at-risk sites, the design of our supply chains and levels of inventory held mean that we do not currently foresee a material business impact arising from short-term events.</li> <li>&gt; The results of the detailed site assessments of physical climate risks have been validated by computing the average annual loss of assets for a range of production assets, warehouses, laboratories and other infrastructure assets. Simulations of high-speed wind or flooding events have been run for a range of return periods (10 years to 500 years) and carbon emission scenarios (SSP1.2-2.6, SSP2-4.5 and SSP5-8.5). The simulations confirmed that AstraZeneca does not face any material physical climate risks.</li> <li>&gt; We will continue to expand our site assessments and business impact assessments in 2024.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Identified risks have been embedded within planning of nature-based or technical mitigations, which are integrated into AstraZeneca site master plans and local business continuity plans. Any investments required are integrated into the normal mid- and long-term financial planning process. Mitigation examples include increased cooling capacity to cover periods of extreme heat, drainage systems or ponds to handle increased volumes of precipitation or strengthening of building resilience against increased wind speed.</li> <li>&gt; Business resilience has been increased to mitigate our exposure to extreme weather events such as Hurricanes Maria and Ian at Canovanas (Puerto Rico, 2017 and 2022), an extended period of heat in Södertälje (Sweden, 2018), water scarcity in Chennai (India, 2019) and heavy rainfall causing flooding in Beijing (China, 2023).</li> <li>&gt; Extreme precipitation (418 millimetres in 24 hours) at a third-party owned distribution centre in Beijing, China in 2023 led to a 3.5 metre flood, which caused severe damage to the local community, and prevented operation of the affected warehouse for more than six months. However, distribution was quickly assigned to another distribution centre, with no interruptions of supply to the customer.</li> <li>&gt; Three case studies are available which exemplify typical physical risks, potential consequences and mitigating actions taken: Södertälje in Sweden, Maihara in Japan and Canovanas in Puerto Rico.</li> <li>&gt; Supported by our collaboration with the World Wide Fund for Nature (WWF) and our membership of the Alliance for Water Stewardship, we have prioritised six sites located in water-scarce areas across five countries. These sites face increasing water availability and quality risks as climate change impacts the global water cycle. By 2025, we aim to have long-term contextual water targets in place at these sites. This will help us mitigate site-specific risks, support shared local water challenges, and help us prepare for broader adoption of this approach across our site network and key suppliers.</li> <li>&gt; We support the Open Call for Water Action towards collective positive water impact to benefit at least 100 water-stressed basins by 2030. We are committed to building water resilience across our global operations and supply chain and working collaboratively across sectors to accelerate positive water impact.</li> <li>&gt; Since 2022, physical risks have continued to be mapped in the broader supply chain, based on location, and then matched with climate scenarios of RCP 2.6, 4.5 and 8.5. Data is used to map vulnerabilities in the unique supply chain for our medicines.</li> <li>&gt; Climate risk assessments have been included in the site evaluation criteria for investment in new operations and applied to a first case in 2022. In 2023, the climate scenarios were used in the design phase of a new site in Qingdao, China.</li> </ul>

For more information, see our website, [www.astrazeneca.com/sustainability/resources.html](http://www.astrazeneca.com/sustainability/resources.html).

# Task Force on Climate-related Financial Disclosures Statement

## *continued*

Risk or opportunity	Time horizon Short/Mid/Long	Potential impact	How it is managed
<b>Transition risks and opportunities</b>			
<p>Stakeholders are transitioning to 'low-carbon, climate resilient healthcare systems', increasing demand for sustainable low GWP products and services from healthcare providers in some countries, which may result in the potential for lower-carbon substitution of medicinal products with a high GWP (e.g. anaesthetics and respiratory products).</p> <p>Business opportunities will exist with increased future demand for low GWP alternatives and where earlier diagnosis, and clinical guideline adhered intervention, can reduce the carbon footprint of healthcare.</p>	<p>● ● ●</p>	<ul style="list-style-type: none"> <li>&gt; Some healthcare providers and professionals are actively looking to substitute medicinal products based on their GHG footprint to reduce their Scope 3 footprint, as part of their own climate targets.</li> <li>&gt; One example is NHS England, and its net-zero target by 2045, with an ambition to reach an 80% reduction by 2036 to 2039.</li> <li>&gt; Over 70 governments have committed to deliver low-carbon, climate-resilient health systems through the WHO-led Alliance for Transformative Action on Climate and Health (ATACH).</li> </ul>	<ul style="list-style-type: none"> <li>&gt; AstraZeneca has LCAs in place for medicines (respiratory and wider) that include the GHG footprint to help assess and manage risks and target interventions to reduce the environmental footprint of our medicines.</li> <li>&gt; The internal Product Sustainability Index (PSI) is now well established to proactively assess and manage the environmental footprint of our medicines. The PSI captures product GHG and water intensity metrics per patient per annum, as well as the percentage of renewable power and resource efficiency used to make that product.</li> <li>&gt; As part of our flagship Ambition Zero Carbon strategy, we aim to transition to near-zero GWP propellant across our asthma and COPD products from 2025 to 2030, subject to regulatory approvals. Alongside the positive impact of disease prevention, early diagnosis and clinical intervention on the carbon footprint of specific patient care pathways, this transition will provide business opportunities to improve the standard of care, clinical outcomes and health system efficiency, with a lower environmental footprint.</li> <li>&gt; Respiratory patients whose treatment is optimised are more likely to have a lower climate impact overall, through reduced reliance on reliever/rescue medication use and fewer emergency healthcare interventions or hospitalisations.</li> <li>&gt; AstraZeneca's CEO also chairs the Sustainable Markets Initiative Health Systems Task Force, which is developing a framework to measure the environmental impact of medicines and delivery of patient care.</li> </ul>
<p>Review of the US, EU, UK and other national F-gas regulations, and the EU PFAS restriction proposal, and their impact on respiratory medicines used to treat asthma and COPD.</p>	<p>● ● ●</p>	<ul style="list-style-type: none"> <li>&gt; The EU F-gas Regulation review carried the potential risk that some F-gases used in pMDI-based respiratory medicines could be subject to emission restrictions from which they are currently exempt. In October 2023, the EU reached agreement in the negotiations on the F-gas Regulation, with a positive result for the environment, pMDIs and respiratory patients, with entry into force anticipated in 2024.</li> <li>&gt; The PFAS restriction proposal by five European countries to the ECHA risks AstraZeneca's transition to near-zero GWP propellants across our respiratory portfolio, if the next-generation propellant HFO-1234ze(E) is not excluded from the proposed universal PFAS ban.</li> <li>&gt; Inhaler device selection is a critical consideration as patient need or preference for a specific device type will influence adherence to treatment, which in turn impacts clinical and environmental outcomes. Failure to maintain a patient-centric approach in the short- to mid-term could result in unnecessary adverse respiratory events and hospitalisations that could come with an increased GHG footprint.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; We believe the conclusion of the F-gas Regulation allows the necessary safeguards for us to safely complete the transition of our pMDI portfolio to next-generation propellants by 2030.</li> <li>&gt; AstraZeneca has submitted responses to the ECHA public consultation on the PFAS restriction proposal and recommended that HFO-1234ze(E) should be excluded from the proposed universal PFAS ban, to ensure patient access to essential life-saving pMDI medicines is maintained.</li> <li>&gt; In parallel, a revised F-gas Regulation is anticipated in the UK based on a proposal to be made by the Department for Environment, Food and Rural Affairs (DEFRA). We will be calling for an outcome consistent with the EU F-gas Regulation conclusion. We have also requested that any steps by DEFRA to regulate PFAS use mitigate unintended consequences to essential patient care and exclude the use of near-zero GWP propellant HFO 1234ze(E) in pMDIs from any upcoming PFAS restriction plans.</li> </ul>

# Task Force on Climate-related Financial Disclosures Statement

*continued*

Risk or opportunity	Time horizon Short/Mid/Long	Potential impact	How it is managed
Carbon pricing and future environmental taxation.	● ● ●	<ul style="list-style-type: none"> <li>&gt; There is uncertainty over the future environmental policy and fiscal landscape in many countries where we operate. We anticipate increased regulation and other developments related to carbon pricing, border adjustment taxes, and broader environmental taxation over the medium to long term.</li> <li>&gt; Carbon pricing based on the IEA NZE by 2050 scenario forecast which follows the 1.5°C warming pathway (\$130/tCO<sub>2</sub> by 2030).</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Our Ambition Zero Carbon strategy will help to mitigate some exposure to future carbon pricing and environmental taxation for our operations and our wider value chain. Managed correctly, this presents a commercial opportunity where peers have yet to establish a path to deep decarbonisation and net zero.</li> <li>&gt; We are being positive advocates for SBTs to address climate change across our industry and supply chain via trade associations and networks. We continue to monitor regulatory and market developments in carbon pricing to inform our strategy, such as the latest updates to the EU Emissions Trading Scheme to include emissions from air, road and sea transportation, implemented step by step for full coverage by 2027.<sup>11,12</sup></li> <li>&gt; Scenario analyses show there is a financial benefit to AstraZeneca of pursuing modal shift in line with Ambition Zero Carbon targets, to transition from air freight to marine freight.</li> </ul>
Supply-demand of renewable energy (power and heat).	● ● ●	<ul style="list-style-type: none"> <li>&gt; Access to clean heat alternatives to fossil gas, such as biomethane or electrification of heat, generally requires higher investment.</li> <li>&gt; Access to good-quality renewable electricity in all AstraZeneca and supplier locations, including changes that can lead to the loss of access due to geopolitics.</li> <li>&gt; Participation in renewable energy programmes and adoption of energy efficiency measures to reduce operating costs and exposure to future energy and/or emissions price increases.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Absolute natural resource reductions, including those that reduce our GHG emissions, are a primary metric alongside return on investment. Since 2015, we have invested approximately \$175 million, including \$25.5 million in 2023, and delivered a 17.5% reduction in energy use and 67.6% reduction in our Scope 1 and Scope 2 emissions. This reduces our exposure to incremental costs associated with some renewable alternatives.</li> <li>&gt; In 2023, we carried out further detailed analysis of the risks and opportunities for transferring to renewable energy in AstraZeneca and the broader supply chain.</li> <li>&gt; Renewable energy initiatives described on <a href="#">[page 2]</a> further support our mitigation efforts.</li> </ul>
Change in raw material or sourcing cost.	● ● ●	<ul style="list-style-type: none"> <li>&gt; Costs associated with new low-carbon technology as the business needs to comply with expected new and emerging legislation for lower-emissions technology (and meet stakeholder expectations for proactively decreasing emissions).</li> <li>&gt; Similar increased operational costs in the supply chain may also affect pricing and costs of raw materials including packaging.</li> <li>&gt; There could be a significant risk associated with increased costs for using high-carbon transport modes.</li> <li>&gt; More efficient buildings will reduce costs; improved facilities management will lead to lower costs for repair and replacements.</li> <li>&gt; Use of lower-emission sources of energy will reduce exposure to fossil fuel and carbon price changes.</li> <li>&gt; Use of more efficient production and distribution processes will reduce operational and logistical costs from using more efficient processes and reduce exposure to constrained suppliers.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Carbon costs are properly factored into engineering feasibility, options appraisal and capital expenditure decision making. Engagement with contract manufacturing organisations and other supply chain partners covers issues such as their transition to the low-carbon economy.</li> <li>&gt; Ensuring the early opportunities for gaining regulatory approvals for new and emerging transport modes and technologies so that logistics continuity is maintained.</li> <li>&gt; Ensuring the costing for drugs considers potential increases associated with transition risks (such as cost of fuels and changes to approval mechanisms).</li> <li>&gt; Many of the risks associated with incremental cost exposure are not unique to AstraZeneca. They will also be faced by our peers and the wider healthcare sector.</li> <li>&gt; Engagement ensuring that sustainable performance is positively recognised within procurement is being explored.</li> <li>&gt; In 2023, we carried out further detailed analysis of the risks and opportunities of transferring to renewable energy in the broader supply chain and the consequences of moving into low-carbon alternatives in transportation of products and materials.</li> </ul>

# Task Force on Climate-related Financial Disclosures Statement

## *continued*


### Monitoring our progress

We report on our GHG emissions and progress towards mid- and long-term targets in line with the World Resources Institute GHG Protocol guidance for defining and calculating our GHG footprint. Since 2015, we have invested approximately \$175 million and delivered a 17.5% reduction in energy use and 67.6% reduction in our Scope 1 and 2 GHG emissions. Since the 2019 baseline for our Scope 3 GHG targets, we have increased primary data coverage to 52%, increased Scope 3 Categories 1 and 2 spend with suppliers with verified SBTs to 29%, and total Scope 3 GHG emissions have increased by 18.6%.

The performance report reflects how well we have been able to decarbonise the business, and, by that, reduce exposure to transition risks and unlock future opportunities for the Group and the wider healthcare sector.

During 2023, we were recognised for our efforts in environmental sustainability across our strategic priorities. This included the following:

- > AstraZeneca received a rating of AA (on a scale of AAA-CCC) in the MSCI ESG Ratings assessment.
- > Included in Dow Jones Sustainability Index Top 20% of 2,500 of the world's largest companies and in Europe Index.
- > Financial Times 2023 European Climate Leader for reduction of GHG emissions.
- > Ranked first in the 2023 STAT Report on how major pharmaceutical companies are combatting climate change.

 For more information and full details of our GHG footprint, see our Sustainability Report 2023, [www.astrazeneca.com/sustainability/resources.html](http://www.astrazeneca.com/sustainability/resources.html).

<sup>1</sup> World Health Organization Factsheets on Environmental Health and Air Pollution.

<sup>2</sup> World Health Organization, 'World Health Statistics 2023', 19 May 2023.

<sup>3</sup> The 2023 report of The Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms.

<sup>4</sup> The 2023 report of The Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms.

<sup>5</sup> International Energy Agency World Energy Outlook.

<sup>6</sup> World Health Organization, 'Climate change and health', 30 October 2021.

<sup>7</sup> The 2023 report of The Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms.

<sup>8</sup> Sustainable Markets Initiative Health Systems Taskforce, in collaboration with BCG, November 2022.

<sup>9</sup> Public health risk profile: Wildfires in Canada, 2023, Public Health Agency of Canada.

<sup>10</sup> Health Inequalities and Climate Change: Action for Global Health Position Paper, Action for Global Health, 2021.

<sup>11</sup> Introduction of EU Emission Trading System for Buildings and Road Transport, 10 May 2023: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023L0959>.

<sup>12</sup> Introduction of EU Emission Trading System for Maritime Transport Activities, 10 May 2023: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32023R0957>.