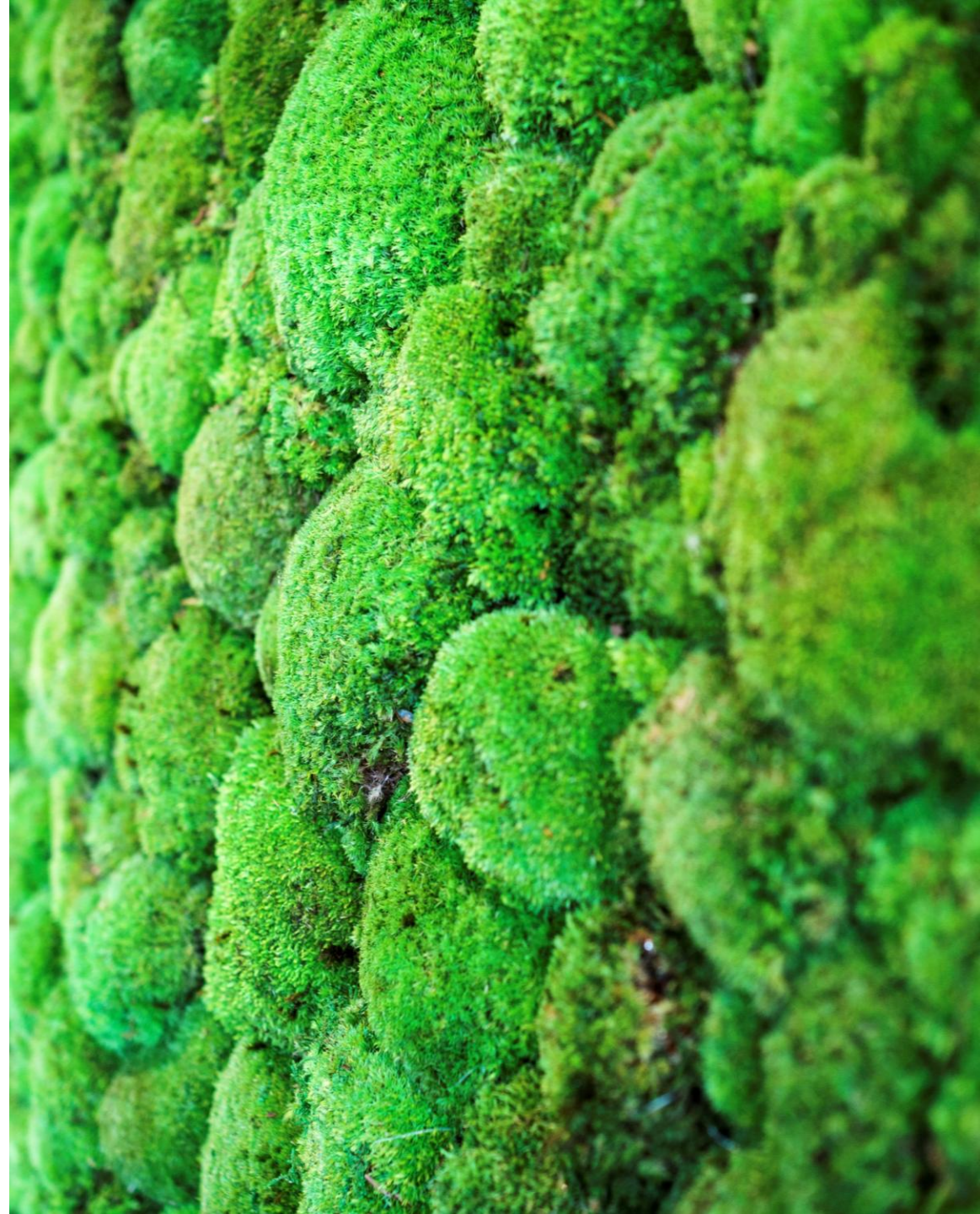





Partnering to decarbonise healthcare

Ben Dory
Director, Sustainability Corporate Affairs





Building a more
sustainable future for
people, society
and the planet

Our AstraZeneca UK sustainability agenda is built around three commitments



We reduce healthcare inequalities in the UK



We protect the environment

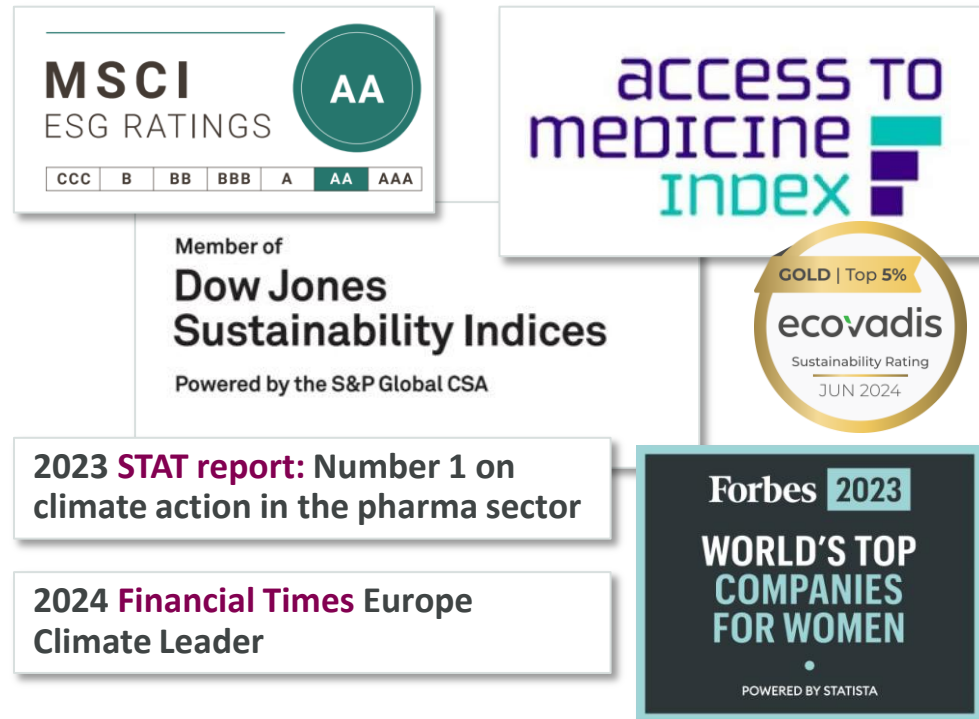


We invest in our people and our communities

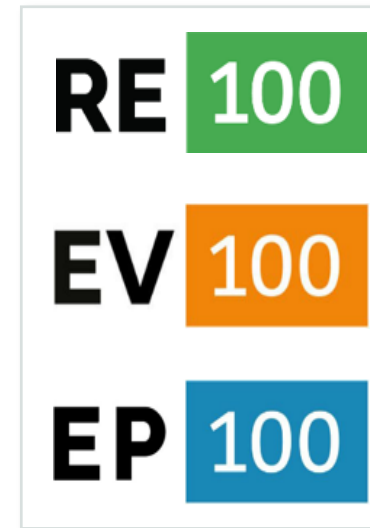


AZ has had a long-term commitment to sustainability

External recognition

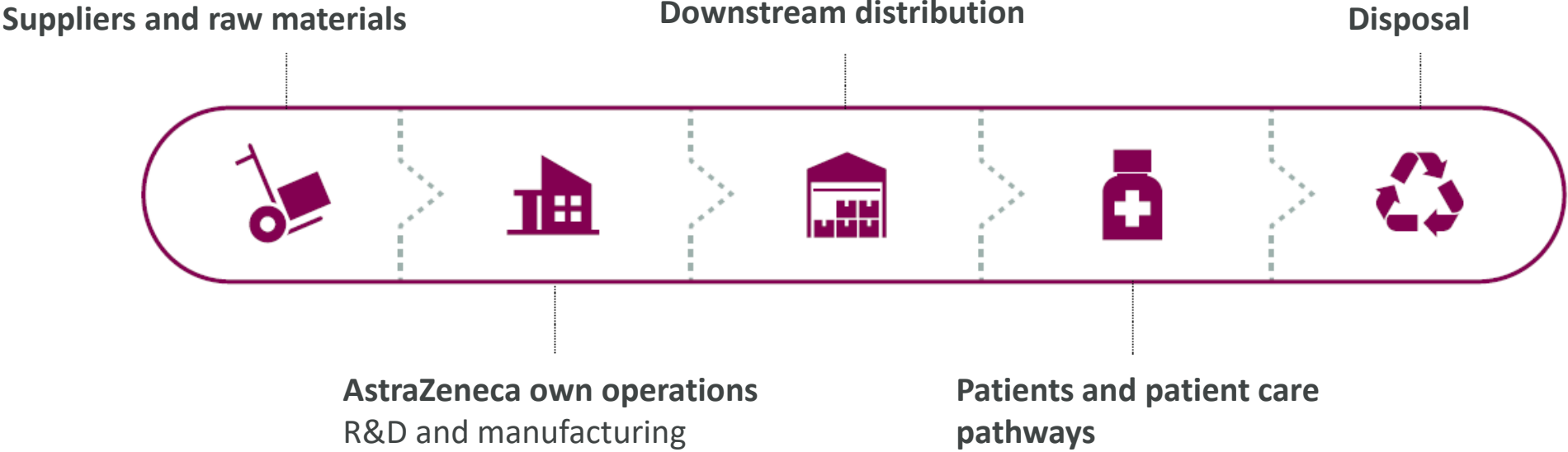


Commitments to a better future



Sustainable science is embedded into everything we do, from lab to patient and beyond

Whether in research and development, clinical innovation, manufacturing or the treatment and delivery of healthcare, we are embedding sustainability across our value chain.



Ambition Zero Carbon – decarbonising AZ value chain

Our approach:



Our targets:¹

By 2026
Reduce scope 1 & 2 emissions by 98%
By 2030
Reduce entire value chain footprint by 50% (scopes 1,2,3) & be carbon negative
By 2045
Reduce entire value chain footprint by 90% (scopes 1,2,3) to become science-based net zero

*Scopes 1 & 2 – 2015 base year; Scope 3 – 2019 base year



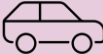

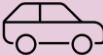
Focussing on a priority shared with the NHS:

AstraZeneca UK is leading the way in transitioning to low carbon pMDI inhalers

~3% of the carbon footprint of NHS results from the use of pMDIs¹

From 2025, AstraZeneca pMDI portfolio will begin to use a next-generation propellant (NGP) with 99.9% lower GWP than in today's medicines,² subject to regulatory approvals.

A pMDI using HFO-1234ze would have GHG emissions comparable to DPIs.³

Propellant	GWP ²	Equivalent GHG in miles ⁴
DPI	<1	2.6 
HFO-1234ze (NGP)	<1	2.6 
HFA-134 (Current)	1300	3,311 

1. Improving health outcomes for respiratory patients while reducing carbon emissions. Available at

<https://www.england.nhs.uk/greenernhs/whats-already-happening/improving-health-outcomes-for-respiratory-patients-while-reducing-carbon-emissions/>

2. Pritchard J. Drug Des Devel Ther 2020; 14: 3043-3055

3. Hargreaves C, Budgen N, Whiting A, et al. S60 A new medical propellant HFO-1234ze(E): reducing the environmental impact of inhaled medicines. Thorax. 2022; 77: A38- A39.

4. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results> (miles driven by an average gasoline-powered passenger vehicle).

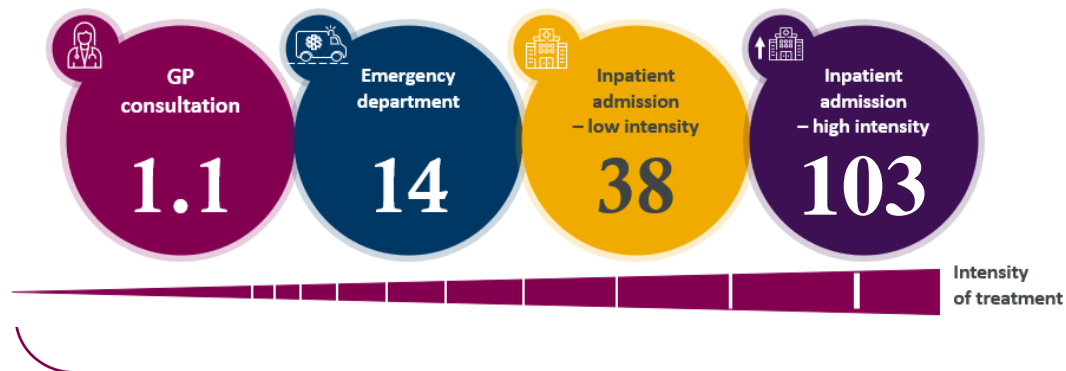


Decarbonising care pathways

Inadequate, reactive care carries an extraordinary carbon footprint...

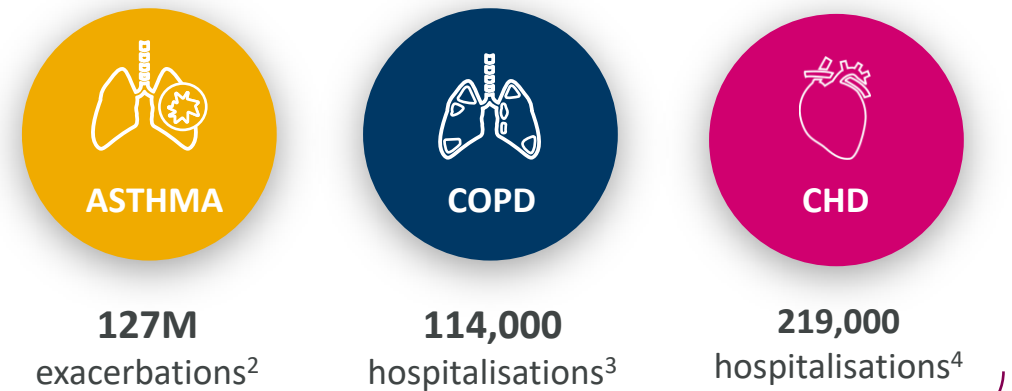
Carbon footprint increases with
unscheduled visits & treatment intensity...¹

GHG emissions (kg CO₂e) per healthcare resource event



...against a backdrop of emergency service
overload due to inadequate 'reactive' care

EVERY YEAR IN UK...



Many millions of tonnes CO₂e

*In UK alone, annual asthma exacerbations account for 724 kilotonnes CO₂e²
(169k passenger vehicles driven for 1 year)⁵*

1. "Care Pathway Carbon Calculator". Sustainable Healthcare Coalition webpage, accessed January 2025
2. Kponee-Shovein K, Marvel J, Ishikawa R, Choubey A, Kaur H, Thokala P, Ngom K, Fakhri I, Schatzki T, Signorovitch J. Carbon footprint and associated costs of asthma exacerbation care among UK adults. J Med Econ. 2022 Jan-Dec;25(1):524-531
3. Hospital admissions for asthma and COPD, NHS England. Available online: <https://digital.nhs.uk/supplementary-information/2023/hospital-admissions-for-asthma-and-copd>. Accessed January 2025
4. DHSC PHE Fingertips data. Available online: <https://fingertips.phe.org.uk/search/heart#page/4/gid/1/pat/159/par/K02000001/ati/15/are/E92000001/iid/90988/age/1/sex/4/cat/-1/ctf/-1/yr/1/cid/4/tbm/1>. Accessed January 2025
5. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results> (miles driven by an average gasoline-powered passenger vehicle)

SENTINEL: Tackling current problems



Nationwide picture

What we've achieved so far



Emergency care admissions



more admissions over last 2 decades¹

29.8% ↓
in patients experiencing asthma attacks²



Sustainability



of overall per-capita GHG[‡] emissions accounted for by SABA over-reliance^{3**}

44,275 fewer SABA inhalers
Equivalent to
1,200 tonnes CO₂e⁴



Health inequalities



SABA overuse and poor outcomes are linked to **deprivation**⁵

57.1% ↓
in number of patients receiving 6 or more SABA

** ≥3 SABA canisters/year (DPI & pMDI); GHG = Greenhouse gas emissions

1. Alwafi, H et al. BMC Pulm Med 23, 49 (2023). <https://doi.org/10.1186/s12890-023-02342-6>

2. Crooks MG, et al. ERJ Open Research Jan 2023, 00685-2022; DOI: 10.1183/23120541.00685-2022

‡Overall GHG emissions are scaled to the UK asthma population (n=5.4 million⁴) and include those related to all asthma medication and healthcare resource utilisation (HCRU) and exacerbations. September 5–8, 2021

3. Wilkinson, A et al. European Respiratory Journal 2021 58: OA76; DOI: 10.1183/13993003.congress-2021.OA76

4. Royal College of Physicians. Sentinel Project. Available online: <https://www.rcp.ac.uk/news-and-media/news-and-opinion/the-sentinel-project/> [Accessed Jan 2025]

5 Alsallakh MA, et al. PLoS Med. 2021 Feb 12;18(2):e1003497. doi: 10.1371/journal.pmed.1003497. PMID: 33577558; PMCID: PMC7880491



We are decarbonising care pathways in partnership with the NHS

Generating evidence & developing tools

Transforming care to improve outcomes & reduce emissions

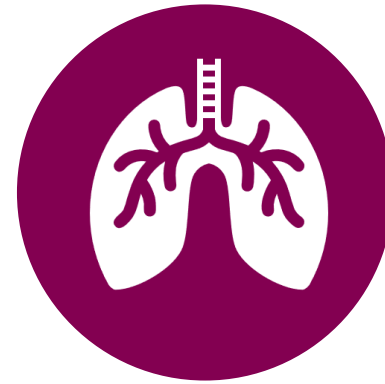


SABINA CARBON study

Evidencing that carbon emissions are associated with suboptimal asthma care in the UK¹



Sustainable Kidney Care Calculator
Developing a free online carbon footprint calculator for use in in-centre haemodialysis units (ICHU)²



Sustainable care in asthma
44,275 fewer blue SABA inhalers issued, saving 1,240 metric tonnes of carbon emissions, equivalent to 39,600 ambulance responses^{3,4}



Sustainable care in chronic kidney disease
The carbon cost of kidney care patients is double that of other secondary care patients⁵

1. Wilkinson, A.J., 2024. BMJ. Greenhouse gas emissions associated with suboptimal asthma care in the UK: the SABINA healthCARE-Based enviroNmental cost of treatment (CARBON) study. 2. Sustainable Healthcare Coalition. Sustainable Kidney Care, ICHD Carbon Calculator. Available online: <https://ichdcarbon.org/>. 3. The Sentinel Project – Collaborating to improve asthma care, available online at <https://www.abpi.org.uk/partnerships/working-with-the-nhs/nhs-industry-partnership-case-studies-library/astrazeneca-february-2021-case-study-1/>. 4. Scoping ambulance emissions: recommendations for reducing engine idling time Available online: <https://www.paramedicpractice.com/content/features/scoping-ambulance-emissions-recommendations-for-reducing-engine-idling-time/#:~:text=An%20average%20of%2031.3%20kg,current%20box%2Dshaped%20ambulance%20design>. 5. Sustainability Series. Snapshot of Kidney Care. Available at <https://sustainablehealthcare.org.uk/blog/sustainability-series-snapshot-kidney-care>



Thank you

ben.dory@astrazeneca.com

