



# PACT

PARTNERSHIP FOR  
CARBON TRANSPARENCY

Scope 3 Problem Solving White Paper

# Exploring Underlying Barriers to Tech-Enabled PCF Data Calculation and Exchange

Powered by



World Business  
Council  
for Sustainable  
Development



# Collaborators

WBCSD would like to thank the following companies and organizations that have supported and contributed to the development of this White Paper:





## Introduction

Achieving carbon transparency across value chains requires the seamless exchange of Product Carbon Footprint (PCF) data among supply chain partners. The Partnership for Carbon Transparency's (PACT) vision is to facilitate this exchange by promoting the use of interoperable technology solutions through the [PACT Network](#): an open, global network enabling the secure, peer-to-peer exchange of accurate, primary, and verified product emissions data, calculated following the [PACT Methodology](#).

Since the public release of the [PACT Technical Specifications V2](#) in February 2023, more than 40 solution providers across 14 countries globally have implemented the PACT Technical Specifications and become "PACT Conformant", thus able to exchange PCF data on the PACT Network. These solutions can now be used by companies and their suppliers to calculate and exchange standardized PCF data.





## Problem statement

PACT has seen significant growth in its community, with a 177% increase in participating companies in the PACT Implementation Program<sup>1</sup> scaling to 2,500 companies over the past two years. In 2024, participating companies exchanged 4,500 PCFs—an 805% increase from 2023.

Despite this momentum and the growing number of solutions within the PACT Network, the rise in calculated and exchanged PCFs has not been matched by a corresponding increase in the use of interoperable solutions for these exchanges. In 2024, only two solutions were actively used within

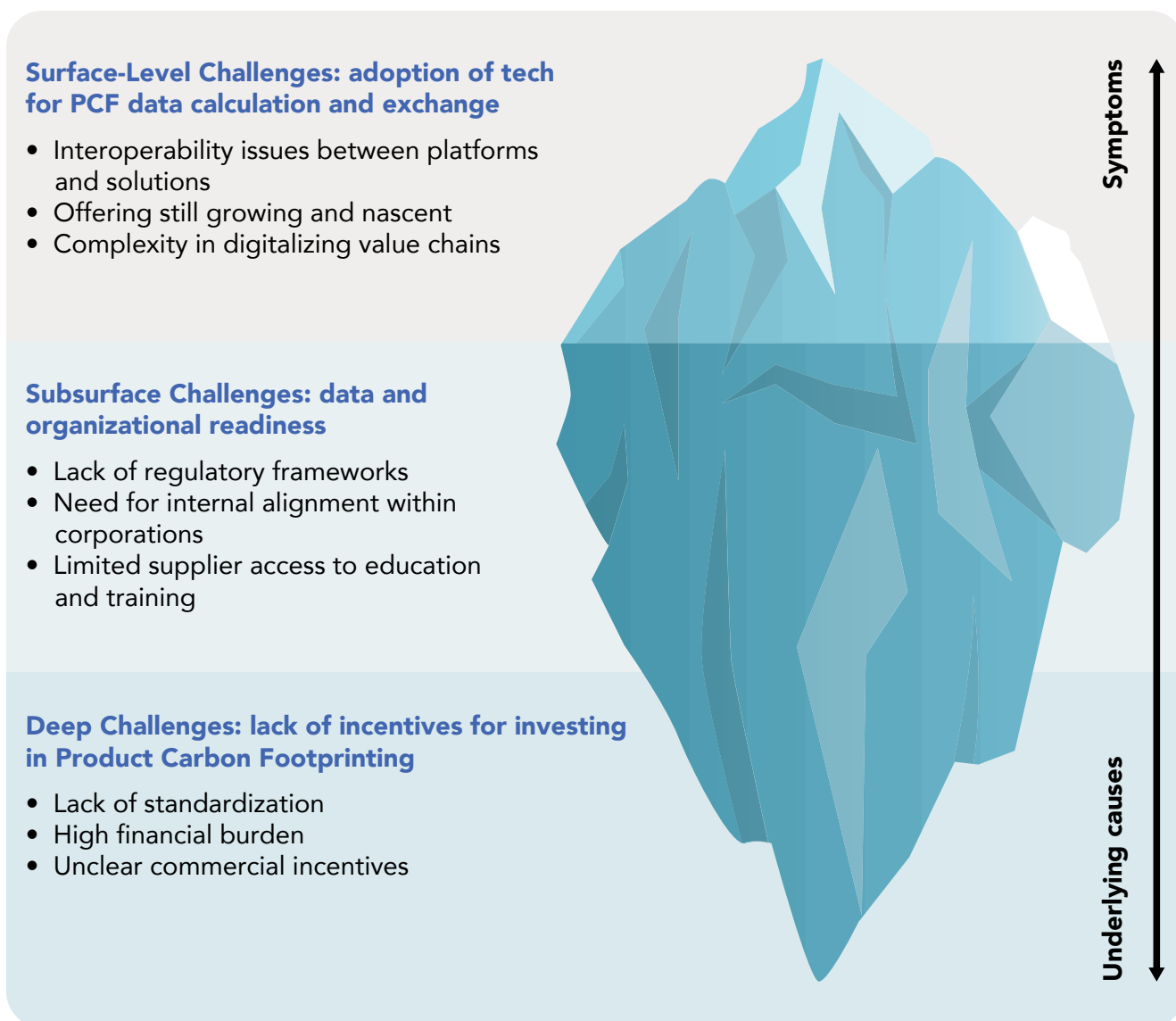
the Implementation Program, and most companies continued to rely on spreadsheets, emails, or custom-built transition tools such as web forms to calculate and exchange PCF data. However, whilst observed adoption is still low, there is clearly a growing **industry commitment to leverage digital solutions for PCF data exchange**. A recent study conducted by the Scope 3 Peer Group found that **out of 175 corporations, 78% already use a digital solution for Scope 3 emissions tracking, while 55% are actively searching for one—whether they already use a tool or not. Only 3% reported having no plans to adopt such a solution<sup>2</sup>.**

# Approach

To explore adoption barriers, PACT held a series of workshops convening 30 corporate stakeholders and 7 software solution providers. Through in-depth discussions, it became evident that the primary challenge is not technological but rather the availability of reliable data and the lack of financial and non-financial incentives for suppliers to invest in PCF accounting and exchange solutions.

This document presents our findings and identifies the underlying root causes for these challenges, emphasizing the need for collective action. To conceptualize our insights, we have employed the iceberg metaphor, illustrating how surface-level challenges related to technology adoption are symptoms of deeper structural and economic barriers.

**Figure 1: Summary of Underlying Barriers to Tech-Enabled PCF Data Calculation and Exchange**



## Surface-Level Challenges:

### Limited adoption of PCF data exchange technology

- **Interoperability issues between platforms:** Not all existing digital solutions are interoperable, creating data silos and preventing smooth peer-to-peer data exchange. Suppliers often struggle with inconsistent data formats and differing platform requirements, leading to inefficiencies and delays.
- **Offering still nascent:** The PCF landscape and market for solutions is still maturing, resulting in relatively minimal overall investment (Venture Capital and paying customers) in the Scope 3 software market. This leads to offerings that may not fully meet corporate needs, as well as corporates uncertain around their specific requirements. This trend is particularly evident for smaller companies, which often seek simple, cost-effective tools that may not yet be widely available or fully developed to address their specific needs.
- **Complexity regarding digital transformation of value chains:** Digital transformation is complex and while many companies recognize the benefits of digital solutions, the complexity of integration can sometimes be underestimated, leading to challenges in scaling adoption effectively. This includes deployment strategies within supply chains and associated costs.

## Subsurface Challenges:

### Barriers related to data and organizational readiness

- **Lack of regulatory frameworks:** While regulatory requirements are evolving, they remain inconsistent across regions and industries. The absence of mandatory standards means suppliers often lack the motivation to prioritize PCF data collection and exchange. This specific challenge was a key driver behind the creation of PACT and the development of the PACT Methodology.
- **Need for internal alignment within corporations:** Companies often struggle with defining clear business requirements for PCF data exchange. Different departments (procurement, sustainability, IT) may have conflicting priorities, leading to inefficiencies and unclear digital transformation strategies.
- **Limited supplier access to education and training:** Many suppliers, particularly small and midsize enterprises, lack the knowledge or resources to effectively engage and calculate PCFs. Without structured training and capacity-building programs, adoption remains challenging.

## Deep Challenges (Root Causes):

### Lack of incentivization mechanisms for investments in Product Carbon Footprinting

- **Need for standardization:** The absence of universally accepted methodologies results in fragmented approaches to PCF calculation. Variability in emission factors, lifecycle assessment (LCA) boundaries, and industry-specific metrics make meaningful comparison and exchange difficult.
- **High financial burden:** Conducting accurate PCF assessments requires significant investment in data collection and manipulation, software tools, and verification processes. Small and medium-sized suppliers, in particular, struggle with the upfront costs, making widespread adoption unfeasible.
- **Unclear commercial incentives:** There is no clear financial return on investment for suppliers to invest in PCF calculations. Without procurement-driven pressure, regulatory mandates, or market-based incentives, suppliers see little reason to allocate resources to PCF data generation.



# Conclusion and Call to Action

Significant progress has been made in expanding the adoption of digital solutions for PCF data calculation and exchange, but for this adoption to deliver meaningful impact and drive lasting, scalable change, value chains must also establish proper incentivization mechanisms. Without well-defined incentives, suppliers—especially smaller ones—have little reason to allocate resources toward PCF data generation.

Potential incentives to drive supplier engagement include financial support for data collection efforts, preferential procurement policies favoring suppliers with robust PCF reporting, and regulatory frameworks that provide tax benefits or compliance advantages for early adopters<sup>3</sup>. These incentives must also be clearly communicated to suppliers so they can accurately assess the opportunity.

The findings reported in this paper provide a foundation for industry stakeholders, regulatory bodies, and technology providers to develop targeted interventions to overcome PCF data challenges. As companies increasingly integrate digital PCF solutions, ensuring the right incentives are in place will be critical to sustaining progress. A key priority for the community should be addressing the fundamental question: Who pays for the investments needed to generate critical PCF data?

We invite stakeholders to collaborate with PACT in addressing these issues. PACT is committed to working alongside stakeholders to tackle these challenges to advance carbon transparency across value chains and accelerate decarbonization efforts. We invite stakeholders to collaborate with PACT in addressing these issues.

**Interested in joining efforts? Reach out to [pact@wbcsd.org](mailto:pact@wbcsd.org).**

# Endnotes

- 1 A program PACT runs supporting organizations globally to engage their suppliers to calculate and exchange standardized PCFs.
- 2 Scope 3 Peer Group. The Scope 3 Tools Review 2024-2025, Dec 2024.
- 3 For more information on incentivization for supplier decarbonization, you can refer to The Climate Drive's Action Library: Create financial incentives for suppliers, Build partnerships through alliances and co-investments



## Disclaimer

This paper is released by the Partnership for Carbon Transparency at WBCSD, which is responsible for final conclusions and recommendations. Like other WBCSD-authored papers, it incorporates contributions from WBCSD staff, experts from member organizations, and other climate ecosystem players. Use of member company logos indicates participation and assistance in developing this guidance document and does not imply endorsement of all concepts presented or a commitment to apply the guidance.

## About WBCSD

The World Business Council for Sustainable Development (WBCSD) is a global community of over 225 of the world's leading businesses driving systems transformation for a better world in which 9+ billion people can live well, within planetary boundaries, by mid-century. Together, we transform the systems we work in to limit the impact of the climate crisis, restore nature and tackle inequality.

We accelerate value chain transformation across key sectors and reshape the financial system to reward sustainable leadership and action through a lower cost of capital. Through the exchange of best practices, improving performance, accessing education, forming partnerships, and shaping the policy agenda, we drive progress in businesses and sharpen the accountability of their performance.

Copyright © WBCSD, March 2025

[www.wbcsd.org](http://www.wbcsd.org)

Follow us on [Twitter](#) and [LinkedIn](#).

## About PACT

PACT offers a streamlined methodology for calculating and exchanging product carbon footprints (PCFs) to promote decarbonization across value chains.

Powered by the World Business Council for Sustainable Development (WBCSD), PACT harmonizes the PCF calculation and exchange through a universal methodology, technical specifications for PCF exchange, and an ecosystem enriched by a network of committed, impact-driven companies.

With participation from more than 150 stakeholders, including businesses, policymakers, and standard setters, PACT collaborates with over 11 industry-specific initiatives. More than 2,500 companies have adopted PACT, striving to accelerate supply chain transparency and foster decarbonization within the private sector, driving sustainable and enduring business practices.

If you would like to find out more about PACT, please contact:

[pact@wbcsd.org](mailto:pact@wbcsd.org)

[www.carbon-transparency.org](http://www.carbon-transparency.org)

Connect with us on [LinkedIn](#).





# PACT

PARTNERSHIP FOR  
CARBON TRANSPARENCY

Powered by

