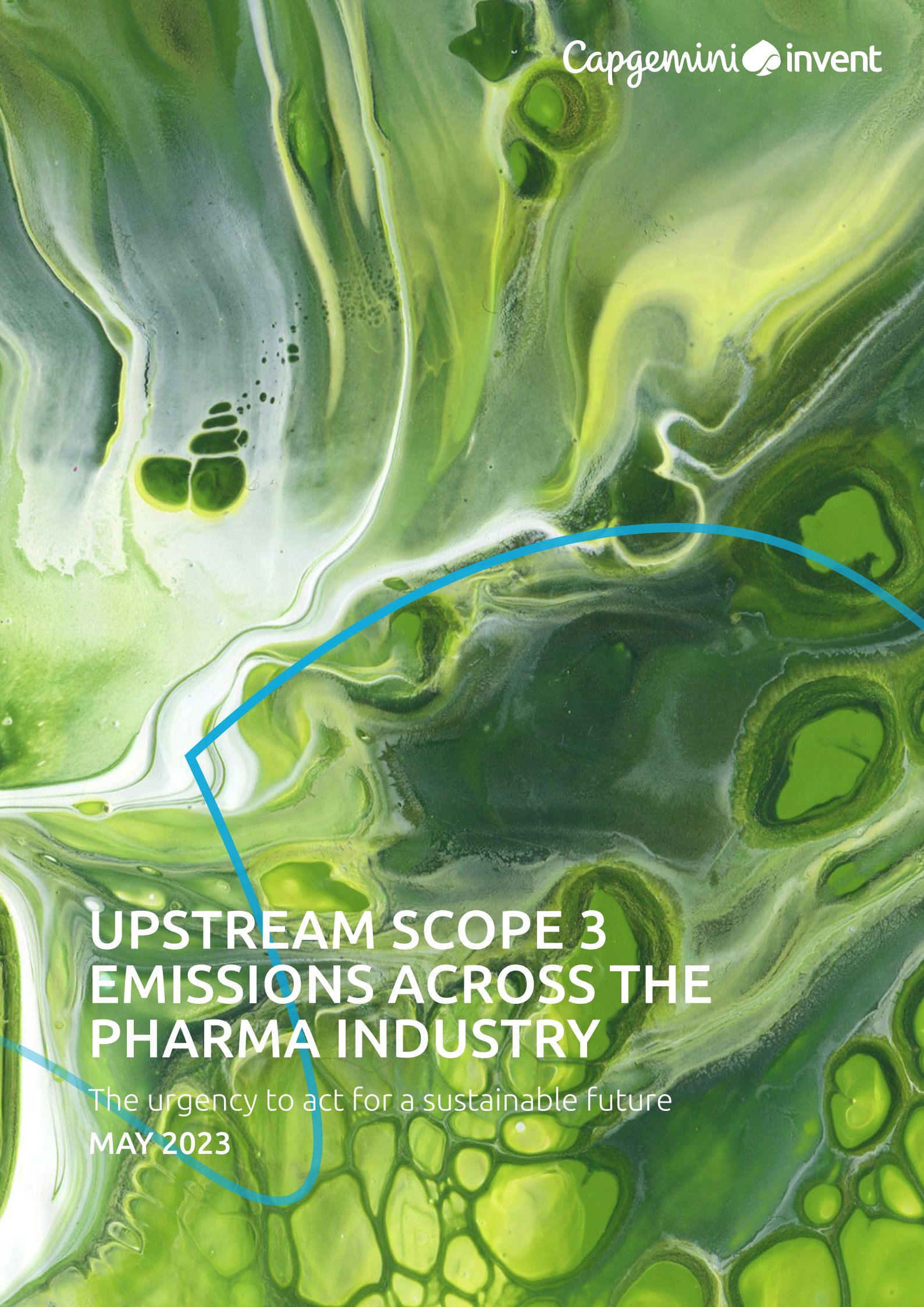


Capgemini invent

UPSTREAM SCOPE 3 EMISSIONS ACROSS THE PHARMA INDUSTRY

The urgency to act for a sustainable future

MAY 2023

OUR OBJECTIVE IS CLEAR

Limiting and stabilizing global warming below 2°C by 2100. Carbon emissions must be reduced rapidly - with a target of zero net by 2050 - and other greenhouse gas (GHG) emissions must also be reduced significantly.

While companies have already been heavily focusing their efforts on reducing their carbon footprints within Scope 1 and 2, Scope 3 is remaining elusive and difficult to tackle. However, it represents one of the major pieces for carbon assessment and reduction.

Scope 3 is often classified as a blanket category of "all other emissions," but a clear and specific understanding of its assessment, impact, and levers for reduction is crucial. At each company level, a reliable reduction pathway must cover the entire value chain and include the very large and complex Scope 3 of indirect emissions.

Pharma companies contribute heavily to global carbon emissions and thus have a duty to participate in global reduction efforts. In fact, the pharma industry is responsible for 4.4% of global emissions. Additionally, if left unimpeded, the sector's carbon footprint is forecasted to triple by 2050. In 2019, the industry produced more than 48 tons of CO_2 per million dollars generated – or 55% more than the automotive industry[1].

In this point of view document, we seek to show why major pharma industry players need to consider their emissions across their full value chains to effectively reduce their Scope 3 emissions – and how they can formulate a plan for making this happen.

[1]World Economic Forum

1

LET'S START BY BRIEFLY OUTLINING WHAT EACH OF THE THREE SCOPES REPRESENT

SCOPE 1 encompasses direct emissions from sources that are owned or controlled by a company, such as emissions from on-site combustion of fossil fuels.

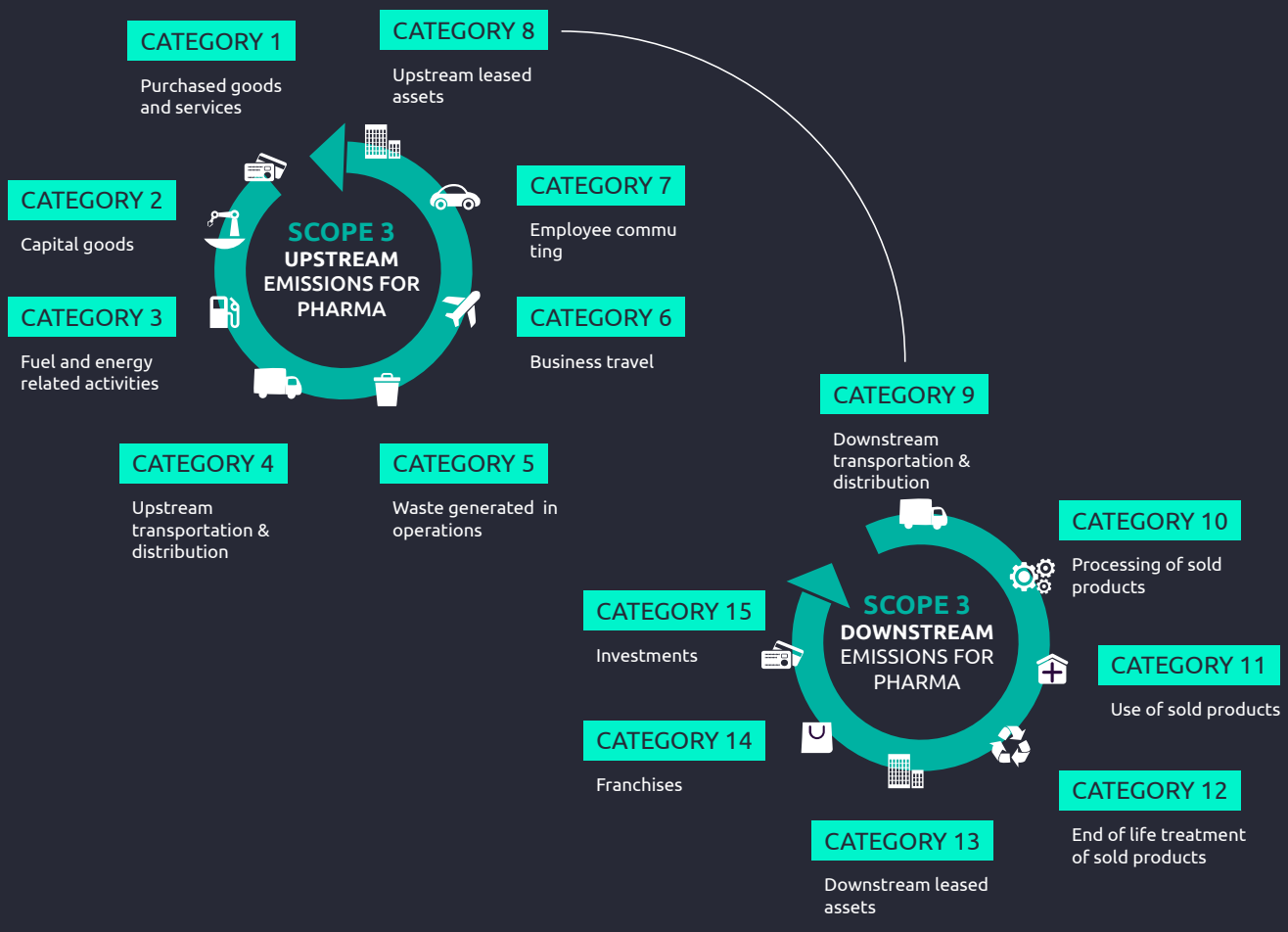
While SCOPE 2 includes indirect emissions that are produced from supplied energy consumption.

SCOPE 3 comprises indirect emissions that are not directly controlled by the company. Fig. 1 They occur all along the value chain and include emissions produced from purchased goods and services, transportation and distribution, and the use and disposal of products.

We should distinguish between the Scope 3 upstream emissions that occur earlier in the supply chain and downstream emissions that are linked to the use and disposal of products and services produced by the company.

Our focus in this document will be on upstream emissions – and more precisely – the Scope 3.01 subcategory that includes emissions stemming from a company's purchase of goods and services from its suppliers.

Figure 1 *Scope 3 upstream and downstream categories*



2

WHAT DOES SCOPE 3 REPRESENT WITHIN THE PHARMA INDUSTRY?

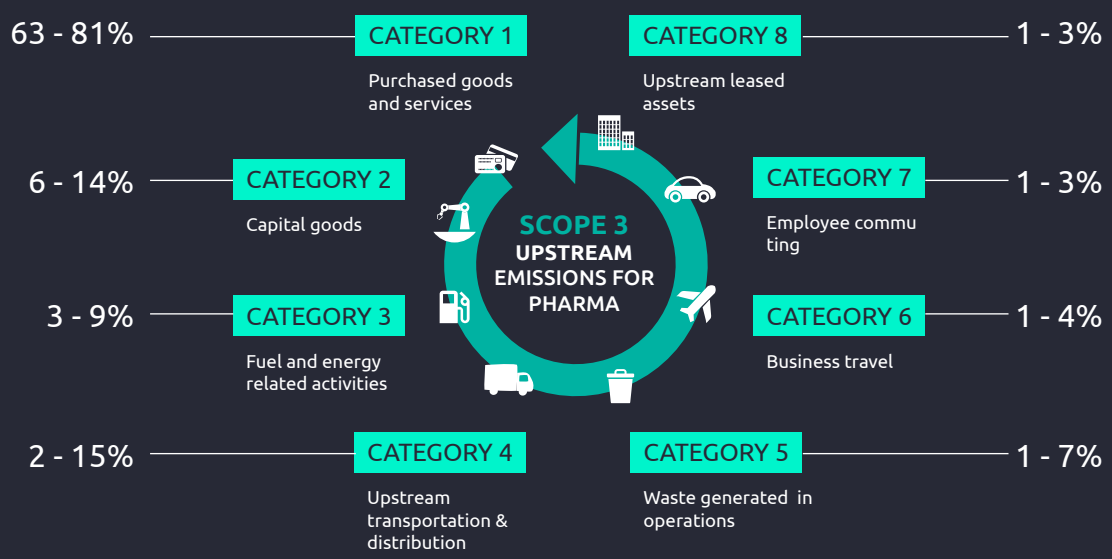
In the pharma industry, Scope 3 emissions are nearly five times higher than Scope 1 and 2 emissions combined[2]. The table opposite illustrates Scope 3 emissions within global GHG emissions.

Scope 3 within GHG emissions for different pharmaceutical companies[3]

Company	Scope 3 within global GHG emissions for 2021
Novartis	92%
Pfizer	80%
Roche	94%
Sanofi	88%

Now, let's shift our focus to upstream emissions specifically and delve into what is at stake when talking about Scope 3 emissions reduction. Figure 2 illustrates the importance of each category. The numbers below are derived from an internal benchmark. The purchased goods and services category is clearly identified as having the biggest impact. We will describe how this is impacting organizations – specifically their procurement – later in the document.

Figure 2 Categories 3.1 to 3.8 within Scope 3 upstream emissions



[2] The Carbon Impact of Biotech & Pharma, My Green Lab, 2021
[3] Company websites and reports

3

MAJOR PHARMA PLAYERS ARE ALREADY MAKING STRONG COMMITMENTS

In general, the pharma industry is following global recommendations to reduce GHG emissions by 45% by 2030 and become net zero by 2050. Many companies are trying to accomplish this by 2040 (Novartis and Pfizer, for example), and Sanofi has explicitly committed to becoming net zero across all scopes by 2045. Additionally, each of these companies have committed to becoming carbon neutral by 2030 across all scopes.

NOVARTIS

In 2022, Novartis reported a 49% reduction in its GHG emissions (Scopes 1 and 2) comparing to its 2016 baseline. Novartis is aiming for carbon neutrality for Scope 1 and 2 by 2025, and is looking to become fully carbon neutral by 2030, along with achieving net zero by 2040.

PFIZER

To accomplish its reduction goals, Pfizer is looking to decrease its GHG emissions by 95%. The company is also seeking to cut emissions from its value chain by 90% from 2019 baselines by 2040. While in the interim, it is looking to reduce GHG emissions within Scopes 1 and 2 by 46% by 2030. Residual emissions will be offset with carbon credits. As Pfizer relies on supplier engagement, the company has announced that 100% of its key suppliers will manage their own environmental impacts, including GHG emissions. While 90% of its key suppliers will set targets to reduce GHG emissions.

SANOFI

Sanofi presents its approach in two steps: Reducing emissions and then offsetting what remains. This way, the company will be able to move from 5.6 MtCO2e in 2019 to 3.7 MtCO2e by 2030 – and then to 300-600 ktCO2e by 2045. From 2030, Sanofi will be starting carbon offsetting projects. This interim objective corresponds to a 55% reduction in Scope 1 and 2 emissions – and a 30% reduction of Scope 3 emissions vs 2019. By 2045, GHG emissions will be reduced by 90%. When comparing to what the company has previously announced, Sanofi has now confirmed that effort acceleration will be ready five years ahead of its 2050 target.

ROCHE

Roche is targeting its achievement of net zero for Scope 1 and 2 by 2050 – without relying on offsetting. In 2019, the company set an ambitious 18% Scope 3 reduction target by 2025. To help in accomplishing this, in 2020, Roche developed a method for measuring Scope 3 emissions and identified about 100 strategic suppliers who are responsible for almost 32% of the company's total carbon footprint. In 2021, Roche launched a pilot in Germany that accompanies 100 suppliers in the measurement, management, and improvement their environmental performance. This initiative has been expanded with the launch of a global supplier improvement program, which will reach about 100 suppliers that produce 43% of Roche's Scope 3 emissions.

PHARMA COMPANIES COLLABORATING WITHIN ENERGIZE

Pharma companies have started to work together through the Energize supplier program, which supports their suppliers in attaining 100% adoption of renewable electricity. This will reduce suppliers' Scope 2 GHG emissions – and consequently – pharma's total Scope 3 GHG emissions. This consortium comprises 10 global pharma companies: AstraZeneca, Biogen, GSK, Johnson & Johnson, MSD, Novartis, Novo Nordisk, Pfizer, Sanofi, and Takeda. Within this program, which was designed and delivered by Schneider Electric, these companies will join in their efforts to promote Energize and individually engage suppliers to participate.

4

CHALLENGES ARISING AROUND THE ACHIEVEMENT OF PROCUREMENT AND COMPANY-WIDE COMMITMENTS

Challenges arising around the achievement of Scope 3 reduction goals – especially when it comes to procurement. As explained earlier, it is the is emissions stemming from purchased goods and services within the Scope 3 category that impact the pharma industry most. These emissions represent 61-80% of pharma company GHG emissions on average (see Figure 2). This makes procurement the cornerstone of carbon emission reduction efforts. Responsibility to reduce Scope 3.1 emissions is consequently shared between procurement, and the entire and its suppliers.

The challenges for procurement are multiple: how can this department contribute to the carbon reduction strategy of the company, how can they adapt their ways of working to achieve these new sustainable objectives, and how can they duplicate these sustainability objectives within the ecosystems of suppliers? Defining a successful carbon reduction trajectory means extensively reviewing carbon calculation – from spend-based to refined or product-based calculation – and defining levers of optimization and engaging suppliers.

LEARN MORE ABOUT THIS GAME-CHANGING FRAMEWORK: CAPGEMINI POINT OF VIEW ON SUSTAINABLE PROCUREMENT.

5

A PROVEN METHODOLOGY FOR DEFINING, CONDUCTING, AND MONITORING A SUCCESSFUL CARBON REDUCTION TRAJECTORY

Measure, assess, and monitor. These are the three key steps for tackling Scope 3 emissions.

MEASURE

Put in place the right emission calculation methods (spend based or product based).

ASSESS

Implement reduction levers that are internal (e.g., reduction of consumption), totally external (e.g., consumption of green electricity from the supplier), or transversal to the company and suppliers (e.g., pooling of transport of individual orders)

- The first lever concerns volumes: «buy/produce less» (e.g., through an eco-packaging approach)
- The second lever focuses on optimizing products and services that make it possible to «buy better» (e.g., via circular initiatives)
- The third lever corresponds to the onboarding of suppliers and emphasizing a common commitment to reduce carbon impacts (e.g., through a consortium approach)

MONITOR

Implement tools for managing successful carbon trajectories

THE THIRD LEVER: EMBARKING SUPPLIERS ON A JOURNEY OF SHARED COMMITMENT

Fostering a complete understanding of pharma supplier landscapes and the adoption of suitable digital tools

Pharmaceutical suppliers represent a wide ecosystem. Among the most purchased material by pharma companies, we find raw materials (APIs, excipients, bulk chemicals, biological products, etc.), along with consumables and packaging (primary, secondary, tertiary). When it comes to the purchasing of raw materials, a pharma company has dozens of thousands references, and this can lead to many suppliers. Suppliers can be **internal or external**. According to this, we understand that working with suppliers on ecological targets is easier if you completely manage your own supplies. This choice is a matter of company strategy and leading the market within a specific area or not.

In the case of external suppliers, there are four possibilities:

1. Small to mid-sized companies that can do 50% of their turnover with the same pharma company;
2. Other suppliers of various sizes, for example, BASF, that can work with several pharma companies;
3. Direct competitors;
4. Intermediate distributors. Indeed, pharma companies can call upon those distributors that give them access to supplies corresponding to their product specifications through catalogs, like Fisher Scientific or VWR, for example.

Option 1 is suitable for attacking GHG emissions reduction in a collaborative way – even if it is complicated for a smaller company to meet the requirements. This should be time consuming for both suppliers and pharma. For other options, a joint approach can be powerful in engaging suppliers. When pharma companies deal with big corporations that should already be concerned about carbon reduction themselves, being united as pharma consortium can only help here. Moreover, in option four, working with a pharma consortium approach can foster agreement on ecological criteria to add within supplier catalogues. This will encourage suppliers to reduce their GHG emissions and to reference – or at least prioritize them in the catalogue. This could also be a solution for galvanizing the whole ecosystem towards the same objective of planetary care.

Finally, joint efforts within this ecosystem should be supported by digital tools. Pharma company and supplier data can be gathered globally via cloud technologies, enabling the precise monitoring of carbon reduction trajectories. Another solution is based on the pooling of supplier audits on a single digital platform to provide a global view of carbon emissions. These solutions can be dedicated to a company or set up via a pharma consortium approach.

NEVERTHELESS, THE PHARMA CONSORTIUM APPROACH LINKED WITH SUPPLIER ENGAGEMENT CAN HANDLE LARGE AMOUNTS OF DATA - AND ENHANCE DATA QUALITY - WHILE FACILITATING THE RAPID REDUCTION OF SCOPE 3 GHG EMISSIONS.

7

FROM ROADMAP TO IMPLEMENTATION: HOW TO DEFINE TRAJECTORY, ANTICIPATE CHALLENGES, AND ENGAGE HEALTH AUTHORITIES AND SUPPLIERS TO MEET URGENT ECOLOGICAL GOALS

Designing a global Scope 3 carbon reduction roadmap requires a structured approach.
The first step should entail looking at different purchase categories – and consequently – different types of suppliers. An analysis assessing suppliers causing 80% of the pharma Scope 3 emissions must be completed, with detailed analysis on volumes, as a first step for defining actions. Logically enough, prioritized actions will impact pharma's biggest suppliers most: even if there is no harmonization in terms of GHG emissions from one supplier to another, the levers used to reduce them would be similar between the same type of suppliers. Once we have applied levers at the suppliers level, there is a need to dig into geographical inductors.

There are many reasons to consider suppliers locations in this exercise.
One is that the energy mix will vary immensely between two countries. Many times, we've found that energy mix is a key factor that needs to be considered, as it can cause many outcomes. Another reason is that it is foundational to consider proximity between suppliers and pharma manufacturing sites to rationalize transportation.

This global approach does not change for the pharma industry – and can be applied across industries. However, when it comes to reduction lever impact (cost, time, carbon, etc.) and accessibility (implementation), the pharma industry is unique – especially around regulations.

It is important to understand that assessing the impacts and accessibility of carbon reduction levers is mandatory when prioritizing key decisions here. Within the pharma industry, requirements surrounding regulations and quality will change the accessibility and impact of levers.

Actions to reduce Scope 3 carbon emissions will require submissions or change controls that will impact the time and ease of implementation – and the cost. We understand the importance of driving these changes here together with health authorities, as the urgency surrounding GHG emissions reduction is rapidly growing. Pharma companies need to accompany them in minimizing regulatory impacts and ensuring timely implementation. There will be no quick wins or success stories to celebrate without the engagement of health authorities.

PHARMA COMPANIES SHOULD PAVE THE WAY FOR SUPPLIERS AND HEALTH AUTHORITIES TO ACCELERATE THE ADOPTION OF GHG REDUCTION GUIDELINES AND MEET 2050 TARGETS.

To achieve the commitments made to ensuring a net-zero industry by 2050, pharma companies must tackle the decarbonization of their operations, along with their entire supply chains. As much as we have seen progress as of late, Scope 3 GHG emissions reduction is still complex, requiring dynamic collaboration.

The methodology for reducing Scope 3 emissions is clear: measure the relevant emissions, collectively assess potential actions, and monitor emissions reduction to ensure decarbonization. This involves the entire company – and most notably – procurement. As actions can be related to eco-design or circularity concepts, they can be also linked to the work between pharma and suppliers through the sharing of data and joint objectives. Actively engaging health authorities is also critical to minimize GHG reduction lever impacts and accessibility. Consequently, a solid, joint pharma approach can only accelerate the goals of the industry.

Evidently, the reduction of Scope 3 emissions is not limited to upstream emissions. Scope 3 downstream emissions are also complex to tackle – especially those related to product use and end-of-life processes. Pharma companies should consider innovative ways to incorporate a more circular approach to their activities by considering more eco-friendly design around product usage, along with more efficient collection and recycling of drugs. It is also important to prioritize the streamlining of delivery device and packaging while being aware of product reuse, and flexible delivery or redistribution.

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