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Sustainability Blog

By PwC Deutschland | 27 May 2026

Scope 3 Greenhouse Gas Emissions in Private Equity Portfolios and Holding Companies: It is Not as Hard as You Think

How fund managers and holding companies can close the Scope 3 data gap easier than expected – with data they already have

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Your stakeholders are asking for Scope 3 data – from investors and shareholders to regulators and customers. But how do you collect and monitor Scope 3 greenhouse gas (GHG) emissions across a heterogeneous company portfolio? The reality is that companies often lack supplier transparency, reliable data, and the capacity for detailed supply chain reporting. The good news: there is a pragmatic approach that works with data the companies already have.

1. Commercial Advantages, Investor Pressure and Regulation: Scope 3 Greenhouse Gas Emissions are relevant

Scope 3 greenhouse gas (GHG) emissions are no longer a "nice-to-have" for fund managers and holding companies. Three key drivers are making this a strategic priority – and they are mutually reinforcing:

Commercial advantages result from systematically capturing Scope 3 GHG emissions. **Financing benefits** can be achieved through sustainability?linked loans and ESG?linked credit facilities, which offer interest rate reductions when GHG reduction targets are met; without a reliable emissions baseline and Scope 3 data, access to these instruments remains out of reach. **Valuations and transactions** are increasingly affected, as buyers – whether strategic investors, other PE funds, or acquirers of holding company subsidiaries – expect reliable emissions data during due diligence, and companies with a complete GHG inventory including Scope 3 are more attractive because buyers can better assess transition risks. **Risk management** is strengthened through Scope 3 transparency, which protects against transition risks such as rising CO? prices, for example through the EU Emissions Trading System (EU ETS), and tightening environmental regulations, as those who know the emissions hotspots across their portfolio or group of companies can take proactive action.

Investor and stakeholder pressure is increasing for PE funds, with comparable pressure applying to holding companies. Net-zero commitments and Paris-aligned climate targets by LPs in private equity and shareholders of holding companies require transparency across asset classes and subsidiaries. Due diligence and reporting requirements are increasingly focused on quantitative Scope 1, 2, and 3 emissions metrics, taking the form of LP due diligence and side?letter requirements in private equity and customer requests at holding company level, with those unable to deliver falling behind. **Competitive differentiation** is increasingly driven by ESG data availability, as the ability to provide Scope 3 data can influence investment decisions and capital allocation, while also strengthening positioning towards lenders, potential acquirers, and customers.

Regulatory requirements under the EU framework are tightening, with direct implications for reporting by fund managers and holding companies. **SFDR** disclosure requirements specify obligations for Article 8 and Article 9 funds, with Principal Adverse Impact (PAI) indicators #1, #2, and #3 requiring – where material – the disclosure of GHG emissions, including Scope 3, at portfolio level. Without reliable data from portfolio companies, full disclosure of these indicators is not possible. **CSRD** reporting requirements introduce mandatory sustainability reporting for large companies (? 1,000 employees and > EUR 450m annual net turnover), including disclosure of Scope 3 GHG emissions under ESRS E1, and may also apply at group level to holding companies or funds preparing consolidated financial statements. Even where portfolio

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companies are not directly in scope, they are embedded in the value chains of CSRD?liable customers, which must report their own Scope 3 GHG emissions and therefore increasingly request emissions data from suppliers. Where such data cannot be provided, portfolio companies face growing risks, including competitive disadvantages, exclusion from preferred supplier lists, or loss of customer relationships.

2. The Challenge – The Data Problem in Your Companies' Supply Chains

The drivers are clear – but in practice, many fund managers and holding companies face a fundamental problem: where does the data come from? Whether you manage a PE portfolio or a holding company with multiple subsidiaries, the challenge is the same: in many industries, the majority of GHG emissions do not come from a company's own operations (Scope 1 and 2), but from Scope 3 upstream – particularly from the procurement of products, services, and infrastructure investments. This means: anyone who wants to address Scope 3 must look into the supply chain. However, this is precisely where the problem lies – especially for PE portfolios and holding companies with mid-market subsidiaries.

2.1 Mid-Market Companies Typically Lack Supply Chain Emissions Data

Portfolio companies and subsidiaries are often mid-market firms – hidden champions with strong market positions but without a dedicated sustainability department. GHG reporting is new territory for many. While Scope 1 (direct combustion) and Scope 2 (electricity, heating) data is relatively straightforward to collect, Scope 3 data is simply missing.

There are several reasons for this:

Lack of Supplier Transparency: Emissions data at Tier 1 level (direct suppliers) is rarely available and virtually never at Tier 2 or Tier 3 level. Mid-market supply chains have often evolved organically, are complex, and were established long before sustainability reporting grew in awareness and relevance.

Unreliable Data Quality: Even when supplier questionnaires are sent out, response rates are patchy. The data that comes back is frequently inconsistent, not comparable, or methodologically questionable. A reliable Scope 3 inventory cannot be built on this basis.

Resource Constraints: Mid-market companies rarely have the capacity to systematically survey hundreds of suppliers, validate data, and convert it into a GHG protocol compliant inventory. Day-to-day business takes priority.

2.2 The Traditional Bottom-Up Approach Reaches Its Limits

The traditional approach to Scope 3 assessment – analysing each product category individually, surveying suppliers, researching specific emission factors – is extremely labour-intensive. For a single company, this can take weeks or months.

For a PE portfolio or holding company with ten, twenty, or more subsidiaries, this bottom-up approach is simply not scalable. The effort is disproportionate to the outcome – and the results are often not even comparable, as each portfolio company uses different methods and system boundaries.

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What Private Equity Funds and Holding Companies Need

You need an approach that:

- works with existing data (rather than waiting for supplier responses),
- scales quickly across the entire portfolio,
- is methodologically consistent (comparable results),
- is regulatorily robust (GHG Protocol-compliant, ready for SFDR or CSRD reporting requirements).

This is exactly where a top-down approach comes in – a solution that meets these requirements for PE funds and holding companies alike.

3. The Solution – From Procurement Data to Scope 3 Footprint

An example of such a top-down approach that can be applied globally and across all industry sectors is the ESCHER (Efficient Supply Chain Emissions Reporting) Tool – an analytical model that calculates Scope 3 GHG emissions based on procurement data.

3.1 The Top-Down Approach: Leveraging Existing Procurement Data

ESCHER uses procurement data from the financial accounting systems of your portfolio companies or subsidiaries: What procurement items exist? Which countries do the items originate from, and which sectors are they assigned to? Based on this information – which is typically already available within the company – the associated Scope 3 GHG emissions can be calculated.

The focus is deliberately on Scope 3 Category 1 (Purchased Goods and Services), Category 2 (Capital Goods), and Category 4 (Transport & Distribution) – these categories account for the majority of Scope 3 GHG emissions in many industries. By capturing these categories, the bulk of the Scope 3 footprint is covered – precisely where the largest data gaps traditionally exist.

3.2 The Methodology: Scientifically Robust and Internationally Recognised

ESCHER, an established EEIO (Environmentally Extended Input-Output) model, is based on the **GTAP database** (Global Trade Analysis Project) of Purdue University with 31 international partners (including the WTO, World Bank, OECD, and European Commission). The latest GTAP update (February 2026, base year 2023) maps global supply chain interdependencies and provides over 10,500 specific emission factors for 163 countries and 65 sectors.

The emission factors are calculated per monetary unit for each sector and country of origin – and take into account the entire upstream value chain (Tier 1, 2, 3, and all further tiers). The approach is compliant with the **GHG Protocol Scope 3 Accounting and Reporting Standard** and corresponds to the spend-based method, which the GHG Protocol explicitly recognises as a valid calculation approach. The results can be used directly for SFDR and CSRD reporting.

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3.3 The Process: Three Steps to a Scope 3 Footprint

Implementation follows three clearly defined steps: data input, modelling, and validation and preparation.

Step 1 – Data Input: Portfolio or holding companies provide procurement data from their financial accounting systems. The minimum requirement is the assignment of procurement items to sectors. Additional information such as product category, business unit, or supplier details enables a more granular analysis.

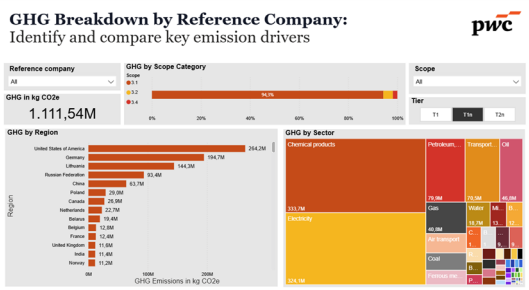
Step 2 – Modelling: Based on this procurement data, the model calculates the Scope 3 GHG emissions. The procurement data is linked with the country- and sector-specific emission factors from the GTAP database.

Step 3 – Validation and Preparation: The results are plausibility-checked, reviewed for consistency, and prepared in a format that you can use directly for your reporting.

Revenue Scaling: For organisations with many companies, it has proven practical to group those with similar value chains into clusters (buckets). For each bucket, a reference company is analysed and the emissions of the remaining companies are extrapolated based on their revenue. This means that when the composition of your portfolio or group changes, you do not need to trigger a new calculation.

3.4 The Result: Portfolio-Wide Scope 3 Transparency

With ESCHER, the top-down approach enables full Scope 3 transparency: reliable emissions data suitable for regulatory reporting (SFDR, CSRD), visibility into emissions hotspots by sector and country, and interactive dashboards for detailed analysis (see Figure 1).



(Figure 1: Power BI extract showing GHG breakdown by country and sector)

Conclusion

Commercial advantages, stakeholder pressure, and EU regulation are making Scope 3 a priority for fund managers and holding companies alike. Yet the data problem in the mid-market requires a pragmatic approach. A top-down approach can deliver reliable Scope 3 data with decisive advantages over traditional bottom-up methods: results in days rather than months, scalability across the entire portfolio, methodological consistency for comparable results, cost efficiency, and regulatory robustness – GHG Protocol-compliant and directly usable for your SFDR or CSRD reporting.

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