

Decarbonization: Accelerating the transition to net-zero

Discussion document

June 2023





Why should Pharma companies care about Decarbonization?



Pharma companies and healthcare providers account for **~10% of GHG emissions** – higher than either the aviation or shipping industry



If the global healthcare sector was a country, it would be the **fifth largest GHG emitter** on the planet - 2 gigatons of CO₂e annually

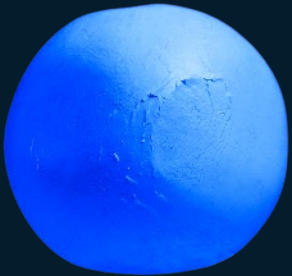
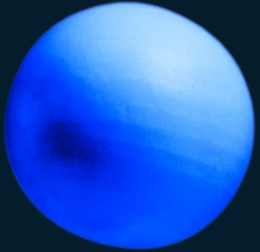


From 2019 to 2022, the number of life sciences companies that have committed to or set science-based targets for emissions reductions **has increased from 7 to 104**



For generics players, **75-80% of emissions come from Scope 3**. Of these, the majority (**50%+**) are in **Purchased Goods and Services** due to production of APIs, excipients, and process chemicals

Objectives for today



WHY NOW – Trends on decarbonization for Pharma companies



WHAT IS INVOLVED and WHAT WILL IT TAKE



WHAT CAN YOU DO to act now and accelerate your journey to net-zero

Stakeholders across the value chain are moving to action



A. Regulatory and customer demands



Announced net-zero targets in UK



Pledge¹ to reduce emissions by 50% by 2030 and net zero by 2050



In India, filing of BRSR² made mandatory by SEBI from FY23



B. Investor expectations

Blackstone

BlackRock

Investor push – Pressure from PE firms to decarbonize their portfolio companies



C. Competitors have stepped up actions

Top innovator companies have already made Net Zero commitments



Generics companies have also started setting their aspiration



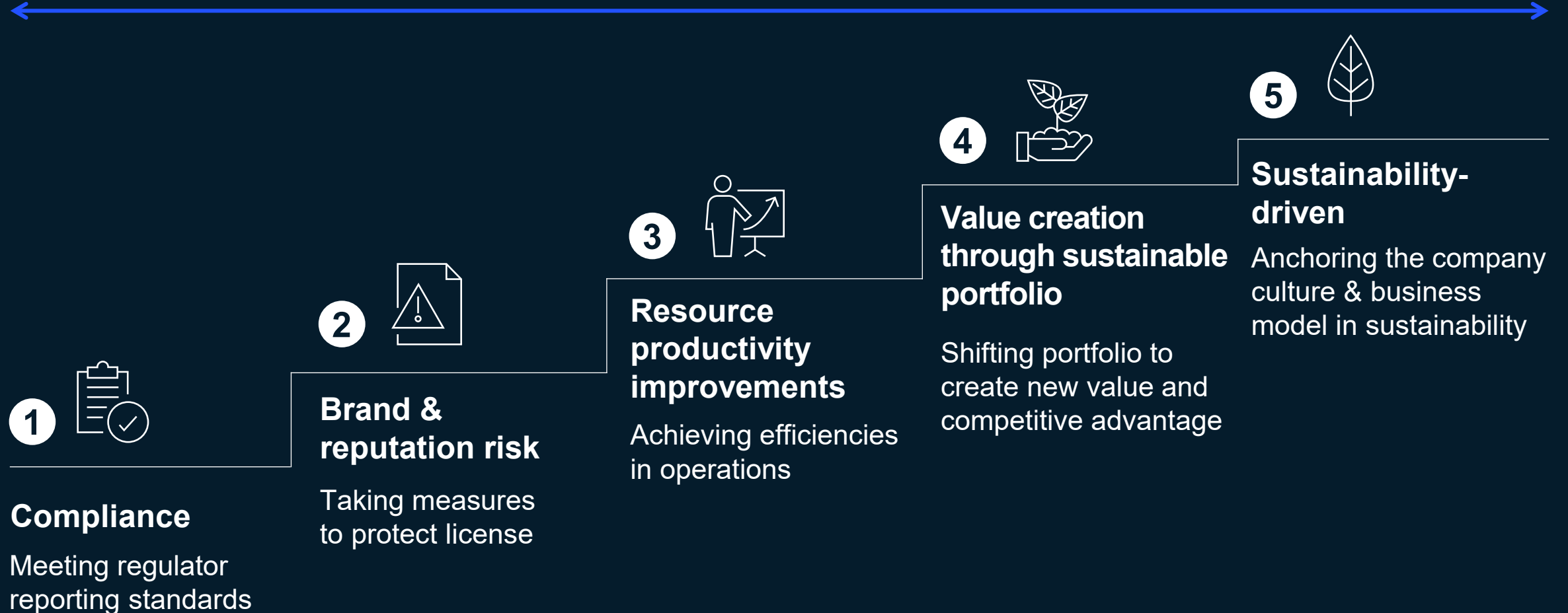
1. Health and Human Services – A Cabinet-level executive department of the US federal government

2. BRSR - Business Responsibility and Sustainability Report

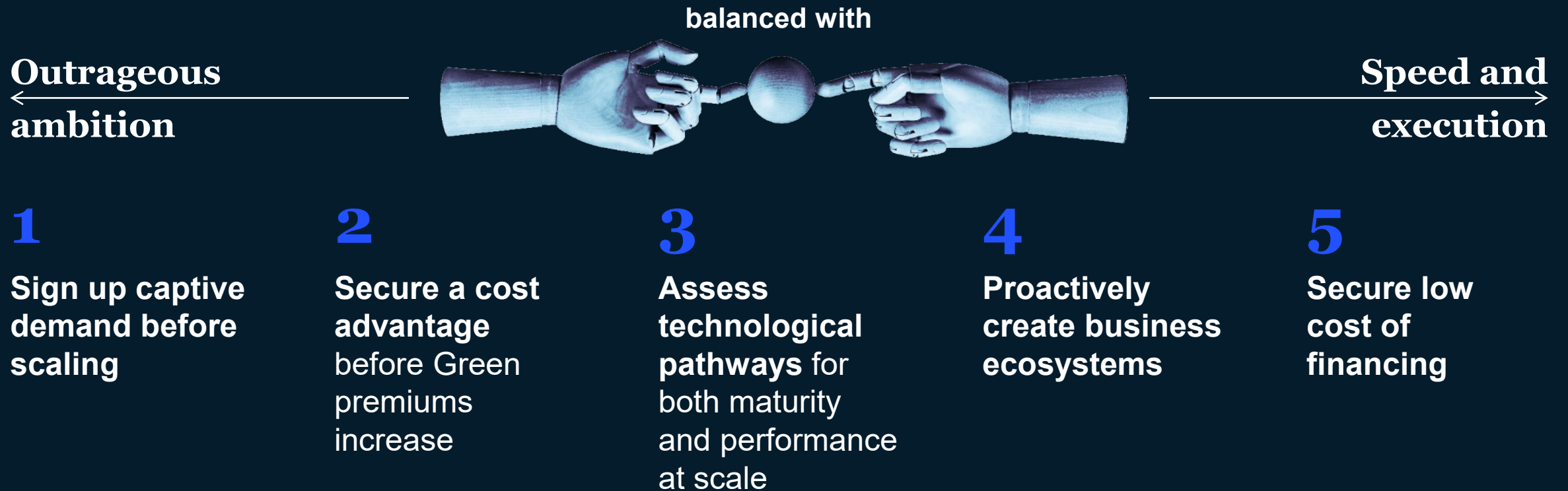
The sustainability journey for companies can take a 5-part approach on the path to net zero

Managing risk

Pursuing growth

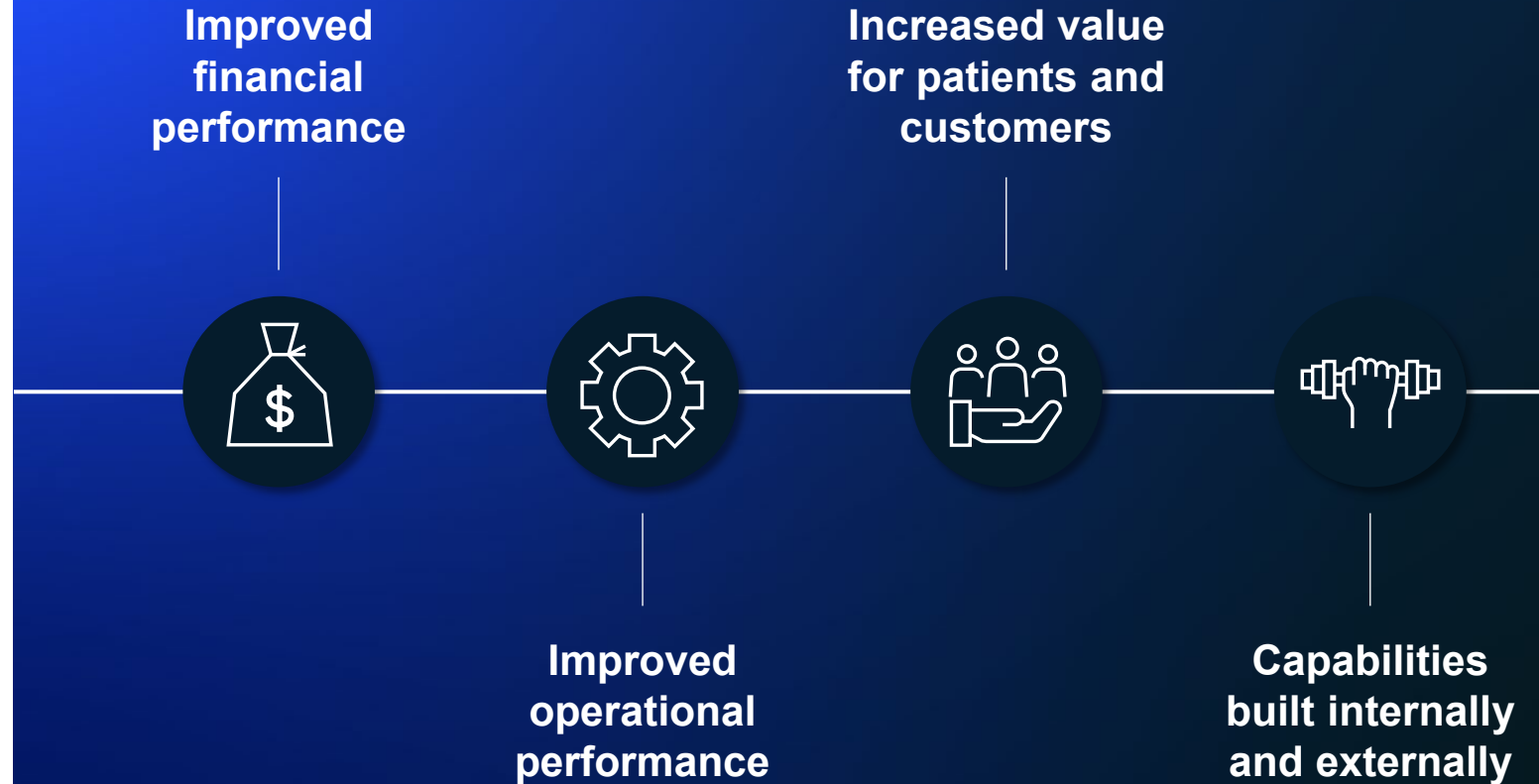


Other industries have started using Decarbonization as a source of differentiation and growth

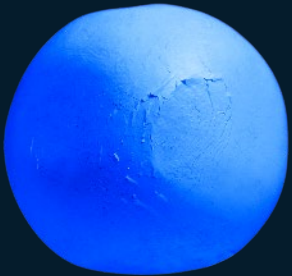
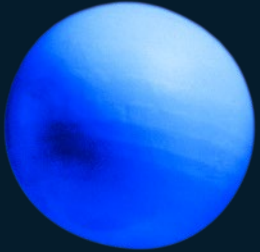


NOT EXHAUSTIVE

There is value to both the planet and Life Sciences companies from decarbonization



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Companies can think about Decarbonization in **3 steps**



Ambition & investments

Define ambition level fit, considering risks, benefits and costs



Roadmap & launch execution

Initiate planning on low carbon sourcing, circular business models, and sustainable product design



Operationalize & sustain the change

Define the right governance, build capabilities and processes, incentive mechanisms

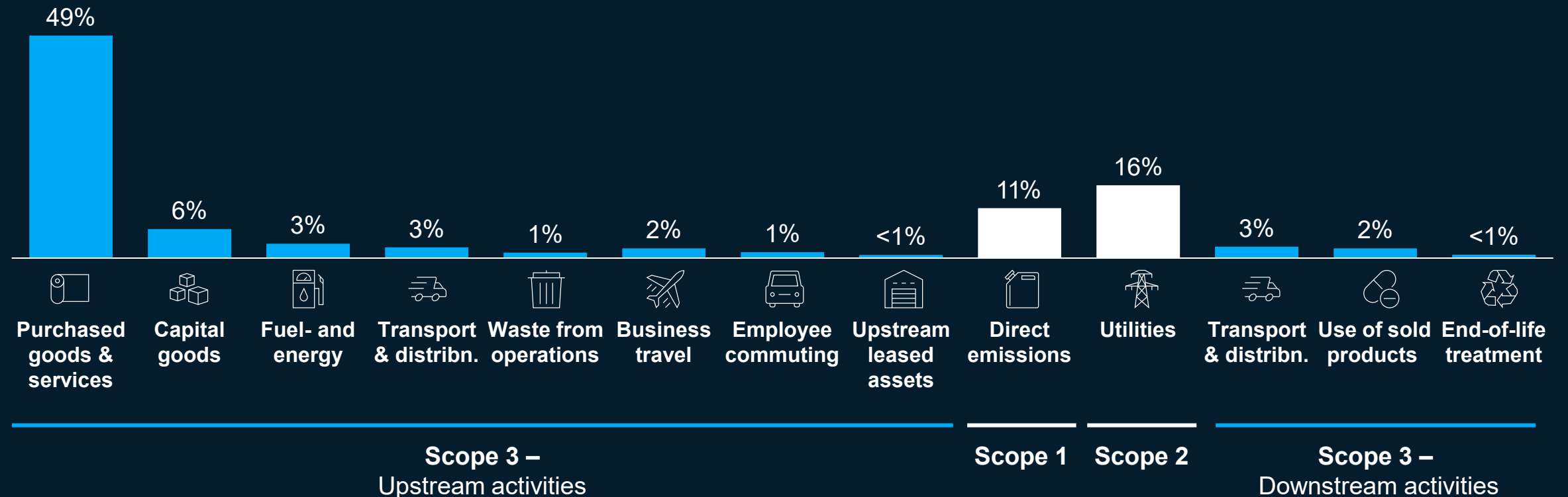
~75%+ of emissions for Pharma players are Scope 3 (in the value chain), and ~50% are from purchased goods and services



Emission Profile Based on 38 Life Sciences Players – Normalized by Revenue¹



■ Scope 1 & 2 ■ Scope 3

GHG emissions by source, based on CDP emissions data, % of total



1. Baselineing is made using available data using Spend based data, Consumption based data, Activity based data. Data is automatically ingested from ERP and other business systems. Note: Scope 1 and 2 emissions are provided as single totals by CDP. Scope 3 emissions with negligible emissions or insufficient peer data have been omitted

For Pharmaceutical companies, ~60% of emissions can be abated at near-zero cost cumulatively by 2040

	 Abatement potential (% of total CO ₂ e)	 Abatement cost (USD/tCO ₂ e)
NPV Positive levers	~33%	~ -50
Cumulative NPV Neutral levers	~57%	~0
Cumulative all levers	~90%	~100

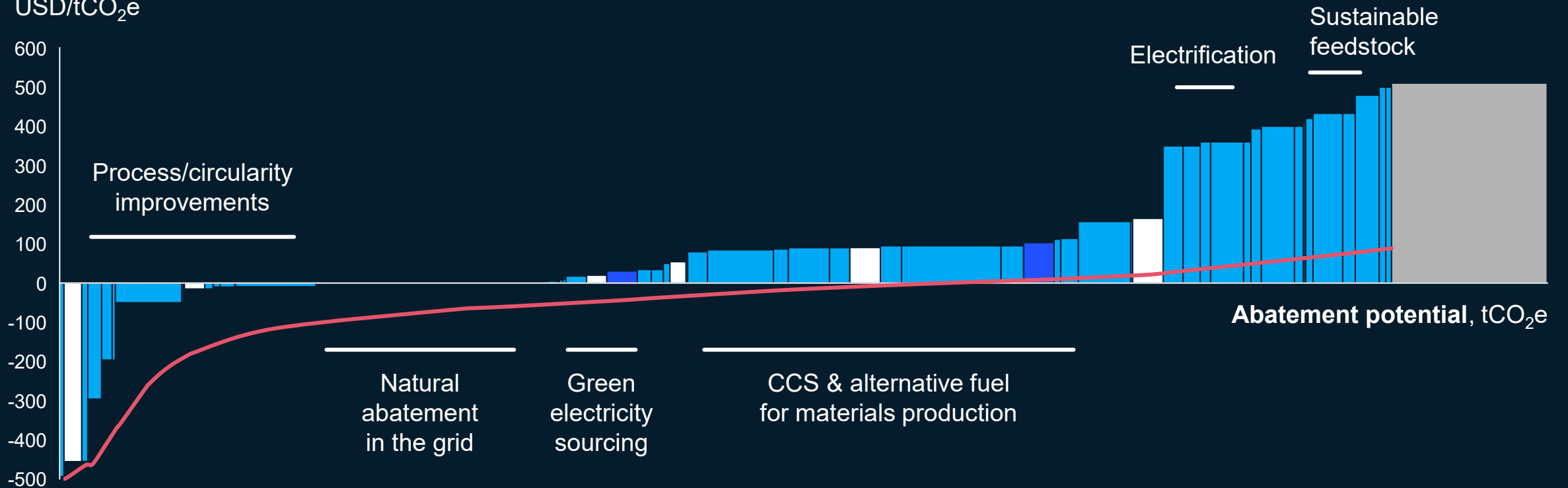
The Marginal Abatement Cost Curve (MACC) breaks down relevant levers for decarbonization with associated cost and abatement

Non-exhaustive

Scope 1
 Scope 2
 Scope 3
 Unabated
 Cumulative abatement cost

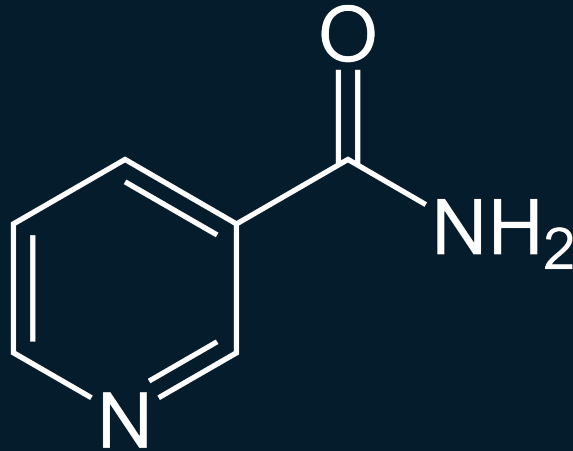
Marginal abatement cost curve (MACC)¹, costs projected to 2040

Abatement cost ^{1,2} to 2040, USD/tCO₂e



1. Selection of abatement levers (non-exhaustive list); calculated as LCOP delta between from and to technologies from 2022 to 2040

Net zero possible using today's technology – Niacinamide example



Niacinamide¹
6.8 g CO₂e/g

Emissions

Actual

Feasible today

Process¹

Emissions that are produced while manufacturing products
SBTi relevant

4.7



0.2

Feedstock-related

Embedded carbon in product: net emissions in ton CO₂e incinerating product at end of lifecycle
not SBTi relevant

2.1



0

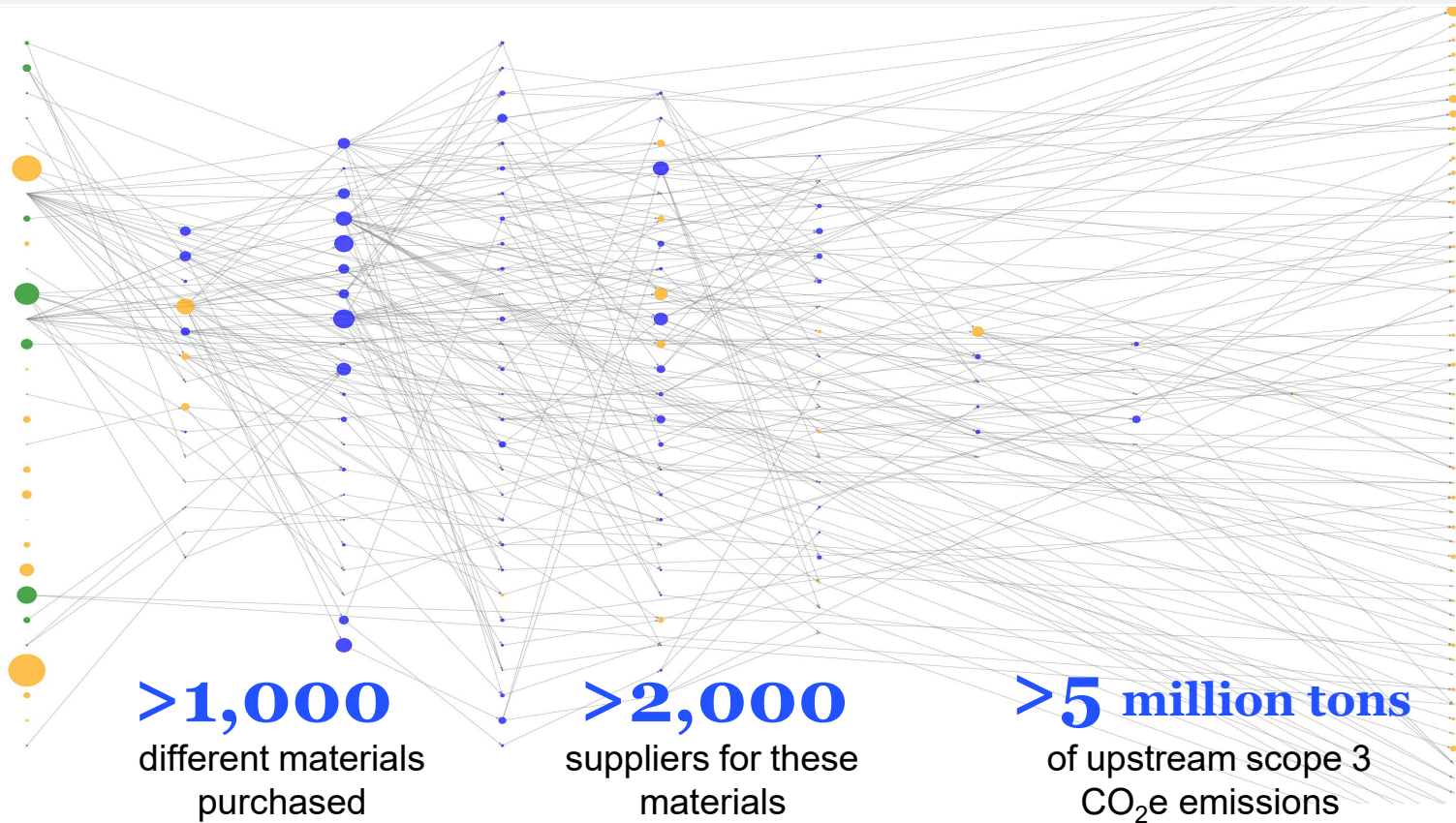
g CO₂e per g of niacinamide

g CO₂e per g of niacinamide

1. Outside in bottom-up calculation of CO₂e footprints

Mapping the portfolio identifies the CO₂e hotspots along and across value chains, and helps identify the most impactful ‘hotspots’

Sanitized client example, scope 3 emission baseline of >5 Mt CO₂e



Digital Twin is used to extract the “CO₂e hotspots” across entire materials portfolio and, thus, prioritize abatement levers for maximum impact

Only 3 value chain partners could provide a ~35% CO₂e abatement across the portfolio

Demand for CO₂e abatement will outpace supply significantly over the next 5-10 years

Emissions reduction in European industrial production,
Million tons CO₂e, 2021 vs. 2030

Demand
for GHG¹ abatement based
on company commitments



535 All at "1.5°C trajectory"

350 Current industry targets and commitments

Supply
of GHG abatement²



50-150

1. Greenhouse gas

2. Excluding targets set for buildings and transportation, including increased supply of recycled materials

Recap: What will the decarbonization journey take?



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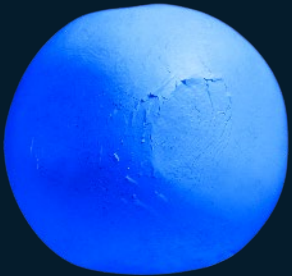
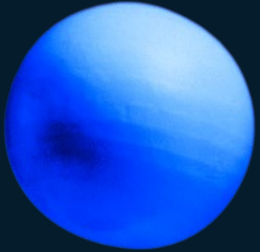
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Leaders can prioritize five key actions to win

Action #1

Develop a **full potential “play offense” strategy** for value creation and winning the transition

Action #2

Accelerate capital / resource deployment with a PE mindset – hyperscale green businesses AND decarbonize hard to abate assets

Action #3

Embed **Net Nature Positive** in your value creation plans

Action #4

Build a new kind of **partnership and ecosystem muscle** (private, public, philanthropy)

Action #5

Aggressively **reskill** yourself, your leadership teams, and your board



How can you tactically get started

01



Fitness

We begin by focusing on some core muscle groups

02



We build habit by doing easy to do exercises (e.g., jogging)

03



We commit by taking up a paid Gym membership

**Decarb-
onization**

Are you aware of your emissions baseline?
How it is split between Scope 1,2 and 3 emissions?

What are some of the big NPV positive ideas you could implement in next 2 years?

Are you investing in partnerships with tier-n suppliers to achieve your Long term Decarbonization strategy?

Questions?