

What science can do

AstraZeneca Task Force on Climate-related Financial Disclosures Statement 2022



Task Force on Climate-related Financial Disclosures Statement ^{BV}

References to Notes and page numbers, and capitalised terms not defined in this supplement, can be found in AstraZeneca's Annual Report and Form 20-F Information 2022 at www.astrazeneca.com/annualreport2022.

Our commitment to climate change

The climate and biodiversity crises are already impacting human health, our environment, and society at large. Climate change is increasing levels of ill-health, with the incidence of many chronic conditions rising across the world. The World Health Organization (WHO) estimates that nearly 14 million people die each year from environmental health risks¹, including 8 million from air pollution alone. Heat-related deaths are increasing, causing a rise in hospital admissions and cardiovascular, kidney, and respiratory illnesses.² Climate change also threatens access to water resources, including sanitation, which is essential for disease prevention. The complex network of relationships that connects human and planetary health requires a systems-level approach to be taken to tackle climate-health challenges.

The healthcare sector is responsible for approximately 5% of global greenhouse gas (GHG) emissions³, so everyone involved in the delivery of healthcare has a role to play in reducing GHG emissions. The commitments and actions AstraZeneca has taken through our flagship \$1 billion Ambition Zero Carbon strategy ensures that we are playing our part in tackling the climate crisis, as well as identifying the opportunities that transitioning to a low-carbon economy could mean for our business. In addition to our Ambition Zero Carbon decarbonisation strategy, we are also investing in nature and biodiversity through the AZ Forest programme, recognising the positive impact of reforestation.

We support the Task Force on Climate-related Financial Disclosures (TCFD) framework and have made disclosures consistent with the four TCFD recommendations and the 11 recommended disclosures, and in compliance with the requirements of Listing Rule 9.8.6R(8) of the UK Financial Conduct Authority (FCA). This report is in addition to the TCFD summary on page 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 2022.

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

In many cases, mitigation measures are already in place to address the risks and opportunities presented by climate change, including those posed by the transition to a low-carbon economy and the provision of net-zero healthcare. Based on current assessments, therefore, 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. This is not currently considered to be a Principal Risk for the Group.

For more information, see the Risk supplement available on our website, www.astrazeneca.com/annualreport2022.

For more information see the Sustainability Data Summary see our website, www.astrazeneca.com/sustainability.

For further information relating to our TCFD disclosures, see our website, www.astrazeneca.com/sustainability/resources.

Our CDP response provides further disclosures (2021 performance) on our approach to climate change and is available at www.cdp.net/en.

Climate change and our strategy for physical risks

Understanding the potential impact of future climate scenarios, 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 continued supply of medicines to patients. It is critical to understand the physical hazards from climate change (e.g. extreme heat, floods, 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 extreme weather events across our operations and value chain.

Over 2020/21 we screened climate impacts across our operations and strategic suppliers (defined by cost of interruption and strategic importance) to assess what a worst-case scenario – Representative Concentration Pathway (RCP) 8.5 – would look like in 2030, 2050 and 2100. In addition, two more positive scenarios (RCP 2.6 and 4.5) were modelled. By combining the results of the climate assessments with business criticality, we prioritised 12 potentially 'at risk' sites for further assessment in 2021 and an additional 17 sites in 2022.

For further information, see the scenario table on page 3.

In 2023, we will expand the physical climate assessments to include a deep-dive analysis of all strategic sites, irrespective of risk.

We will also 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 are 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.

To respond to the identified climate risks and opportunities, we are taking action across the Group, and are committed to:

- > Achieving net-zero GHG emissions by maximising our energy efficiency, shifting to renewable energy sources, and investing in nature-based removals to compensate for any residual GHG footprint.
- > Building resilience by managing the physical and transitional risks and opportunities from climate change in the value chain, through adaptation and business continuity planning.

Through our Ambition Zero Carbon strategy we are on track to reduce GHG emissions from our global operations and vehicle fleet by 98% by 2026, and halve our entire value chain footprint by 2030, with a 90% reduction by 2045. In 2021, we were one of the first seven companies worldwide to have our net-zero, science-based Scopes 1 to 3 targets verified under the Science Based Targets initiative Net-Zero Corporate Standard. We were also an early supporter of the UN-backed Race to Zero.

Near-term targets

- > Achieve 98% 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 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 near-zero climate impact propellants by 2025
- > Align 95% of supplier spend to companies with approved science-based targets by the end of 2025
- > Plant and steward over 50 million trees by the end of 2025 as a nature-based solution to enhance climate, ecological and community resilience through our AZ Forest global initiative.

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Long-term targets

- > Achieve 50% reduction in total Scope 3 emissions by 2030 and 90% reduction by 2045, from a 2019 baseline
- > Become carbon negative for all residual emissions from 2030 and science-based net-zero by 2045
- > Transition to next-generation respiratory inhalers with near-zero climate impact propellants across our portfolio by 2030.

Additional targets

Recognising the contribution of the healthcare system to global GHG emissions, and the importance of sustainable health systems, AstraZeneca is leading a public-private partnership to drive system-wide change. At the invitation of HM King Charles III in his former role as The Prince of Wales, our CEO Pascal Soriot convened the Sustainable Markets Initiative (SMI) Health Systems Task Force, launched at the 26th United Nations Climate Change Conference (COP26) in 2021. Comprised of global CEOs and leaders from the healthcare sector, it is committed to accelerating the delivery of net-zero health systems, to improve individual, societal and planetary health. Ahead of COP27, Task Force members launched sector-first commitments, actions and recommendations, focusing on three priority areas: Supply Chain and Patient Care, Pathways Decarbonisation, and the use of Digital Innovation in Clinical Research.

For more information, see www.sustainable-markets.org/taskforces/health-systems-taskforce.

Cross-sector collaboration and supplier engagement are essential to decarbonise healthcare supply chains. To reduce our Scope 3 emissions, we are engaging with our suppliers across our entire value chain. At COP27, we joined global pharmaceutical companies to accelerate the decarbonisation of active pharmaceutical ingredient (API) supply chains, addressing this shared challenge through the newly-launched Activate programme.

COP27 also marked a milestone for the Energize programme, launched in 2021 in collaboration with industry peers and Schneider Electric to help healthcare industry suppliers to access renewable electricity at scale. The programme announced its first buyers' cohort for 2TW renewable electricity. By enabling suppliers to reduce their Scope 2 emissions, the programme in turn enables us to reduce our Scope 3 emissions.

Governance

The Sustainability Committee, established by our Board, 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 Committee are Nazneen Rahman (Chair of the Committee), Sheri McCoy, Andreas Rummelt and Marcus Wallenberg.

For more information on the Sustainability Committee and other Committees, see the Annual Report, from page 95.

Our CEO is responsible to the Board for the management, development and performance of our business, including our Ambition Zero Carbon strategy and climate-related risks and opportunities. Reporting to the CEO, the Executive Vice-President (EVP) Sustainability and Chief Compliance Officer (CCO), was responsible for the delivery of AstraZeneca's sustainability strategy, including our climate-related strategy. With effect from January 2023, on the retirement of the EVP Sustainability and Chief Compliance Officer, responsibility for Sustainability passed to our EVP Operations, Information Technology and Sustainability.

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 2022, the Group included our CEO; CFO; EVP for Sustainability and CCO; and EVP for Operations and IT. The Ambition Zero Carbon Governance Group met four times in 2022.
- > A TCFD steering group with cross-functional membership (Corporate Affairs, Investor Relations, Finance Risk and Reporting, 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 outcomes from the specialist groups were reported directly to the Board at a meeting in July 2022. In October 2022, there was a full meeting with the Senior Executive Team (SET) to discuss our strategy on climate and the Audit Committee and the Sustainability Committee were both updated on progress in December 2022.

The TCFD steering group met seven times in 2022, 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.

Execution

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.

Remuneration

Since 2021, to incentivise delivery of our environmental, social and governance (ESG) priorities, delivery of our Ambition Zero Carbon commitments 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 by 98% by 2026.

For more information, see Annual Report and Directors' Remuneration Report from page 104.

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.

Our overall approach to risk management and a summary of our Principal Risks can be found in the Annual Report from page 56.

Scope and definitions

Scenario analysis helps 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 RCP shared by the Intergovernmental Panel on Climate Change (IPCC).

For more information, see the table overleaf on page 3.

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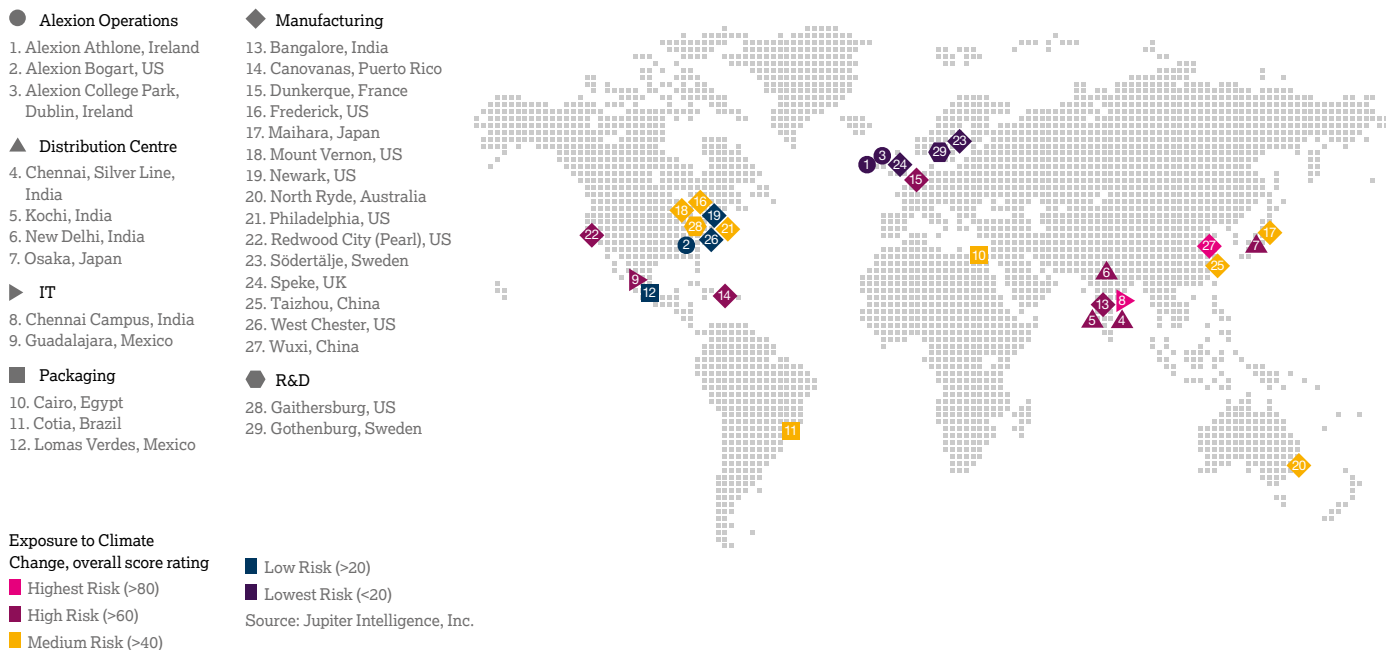
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| Physical risks and temperature scenarios by 2100 | Transition risks & opportunities and scenarios used | |
|---|--|--|
| <p>+1.8°C (RCP 2.6) > RCP 2.6 lays out a pathway and emissions trajectory that is generally aligned with the objectives of the Paris Agreement to limit global warming to well below 2°C, preferably to 1.5°C by 2100, compared to pre-industrial levels.</p> | <p>> 1.7°C (IEA WEO Announced Pledges (APS) – equivalent to RCP 2.6).</p> | <p>> The IEA WEO APS was used as the primary low-carbon future scenario within the Climate Financial Driver Analysis (CFDA). Renewable Electricity Generation and Transport Oil Demand figures were used from the APS. 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 (NDCs).</p> |
| | <p>> 1.5°C (IEA WEO Net-Zero Emissions by 2050 scenario (NZE) – equivalent to RCP 1.9).</p> | <p>> Within the CFDA, sensitivity analysis was carried out using carbon prices from the IEA NZE emissions scenario to ascertain the impact that carbon prices, higher than in Stated Policies Scenario (STEPS), would have. The NZE is a normative IEA scenario that shows a narrow but achievable pathway for the global energy sector to achieve net-zero CO₂ emissions by 2050, with advanced economies reaching NZE in advance of others.</p> |
| <p>+2.7°C (RCP 4.5) > RCP 4.5 is an intermediate scenario with emissions peaking in 2040 and falling rapidly thereafter until 2080.</p> | <p>> 2.5°C (IEA WEO Stated Policies Scenario – STEPS) – equivalent to RCP 4.5.</p> | <p>> The IEA WEO STEPS was used as the primary high-carbon future scenario within the CFDA. Carbon prices from STEPS were used as the primary carbon price regime. Renewable Electricity Generation and Transport Oil Demand figures were also used. STEPS provides a more conservative benchmark for the future, because it does not take for granted that governments will reach all announced goals.</p> |
| <p>+4.4°C (RCP 8.5) > RCP 8.5 is a worst-case scenario consistent with no policy changes to reduce emissions, where CO₂ concentrations in the atmosphere are roughly doubled by 2050 and continue on that path until 2100.</p> | <p>> 4°C (IEA WEO business as usual) equivalent to RCP 8.5.</p> | <p>> 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.</p> |
| <p>Time horizons > Present day, 2030, 2050, 2100.</p> | <p>> Present day, 2030, 2050, 2100.</p> | |

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



Assessment of physical risks

In 2020-2021, working with external consultants Environmental Resources Management Group, Inc. (ERM), we conducted screening studies of two 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.

During 2021, we extended our access to climate scenario data by using Jupiter Intelligence, Inc. for screening of risks from climate hazards to all AstraZeneca sites in future scenarios (RCP 2.6, 4.5 and 8.5). We also used the WWF (World Wide Fund for Nature) Water Risk Filter to assess site water risks such as scarcity, flooding, and diminishing quality to ascertain how these could be amplified in a changing climate. Using the output of this exercise, we introduced 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.

For further information relating to the screening assessments for material sites, see our website www.astrazeneca.com.

In 2021, we conducted a deep dive at 12 sites with high business criticality and potential exposure to climate change impacts in a worst-case scenario (RCP 8.5) by 2030 and 2050. In 2022, we assessed another 17 sites: Wuxi, Södertälje, Maihara, Chennai Campus, Chennai Silver Line, West Chester, Guadalajara, Gothenburg, Cairo, Canovanas, Mount Vernon, Philadelphia, Taizhou, New Delhi, Newark, Osaka, Kochi, Dunkerque, Bangalore, Redwood City, Frederick, North Ryde, Gaithersburg, Cotia, Lomas Verdes, Speke and the Alexion sites Athlone, Bogart and College Park. Locations are visualised in Graph A.

The assessments cover:

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

Global Subject Matter Experts (SMEs) coordinated these assessments, together with local representatives of our Manufacturing, Facilities Management, 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.

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.

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In 2021, we included vulnerability to climate change as a formal decision criterion for the establishment of future internal or external manufacturing capacity and this was applied to projects reviewed in 2022.

During 2022, we conducted a screening assessment of physical climate risks for over 750 strategic suppliers in order to understand the Group's exposure to climate-related hazards in the value chain at a product-level. The information enables us to use science-based climate data in dialogue with critical suppliers to assess their vulnerability to climate change and implications on our supply chain, as well as integrate climate risks in business continuity plans by medicine to increase climate resilience where needed. The Graph B below maps the relative exposures for 10 selected medicines.

In 2022, we continued our investment in nature-based solutions (NBS) through our global AZ Forest Initiative to help tackle climate change at site level. AZ Forest is expected to deliver multiple societal values beyond carbon sequestration:

- > Building more sustainable livelihoods, for example through agroforestry interventions, to increase food security, provide renewable timber resources and reduce fires
- > Biodiversity conservation and restoration
- > Increased resilience to threats exacerbated by climate change, such as heatwaves, droughts, floods and landslides
- > Protecting and restoring water resources by planting in riparian areas
- > Tackling drivers of negative impacts on human health, including air and water quality affected by climate change.

Priorities for 2023 include:

- > Completion of physical climate risk assessments at all remaining strategic AstraZeneca sites
- > 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 of water stress
- > 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 deliver our science-based emissions reduction target of halving our entire value chain footprint (Scope 3) by 2030, and achieve a 90% reduction by 2045, 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

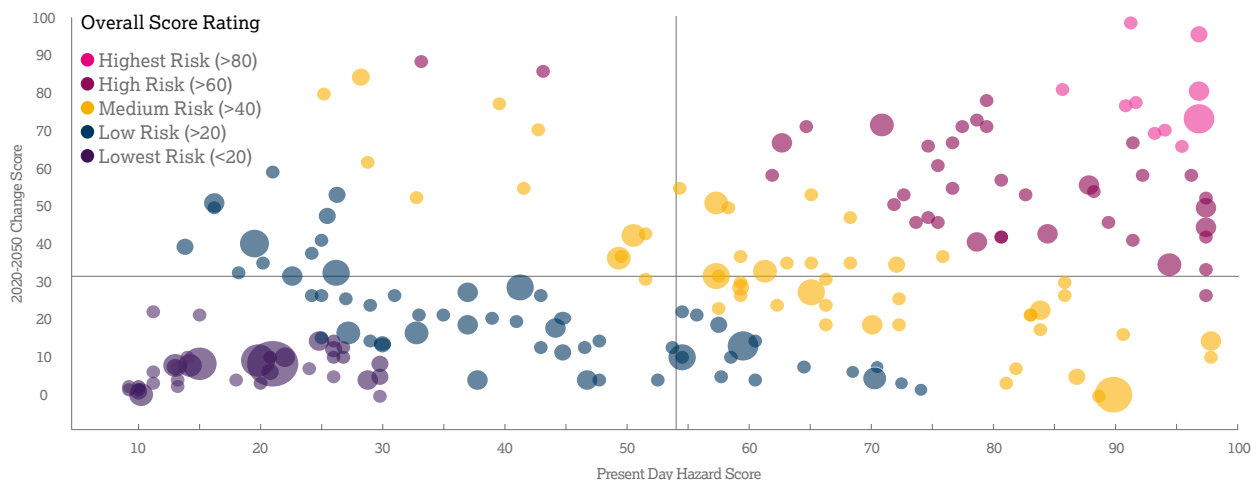
sustainability and efficiency in design, both in terms of process and product design, as well as the supplier network for manufacture and delivery. That means we are responsible for our choices in raw material sourcing, manufacture, and formulation of APIs, along with device and packaging selection.

We believe our patients, and society at large, will require products 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.

With this in mind, our scientists embrace resource-efficient design, migrating away from fossil fuels (where possible) and embracing a 'circular' mindset on use of materials (minimise by design, reuse, recycle, recover). To help them prioritise what environmental aspects to focus on, we use life-cycle assessments (LCAs) to examine the environmental impact of our products. The GHG footprint for most medicines lies in our upstream supply chain; the exception is for the respiratory pressured metered-dose inhaler (pMDI) portfolio where the GHG footprint lies with the patient use. LCA assessments now cover medicines representing approximately 60% of Group revenues and clearly demonstrate the relatively high carbon intensity and potential transition risks of our inhaled respiratory portfolio, compared to other medicines.

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



Source of climate data: Jupiter Intelligence, Inc.

Graph B above shows exposure to hazards related to climate change at material supplier locations for 10 selected 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 a 1-100 scale. The size of a circle reflects the relative number of AstraZeneca medicines related to each location. Locations in the upper-right quadrant are prioritised for further discussion and potential mitigations.

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As the wider healthcare system works to deliver patient-centric net-zero healthcare, this will present some risks for us to manage, as well as opportunities to deliver better patient and societal outcomes with a lower GHG footprint for the healthcare sector.

AstraZeneca is included in the Scope 3 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 UK National Health Service (NHS) 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. Therefore, the transition to next-generation propellants with near-zero global warming potential (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, we work with ERM. Risks and opportunities were assessed at an enterprise-level screen and product-specific level for the medicines where LCA data is available, with examples from all our disease areas.

In 2022, we have continued to focus on pMDI products in our respiratory portfolio due to their relative high carbon intensity, strategic importance to the business, and being the initial focus for the next-generation propellant transition as part of our Ambition Zero Carbon strategy. In two initial CFDAs, risks and opportunities were identified during the transition phase where the current propellant will be substituted to a near-zero-GWP propellant. We aim to launch our first next-generation inhaler by 2025 and transition to next-generation inhalers across our pMDI portfolio by 2030. The transition to next-generation propellants is reflected in our financial forecasts.

In 2022, we conducted 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.

Priorities for 2023 include:

- > Determine the transition risks and opportunities for other high-carbon intensity products in our portfolio based on established methodology
- > Initiate work to understand carbon intensity for legacy Alexion products, their potential exposure to transition risks, and identify potential opportunities where their use can reduce the environmental footprint of existing healthcare pathways.
- > Use an updated business process for annual product planning, 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 crisis⁴: 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.^{3,5} Climate change is also exacerbating the incidence of many non-communicable diseases (NCDs), including cardiovascular and respiratory illnesses, through increased air pollution, extreme heat and other factors.⁶

Climate change affects us all, but populations living in low- and middle-income countries (LMICs) are the most severely impacted.⁷ 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. In the longer term, climate change will add stress to the healthcare sector and increase the risk of patient needs not being met in the future.

By recognising the contribution of the healthcare system to global GHG emissions, we continue to identify and accelerate opportunities to deliver patient-centric, net-zero healthcare as the convening company of the SMI Health Systems Task Force.

By recognising the contribution of the healthcare system to global GHG emissions, we continue to identify and exploit opportunities to deliver patient-centric, net-zero healthcare as one of the leading companies in the SMI, launched at the United Nations Climate Change Conference COP26 by HM King Charles III. Ahead of COP27, Task Force members launched sector-first commitments, actions and recommendations to deliver near-term targets and support the transition to net-zero, sustainable and resilient healthcare.

These actions focus on three priority areas: Supply Chain and Patient Care, Pathways Decarbonisation, and the use of Digital Innovation in Clinical Research.

 For more information, see www.sustainable-markets.org/taskforces/health-systems-taskforce.

Priorities for 2023 include:

- > Deliver on our commitment to the SMI Health Systems Task Force to accelerate the delivery of net-zero healthcare.

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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 |
|--|--------------------------------|---|---|
| Physical risks | | | |
| Increased frequency of extreme weather and climate-related natural disasters. | ● ● ● | <ul style="list-style-type: none"> > Detailed site-level climate risk assessments have now been conducted at 29 sites to verify the screening results from 2020. Outcomes indicate potential for: <ul style="list-style-type: none"> – Increased exposure to extreme heat events and an increased need for cooling to maintain Good Manufacturing Practice (GMP) compliance. – Heavy rainfall causing local flooding and/or inducing landslides. – High wind events that can damage site structures. – Water stress that can threaten access to water used in operations. > Potential risks relate primarily to disruption or delays in a single manufacturing site, 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 these short-term events. > Three case studies underpin this conclusion by exemplifying some typical risks, the consequences, and associated mitigations: Södertälje in Sweden, Maihara in Japan, and Canovanas in Puerto Rico. <p> For more information, see our website, www.astrazeneca.com/sustainability/resources.html.</p> > The results of the detailed site assessments of physical climate risks have been validated by computing the average annual loss of assets (AAL) 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. > We will continue to expand our site assessments and business impact assessments in 2023. | <ul style="list-style-type: none"> > Identified risks have been addressed in the local business continuity plans or planning of technical mitigations integrated into the site master 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 to handle increased volumes of precipitation or strengthening of building resilience to stand up against increased wind speed. > Business resilience has been increased to mitigate our exposure to extreme weather events like hurricane Maria and Ian at Canovanas (Puerto Rico, 2017 and 2022), an extended period of heat in Södertälje (Sweden, 2018) and water scarcity in Chennai (India, 2019). > For example, our site in Canovanas has taken proactive steps to increase its resilience and mitigate the risks posed to our business operations by installing its own heat and power plant to reduce reliance on the local power network, complemented with on-site solar panels, battery storage and emergency generators (\$12 million) and renovations of the two main manufacturing and warehouse buildings to comply with the latest building code (\$9 million). > Progress adoption of the Alliance for Water Stewardship Standard and set long-term targets by 2025 at six identified priority sites. Identify opportunities to take action in hot spot regions, together with stakeholders, to manage water stress in a systematic way. > In 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. In 2022, the data has been used to map vulnerabilities in the unique supply chain for 10 selected medicines. Suppliers with high criticality and exposure to significant future climate hazards will be contacted in 2023 to ensure that they build climate resilience within their business continuity plans. > Climate risk assessments have been included in the site evaluation criteria for investment in new operations and applied to a first case in 2022. |


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| Risk or opportunity | Time horizon Short/Mid/Long | Potential impact | How it is managed |
|--|--------------------------------|---|---|
| Transition risks and Opportunities | | | |
| <p>Increased demand for sustainable low GWP products and services from healthcare providers in some countries may result in the potential for green 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 pathways.</p> | ● ● ● | <ul style="list-style-type: none"> > Some healthcare providers and professionals are actively looking to substitute medicinal products based on their GHG footprint to reduce their own Scope 3 footprint, as part of their net-zero targets. > One example is NHS England and its net-zero target by 2045, with an ambition to reach an 80% reduction by 2036 to 2039. This could impact patient access to essential medicines in order to meet emission reduction targets. > Transitioning to low GWP respiratory products as part of our Ambition Zero Carbon strategy, and understanding the positive impacts that disease prevention, digital, early diagnosis and clinical intervention can have on the carbon footprint of specific patient care pathways, will provide business opportunities to improve the standard of care and clinical outcomes with a lower environmental footprint. | <ul style="list-style-type: none"> > As part of our flagship \$1 billion Ambition Zero Carbon strategy, we will transition to near-zero GWP propellants across our asthma and Chronic Obstructive Pulmonary Diseases (COPD) products between 2025 and 2030. > 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. > 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. > Patients whose treatment is optimised are more likely to have a lower climate impact overall, through reduced reliever pMDI use and fewer emergency or unscheduled healthcare interventions. We are working with academics and healthcare agencies to understand the environmental impact of respiratory care pathways for patients with controlled and uncontrolled asthma and the opportunities for improved clinical care with a lower environmental footprint. The output of these environmental and clinical studies was communicated at scientific conferences and via new peer-reviewed literature in 2022.⁸ > Early diagnosis and clinical intervention can provide further opportunities to improve the standard of care and clinical outcomes with a lower environmental footprint. |
| <p>Review of the US, EU, UK and other national F-gas regulations and their impact on respiratory medicines used to treat asthma and COPD.</p> | ● ● ● | <ul style="list-style-type: none"> > The EU Fluorinated Gas (F-gas) Regulation review carries 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 (58% phase-down target as of 2027 and ban on pMDI export countries that have not ratified the Montreal Protocol/Kigali Amendment). The US Senate ratified the Montreal Protocol/Kigali Amendment in October 2022, yet many other countries e.g. UAE, Egypt, Brazil and some other low- to middle-income countries (LMICs) have yet to ratify the Protocol. The loss of the medicinal exemption, or lack of a long-term phased transition until 2030, could prevent or limit availability of products in our pMDI-inhaled medicines portfolio should these restrictions apply before the transition to next-generation near-zero GWP propellants is complete. > 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. | <ul style="list-style-type: none"> > As part of our flagship \$1 billion Ambition Zero Carbon strategy, we will transition to near-zero GWP propellants across our asthma and COPD medicines between 2025 and 2030. > AstraZeneca supports the goals of the proposed EU F-gas Regulation, recognising the positive impact it could have on climate and health. Yet, it is critical that the draft Regulation evolves to avoid the risk of limiting lifesaving inhaled medicines used by people with asthma and COPD.⁹ > We are calling on the EU to establish a phase-down schedule which protects patient safety and supports the transition to low-GWP alternatives, by maintaining the proposed reference values for medical F-gas in 2024-2026 through to 2030 to ensure continuity of care globally without compromising EU GHG emissions reductions targets. An updated EU F-gas Regulation is expected to be ratified in 2023. > 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) in early 2023 to also control hydrofluorocarbons (HFCs). We will be calling for an outcome consistent with the EU position. |

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"> > 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. > Carbon pricing based on the IEA Net-Zero Emissions by 2050 scenario forecast which follows the 1.5°C warming pathway (\$140/tCO₂ by 2030). | <ul style="list-style-type: none"> > 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. > We are being positive advocates for science-based targets 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 e.g. the proposed updates of the EU Emissions Trading Scheme (ETS) to include road and sea transportation. |
| Supply-demand of renewable energy (power and heat). | ● ● ● | <ul style="list-style-type: none"> > Access to clean heat alternatives to natural gas, such as biomethane, generally requires higher investment. > Access to good quality renewable electricity in all our locations, including changes that can lead to the loss of access due to geopolitics. > Participation in renewable energy programmes and adoption of energy efficiency measures to reduce operating costs and exposure to future fossil fuel price/carbon price increases. | <ul style="list-style-type: none"> > AstraZeneca invests approximately \$25 million per annum in natural resource reduction programmes, including those that improve energy efficiency. Absolute natural resource reductions, including those that reduce our GHG emissions, are a primary metric alongside return on investment. Since 2015, we have invested \$150 million and delivered a 14.4% reduction in energy use and 59.3% reduction in our Scope 1 and Scope 2 emissions. This reduces our exposure to incremental costs associated with some renewable alternatives. > Renewable power implemented by 2020 at all sites with a 2% premium. In 2021, the premium increased to 3.5% and in 2022, returned to 2%. > In 2022, we made a detailed analysis of the risks and opportunities for transferring to renewable energy in AstraZeneca and the broader supply chain. > We joined the Renewable Thermal Collaborative in 2020 to unlock opportunities for renewable biomethane in the US and UK markets to prepare for a transition by 2025. In 2022, tenders to market and negotiation on contracts relating to new energy supply to markets (Biomethane and Renewable power) in the US, UK and Sweden have progressed. > The Energize initiative, co-founded by AstraZeneca, together with peers in the pharmaceutical industry, progressed in 2022 to enable access to renewable energy in supply chains. Starting in the US and the EU in 2022, we onboarded over 400 suppliers into the programme, over 100 of whom have completed the educational series. A first cohort of 10 companies has been formed to go to market to contract for over 2 TWh of electricity and the pool of sponsors has increased by five, further strengthening the collaborative nature of the programme. There are plans to expand into less mature markets. <p> For more information, see https://neonetworkexchange.com/Energize.</p> |

Task Force on Climate-related Financial Disclosures Statement

continued

| Risk or opportunity | Time horizon Short/Mid/Long | Potential impact | How it is managed |
|--|--------------------------------|--|---|
| Change in raw material or sourcing cost. | ● ● ● | <ul style="list-style-type: none"> > 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). > Similar increased operational costs in the supply chain may also affect pricing and costs of raw materials including packaging. > There could be a significant risk associated with increased costs for using high-carbon transport modes. > More efficient buildings will reduce costs; improved facilities management will lead to lower costs for repair and replacements. > Use of lower-emission sources of energy will reduce costs and will reduce exposure to fossil fuel and carbon price changes. > Use of more efficient production and distribution processes will reduce operational and logistical costs from using more efficient processes. | <ul style="list-style-type: none"> > Carbon costs are properly factored into engineering feasibility, options appraisal and capital expenditure decision making. Engagement with contract manufacturing organisations (CMOs) and other supply chain partners covers issues such as their transition to the low-carbon economy. > Ensuring the early opportunities for gaining regulatory approvals for new and emerging transport modes and technologies so that logistics continuity is maintained. > Ensuring the costing for drugs considers potential increases associated with transition risks (such as cost of fuels and changes to approval mechanisms). > 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. > Engagement ensuring that sustainable performance is positively recognised within procurement is being explored. > In 2022, we made a detailed analysis of risks and opportunities when transferring over to low-carbon alternatives for transportation and raw materials by 2030. |

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 \$150 million and delivered a 14.4% reduction in energy use and 59.3% reduction in our GHG emissions Scope 1 and 2, and a 9% increase for 2019 baseline for Scope 3 emissions.

Full details of our GHG footprint are disclosed in our Sustainability Data Summary Report 2022, www.astrazeneca.com/sustainability/resources.html.

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 2022, we were recognised for our efforts in environmental sustainability across our strategic priorities. This included the following:

- > CDP Double A List for Climate and Water Security, for the seventh consecutive year
- > Dow Jones Sustainability Index World and Europe constituent
- > Financial Times 2022 European Climate Leader for reduction of greenhouse gas emissions
- > FTSE4Good Index Series constituent.

For more information, see our Sustainability Report and Sustainability Data Summary available on our website, www.astrazeneca.com/sustainability/resources.html.

¹ World Health Organization (September, 2018) preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks.

² The 2020 report of The Lancet Countdown on health and climate change: responding to converging crises.

³ The 2022 report of The Lancet Countdown on health and climate change: health at the mercy of fossil fuels

⁴ World Health Organization, "Climate change and health", 30 October 2021.

⁵ The 2021 report of The Lancet Countdown on health and climate change: code red for a healthy future.

⁶ Sustainable Markets Initiative Health Systems Taskforce, in collaboration with BCG, November 2022.

⁷ "Health Inequalities and Climate Change: Action for Global Health Position Paper," Action for Global Health, 2021.

⁸ The carbon footprint of respiratory treatments in Europe and Canada: an observational study from the CARBON programme <https://erj.ersjournals.com/content/60/2/2102760>

⁹ Our public position to the EU Consultation is available at:

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12479-Fluorinated-greenhouse-gases-review-of-EU-rules-2015-20-/F3318708_en