

Can you see your Scope 3?

The High Tech Supply Chain's Visibility Challenge

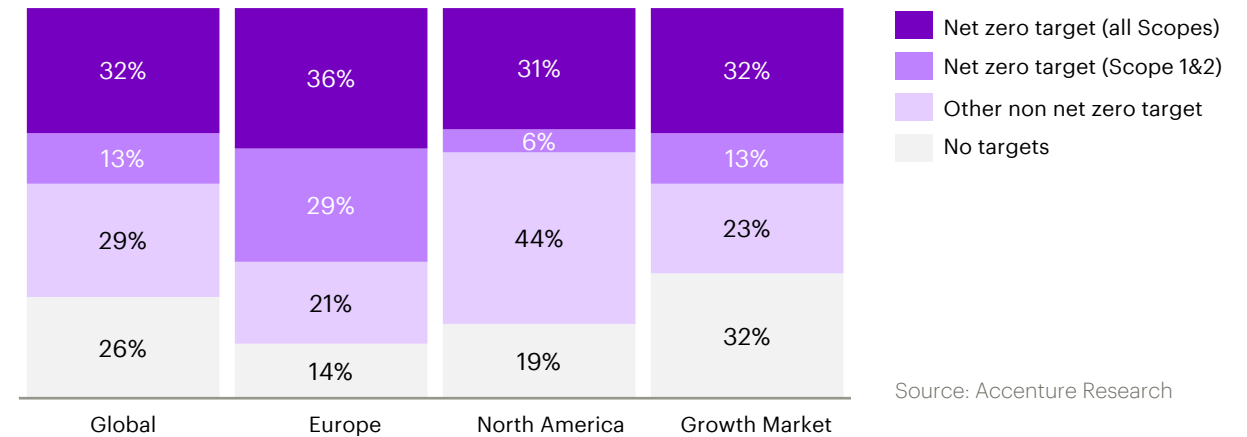


Introduction

High Tech companies globally are committed to doing their part to help fight climate change. Their sustainability and annual reports detail where they've made commitments (Figure 1). A cornerstone of these efforts is reducing emissions to reach net zero goals. While many High Tech companies have set specific targets for achieving net zero in their Scopes 1 and 2 emissions,¹ fewer are focused on addressing Scope 3 emissions,² which comprise a massive portion of the industry's overall emissions.

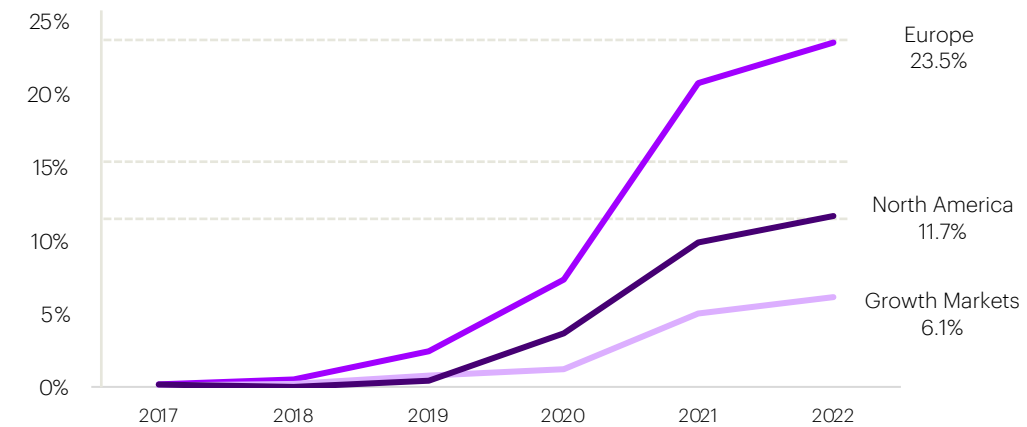
Organizations are awakening to the need to accelerate their Scope 3 strategy. Over the past six years there's been a significant uptick in the mentions of "Scope 3" during companies' earnings calls—suggesting the topic is receiving a lot more attention among the C-suite and board of directors (Figure 2). References among European companies are double their U.S. counterparts and almost four times those in growth markets.

Figure 1: Net zero target setting among global High Tech companies



Source: Accenture Research

Figure 2: Share of Global 2000 companies talking about "Scope 3" in earnings calls by regions



Statistic is based on Earning calls data of G2K companies from 2017 until 2022 Nov. The percentage is defined as the number of company mentioned "Scope 3" divided by numbers of total companies in each region and year.

Source: Accenture Research

Getting visibility to Scope 3

High Tech companies have identified the challenge and are taking action. To move the needle in Scope 3 emissions, they need to act now. In fact, according to our latest net zero report, only 32% of High Tech companies globally have taken the first step by including Scope 3 within their net zero targets.³

Accenture's new research—"Can you see your Scope 3 emissions?"⁴—reveals that many High Tech companies lack the deep visibility across the supply chain that's required to address their upstream Scope 3 emissions. In this point of view, we explore the challenges High Tech companies face and discuss some tangible steps they can take to gain visibility into the main sources of Scope 3 emissions and accelerate progress toward their net zero targets.



Understanding the magnitude of the **Scope 3** challenge

While progress in addressing Scopes 1 and 2 should be easier to make, Scope 3 emissions—which come from sources outside a company—are a much bigger challenge, especially those generated by upstream suppliers.

Accenture conducted comprehensive research specifically on upstream Scope 3 emissions.⁵ Our research excludes downstream emissions by design, and the purpose was to better understand the High Tech industry's challenges.

Our analysis found:

Scope 3 emissions in High Tech are

24x greater than the industry's Scope 1 emissions

13x greater than Scope 2 emissions

Source: Accenture Research

For comparison, the average figure across all industries is 9X.⁶ In fact, High Tech has the largest ratio of Scope 3 to Scope 1 emissions. Unlike other industries, such as Energy and Utilities, the High Tech industry is further downstream in its supply chain. Therefore, its upstream emissions are comparatively more important than industries positioned further up in their respective supply chains. And that's not all, Scope 3 emissions are substantially more difficult to first identify and then eliminate.

Most High Tech companies typically don't have visibility to every specific supplier in their supply chain beyond those they directly interact with—i.e., Tier 1 suppliers. This is a critical challenge in a global, highly complex supply chain like High Tech, which comprises multiple tiers of suppliers around the world.

A woman with glasses is shown in profile, looking at a computer screen. The screen displays various data visualizations, including a globe, a bar chart, and a circular radar chart. A purple network of glowing nodes and lines is overlaid on the scene, extending from the screen towards the woman's face. The overall lighting is dim, with green and blue hues from the screen illuminating the scene.

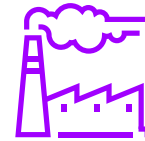
Opening up to the opportunities

Getting visibility into the source of Scope 3 emissions

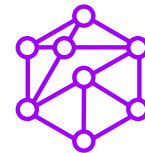
Our research provides clarity into the Scope 3 challenge. Through our analysis, we've gained supply chain network visibility beyond Tier 1, all the way up to the extraction of natural resources. We have uncovered four key insights into the main drivers of upstream emissions.



Most Scope 3 emissions are generated by Tier 2+ suppliers



Upstream emissions sources vary significantly by tier



Globally dispersed supply networks make it more difficult to get visibility to Scope 3 emissions



A supplier's location greatly impacts an industry's Scope 3 emissions

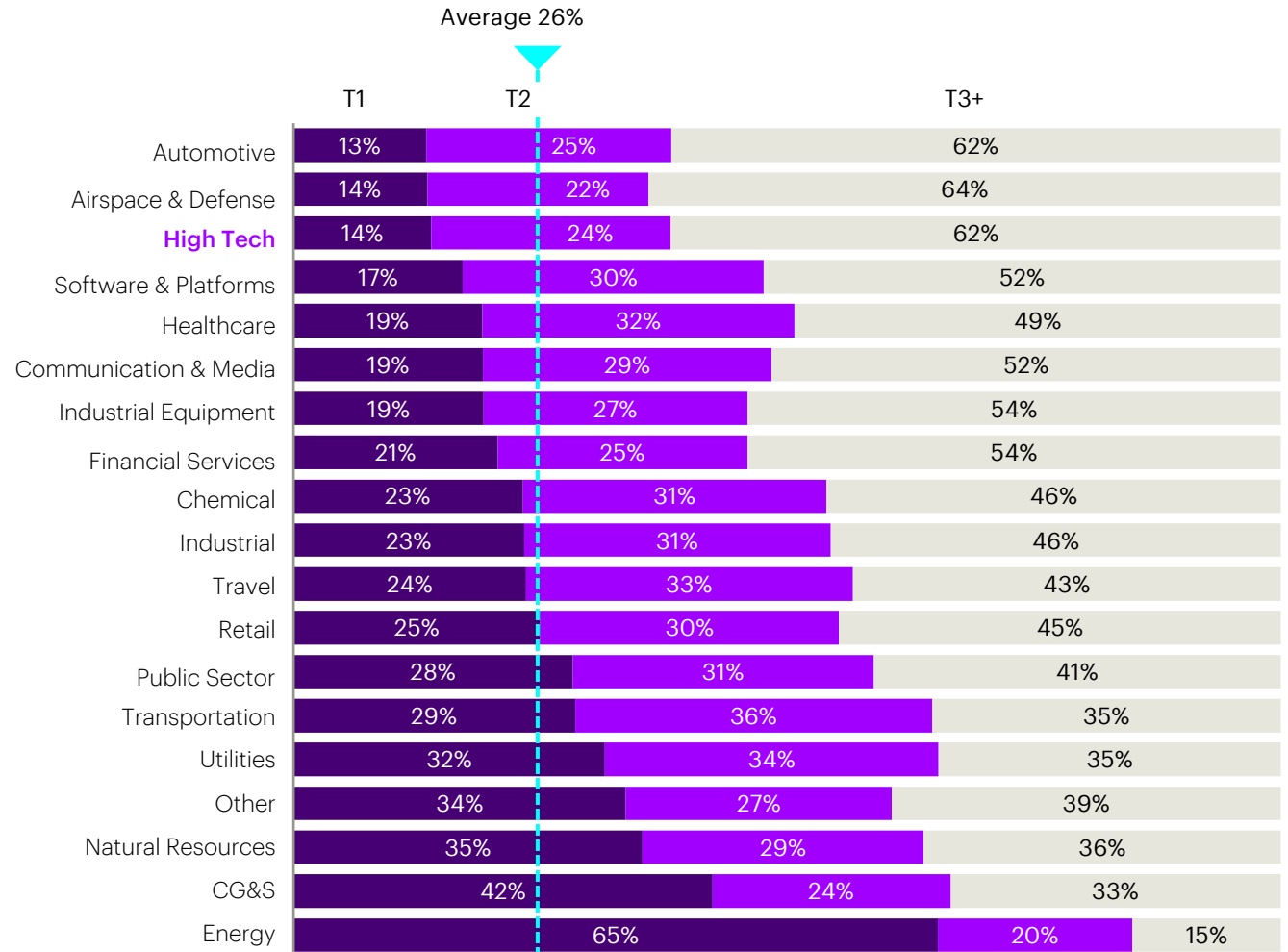
Most Scope 3 emissions are generated by Tier 2+ suppliers

On average, only 14% of High Tech companies' upstream Scope 3 emissions come from Tier 1 suppliers comparable to other downstream manufacturing industries such as Aerospace & Defense and Automotive (Figure 3). The remainder (86%) come from Tier 2+ suppliers, with nearly 62% coming from suppliers in Tier 3 and beyond which are invisible to High Tech companies.

86%

of of High Tech's upstream Scope 3 emissions come from Tiers 2, 3, 4 and Nth suppliers

Figure 3: High Tech's upstream emissions are largely concentrated beyond Tier 1



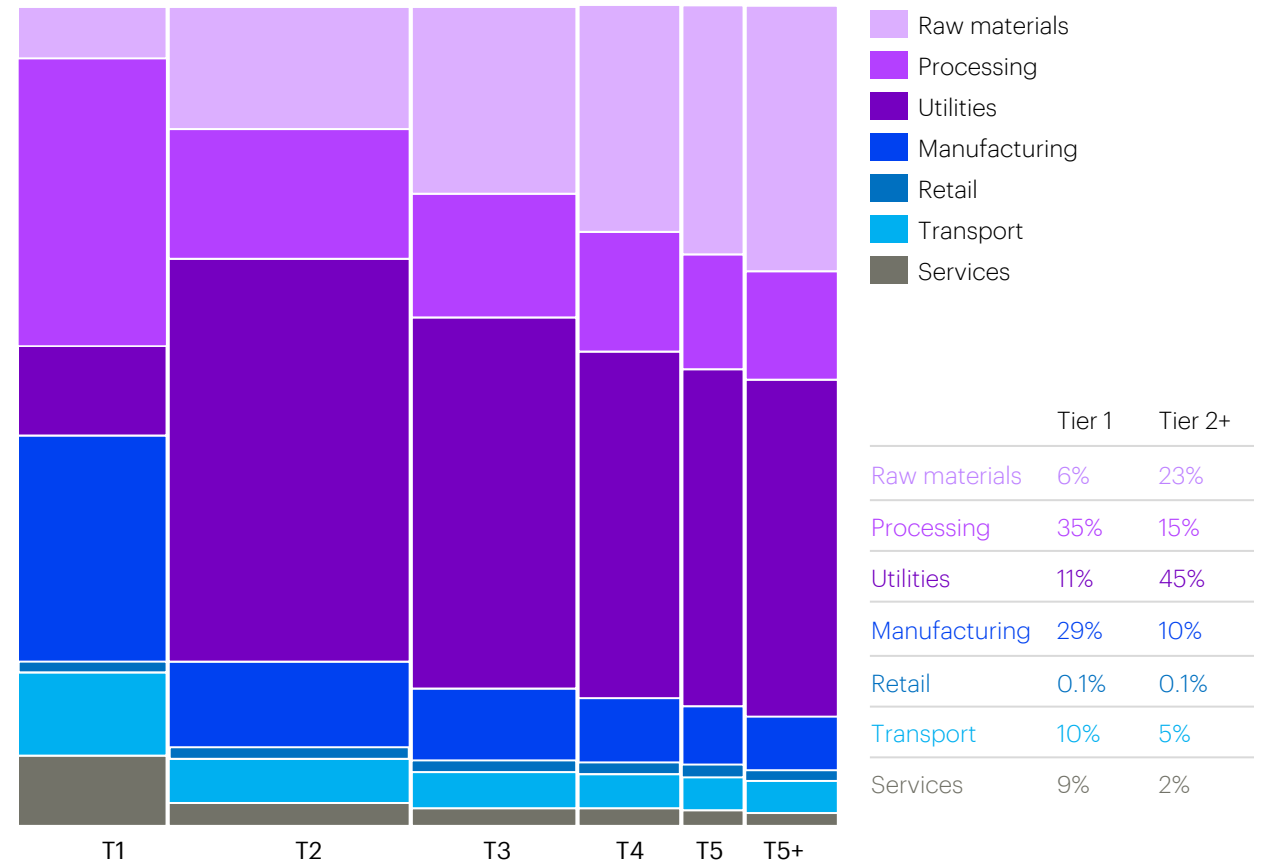
Source: Accenture Research analysis on EXIO BASE3

Upstream emissions sources vary significantly by tier

Our research found that most of the emissions beyond High Tech companies' Tier 1 suppliers come from utilities. In the United States, for example, they represent 45%. This is not surprising, given how power- and natural-resource-intensive these businesses are.

Also, sources of emissions vary from tier to tier. As Figure 4 shows, processing and manufacturing are critical emissions sources within Tier 1 and Tier 2 suppliers, and raw materials (e.g., energy and mineral related) emissions increase as they move upstream in the supply chain.

Figure 4: Upstream emissions by tier for the United States High Tech industry

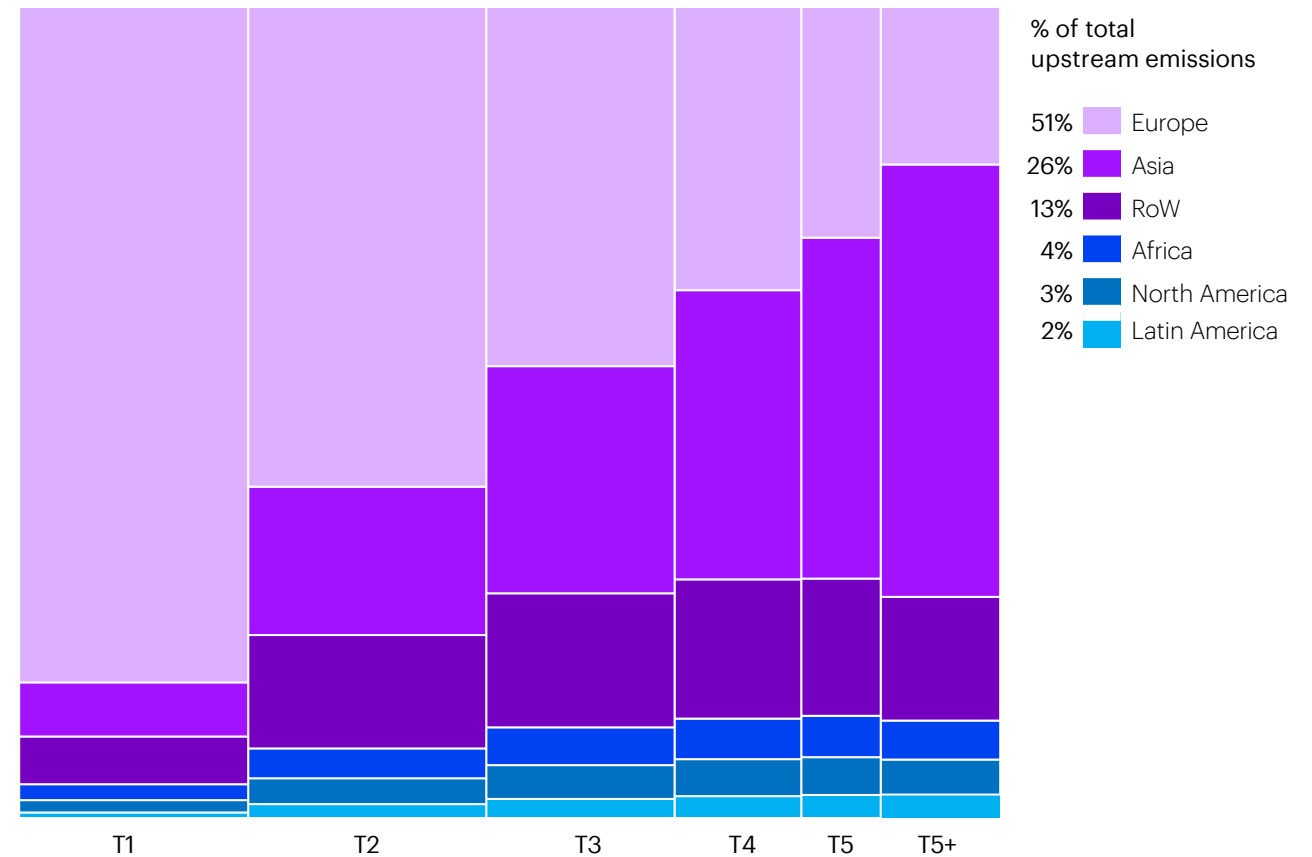


Source: Accenture Research

Globally dispersed supply networks make it more difficult to get visibility to Scope 3 emissions

To add more complexity, we find that in the European region, for example, most of the upstream emissions overall are generated in that industry's home region (Figure 5). But that's largely influenced by Tiers 1 and 2, where Europe accounts for a large majority of total emissions. As we move further upstream, to Tier 3 and beyond, Asia assumes a larger role in supplying key High Tech inputs and raw materials (e.g., chemicals and metals)—becoming a much more prominent source of emissions. With a larger proportion of further upstream emissions coming from suppliers abroad, companies will find it more difficult to gain the required visibility to trace and audit those emissions.

Figure 5: Upstream emissions by region for the Europe High Tech industry

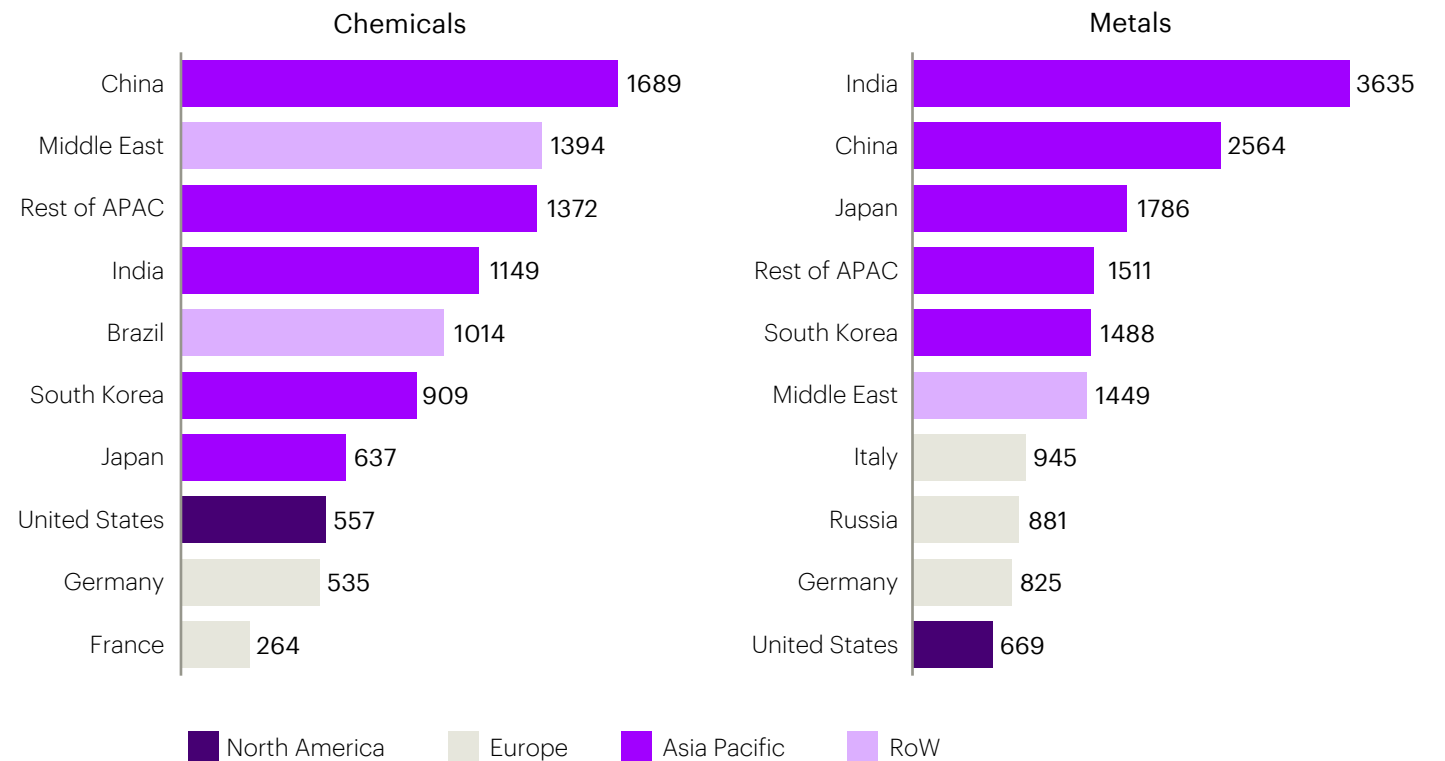


Source: Accenture Research

A supplier's location greatly impacts an industry's scope 3 emissions

Our research found that a supplier's location has a big impact on the upstream emissions of the industry. In Figure 6 illustrates, there's considerable difference in the upstream emissions of suppliers coming from different regions of the Chemical and Metal industry, two key supplying industries to the High Tech industry. Chemical suppliers in China could be 6X more carbon intensive than suppliers from France, for example. Metals suppliers in India could be 5X more carbon intensive than those in the United States.

Figure 6: Emission intensity (Scope 1, Scope 2 & Upstream Scope 3, in tons CO2e per \$ million) of top 10 regions for Chemical and Metal industries



Source: Accenture Research analysis on EXIO BASE3

Addressing the Scope 3 challenge

Can you see your Scope 3?

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Gaining visibility into Scope 3 emissions helps companies focus on the biggest emission hot spots

High Tech companies need to focus on gaining visibility by mapping suppliers at the different tiers, and then agreeing on the definitions used to calculate emissions. This will enable companies to effectively work with suppliers that contribute the most CO2 emissions to reduce their overall emissions. High Tech companies need to give suppliers a target to reach and then monitor their progress—with the explicit understanding that companies could decide to move business away from these suppliers if they fail to deliver.

High Tech companies should also carefully consider design choices (for example, redesign for sustainability), such as replacing raw materials with lower footprint materials; offer to co-invest in renewable energy; and consider recycling or re-use at certain levels.

High Tech companies should consider supplier location as they rethink their network strategies

It is important for companies to understand their exposure to the emissions profiles of different countries across the supplier base.

As companies rethink their supply chain network design and explore onshoring suppliers as an option, they should factor geography into supplier-selection strategies. Moving the supplier network to more economically developed countries could be an opportunity for a company to reduce its carbon footprint because it's likely to have access to better technology and more renewable energy in such locales. Conversely, by gaining visibility, and addressing supply chain hot spots, companies can reduce their emissions profiles across countries as well.





Creating a supplier collaboration program is key to reducing Scope 3 emissions

Creating a supplier collaboration program is critical to success and should address the following areas:

- Establishing a baseline and standards for reporting.
- Setting emissions reduction targets.
- Establishing key roles and accountability.
- Communicating progress on an ongoing basis.

Companies should initially focus on Tier 1 suppliers—that’s the easiest place to begin generating a significant impact. High Tech companies should consider playing an orchestration role across their remaining tiers, helping Tier 1 suppliers build momentum and drive progress across Tiers 2 and 3.

Progress is being made already in High Tech

Here are some examples of High Tech companies taking action to reduce Scope 3 emissions.

Cisco

Cisco has committed to reach net zero GHG emissions across its value chain by 2040 –by reducing the company’s absolute Scopes 1, 2, and 3 emissions by 90% compared to fiscal 2019 and neutralizing any remaining emissions by removing an equal amount from the atmosphere.⁷

Johnson Controls

Johnson Controls has targeted a 16% Scope 3 reduction by 2030 and 100 percent renewable electricity usage globally by 2040 and is also using data and analytics to give customers more visibility into how to reduce emissions.⁸

Toshiba

Toshiba is aiming to achieve carbon neutrality throughout its entire value chain by fiscal 2050. It has set a preliminary goal for fiscal 2030 of cutting greenhouse gas emissions by 70% from fiscal 2019 levels.⁹

Ericsson

Ericsson has set specific supply chain client actions as part of their sustainability agenda. For example, they have approximately 350 high-emitting and strategic suppliers representing an estimated 90% of Ericsson’s supply chain emissions. The company set its own 1, 5-degree pathway-aligned emission reduction targets by 2025. Ericsson’s climate targets are approved by the Science Based Targets Initiative (SBTi).¹⁰

Lenovo

Lenovo previously committed to reaching net zero emissions across its value chain by 2050. Earlier this year, the company became the first PC and smartphone maker with a (SBTi).¹¹ Lenovo is also one of only 153 Technology Hardware and Equipment companies globally that have set science-based targets or have committed to developing targets per the SBTi.¹²

Nokia

Nokia wants to become the leader in energy efficiency and circular practices. The company set an ambitious science-based target to reduce Scopes 1, 2, and 3 greenhouse gas emissions by 50% between 2019 and 2030. It also set a target of 100% renewable electricity in its facilities by 2025, both of which are stepping stones on the path to net zero.¹³

There's still much work to be done for High Tech companies to reach Net Zero.

High Tech companies need to turn their ambition into stronger action to accelerate their sustainability progress for customers, employees, and shareholders. The steps companies take today will generate significant future benefits, including:

- Helping to tackle climate change
- Boosting energy efficiency and reducing overall operating costs by switching to renewable electricity
- Improving brand image among customers who increasingly consider a company's environmental credentials when making purchases
- Creating greater environmental, social, and governance (ESG) credibility among investors

Getting started: Here are some near-term actions companies can take to address Scope 3

01

Conduct emission hot spot mapping along the entire supply chain: To focus on what's most important, High Tech companies should perform a detailed analysis of their supplier base to determine the biggest sources of emissions. The insights from such an analysis provides the foundation for a road map and action plan to address the areas of most significant impact—and where companies can unlock the greatest value.

02

Include Scope 3 emissions targets as part of sustainability goals: Scope 3 represents the biggest opportunity for reducing emissions. Together with suppliers, High Tech companies should collaborate to establish clear metrics, reporting and accountabilities for achieving Scope 3 targets.

03

Leverage global value chain re-balancing as an opportunity to recalibrate: As they strive to reduce concentration risk in an increasingly unstable world, High Tech companies are onshoring product manufacturing to enhance resilience and transparency and increase diversification. In doing so, they should add sustainability as a key criteria in evaluating where to move, or where to build new assets and facilities.

04

Investigate end-to-end reuse, repair or refurbish opportunities across the value chain: Two such opportunities High Tech companies should consider are implementing a take-back program to promote (and pay consumers for) recycling of consumer electronic devices (thus, promoting greater circularity), and enabling customers to fix the devices they own to extend their productive lives.

05

Work with R&D on boosting products' sustainability: One way High Tech companies can create more sustainable products by offering As-A-service options and device subscriptions to reduce energy consumption and maintain control over hardware throughout its life cycle. Another is to design new products, services and packaging to be sustainable from the outset—for example, by incorporating both recycled and more recyclable materials. High Tech companies should set agreements with renewable electricity providers that will enable suppliers to consume 100 percent renewable electricity in their production simply by signing a new electricity contract.

A woman with long, light-colored hair is seen from behind, looking out over a landscape of rolling hills and a wind farm. The sun is low on the horizon, creating a warm, golden glow. In the foreground, a network of glowing purple lines and dots is overlaid on the scene, suggesting a digital or data-driven theme. The word "Conclusion" is written in large, white, sans-serif font across the center of the image.

Conclusion

Accelerating progress toward a more sustainable world

As the drive to sustainability grows more urgent with each passing year, High Tech companies are intensifying their efforts to achieve their targets. In this journey, emissions are proving to be one of the biggest stumbling blocks.

With its global, highly complex supply chains, the High Tech industry may find its ability to achieve its sustainability goals impeded by companies' current manufacturing, supply chain, and product end-of-life practices. In particular, it seems the industry will miss its net zero goals largely because companies lack visibility into their supply chains and associated metrics. To meet their goals, High Tech companies need to act. They should fast-track their path to a data-powered digital core, which means pulling data, AI, and technology into every part of the business to create a truly "intelligent operation."

The challenge is enormous, but not insurmountable. With the right combination of visibility, actions, buy-in, and collaboration, High Tech companies can accelerate their progress to reach their net zero goals—across Scopes 1, 2, and 3—and create businesses that can help put the planet on the road to a more-sustainable future.



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Research methodology

Accenture Research built a data model to approximate upstream greenhouse gas emissions of different industries using a time series of environmentally extended multi-regional input-output tables. The dataset includes 163 industries and 49 geographic areas (44 countries and five rest of world regions).

References

1. [Greenhouse Gases at EPA](#), U.S. Environmental Protection Agency, retrieved March 2023
According to the U.S. Environmental Protection Agency, Scope 1 emissions are direct greenhouse gas (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.
2. [Greenhouse Gases at EPA](#), U.S. Environmental Protection Agency, retrieved March 2023
The U.S. Environmental Protection Agency defines Scope 3 emissions as the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts in its value chain. Scope 3 emissions include all sources not within an organization's Scopes 1 and 2 boundaries; those that are generated upstream by suppliers in the production and movement of components and raw materials that go into the production of finished goods; and those generated downstream, involving an organization's customers, and including the goods a customer purchases, transportation and distribution of products, and end-of-life treatment of sold products.
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