

SANDPIT BRIEF

UK Greenhouse Gas Emissions Reporting: the Challenges of Quantifying Scope 3 Emissions

Background

As climate change continues to dominate global discourse, businesses are under increasing pressure to account for their environmental impact. While many organizations have made strides in reporting direct emissions (Scope 1) and indirect emissions from purchased energy (Scope 2), the most complex and often largest category—Scope 3 emissions—remains a significant challenge. This complexity is particularly pronounced in sectors where indirect emissions are deeply embedded.

Scope 3 emissions, as defined by the Greenhouse Gas (GHG) Protocol, are indirect emissions that occur in a company's value chain, both upstream and downstream. These include emissions from purchased goods and services, transportation, waste disposal, business travel, and the use of sold products, among others. For many companies, Scope 3 emissions represent over 70% to 90% of their total carbon footprint.

In the many sectors, Scope 3 emissions are particularly significant. A 2023 Accenture report found that Scope 3 emissions in the tech industry are 24 times greater than Scope 1 and 13 times greater than Scope 2 emissions. This disparity underscores the urgent need for robust Scope 3 reporting mechanisms tailored to the digital economy.

Despite its importance, Scope 3 reporting is fraught with challenges, including data availability and quality, complex value chains, calculation methodologies, limited control and influence, and regulatory and standardization challenges.

As organisations become more data driven they can face unique hurdles such as the intangibility of software products, cloud infrastructure complexity, rapid technological change, and lack of sector-specific guidance. Emerging solutions include technology-driven data collection, supplier engagement, standardization, and circular economy practices.

Scope 3 climate reporting is a critical yet complex component of corporate sustainability. For many businesses the challenges are amplified by the intangible nature of digital services, the intricacies of cloud infrastructure, and the opacity of global supply chains. However, with the right tools, methodologies, and collaborative efforts, businesses can begin to quantify and reduce their Scope 3 emissions.

There is also an economic factor in understanding scope 3. All publicly funded organisations in Scotland are expected to achieve net zero by 2045, although many are aiming for earlier. To do that they need to understand where their emissions come from. Better data will help organisations direct their resources, and funding, towards where they will have the most impact.

Data Availability and Challenges

Scope 3 emissions—those indirect emissions occurring across a company's value chain—are increasingly recognized as the most significant and complex component of corporate carbon accounting. For many organizations, Scope 3 can represent the majority of their total emissions, yet remains the least understood and least quantified.

This sandpit discussion aims to explore what data is or could be available to support Scope 3 reporting, and to unpack the technical, operational, and strategic challenges that businesses face in doing so.

Potential data sources could include, but are not limited to, cloud service providers, procurement systems and software usage analytics.

Some of the key challenges include data granularity and transparency, attribution complexity, rapid technological change, methodological uncertainty, and data integration and interoperability.

Scope 3 reporting is not just a compliance exercise—it's a strategic opportunity to understand and reduce the hidden environmental impacts of digital operations.