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Challenges and solutions in measuring and reporting Scope 3 emissions

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Preface

As the need for worldwide climate action intensifies, it is more critical than ever that organisations can understand and manage emissions that extend beyond their direct control.

However, organisations face challenges when it comes to measuring and reporting these so-called Scope 3 emissions.

In this report, we offer potential solutions for the business world and other stakeholders seeking to address the challenges in measuring and reporting Scope 3 emissions. We recognise that there is no one silver bullet solution to this complex issue, and have therefore included a variety of options, including supply chain collaborations, regulatory or standard-setting directions, and technical innovations such as data platforms.

Key components of this report include:

- An examination of current reporting standards and guidelines
- Insights into the challenges associated with Scope 3 emissions measurement and reporting
- An overview of potential solutions and recommendations for business, government, the financial sector, and standard-setters.

This report is written for business professionals, policymakers, and individuals interested in measuring and reporting Scope 3 emissions effectively. We believe the insights, guidance and references in this document will make it a valuable resource for dealing with this critical aspect of sustainability.

This report has been written upon request of the Dutch Ministry of Infrastructure and Water Management, and the Dutch Ministry of Economic Affairs and Climate Policy.

We are grateful for the collaboration of the ministries' employees throughout the process, in the form of discussions and feedback, which has been instrumental in the successful completion of this report. We would also like to thank the 22 organisations that have shared their valuable insights, through interviews and participation in our expert session.

Executive summary

Scope 3 greenhouse gas emissions are those that arise in the value chain but outside a company's own operations. Overall, 88% of business emissions are Scope 3, so they are an important focus for reducing total emissions.

CHALLENGES

To reduce Scope 3 emissions, they must be measured and reported, but this is difficult because the sources lie beyond a company's operational reach. Through the interviews conducted with twenty-two organisations, we have identified five main types of challenges.

Poor data quality and availability across the supply chain is the main obstacle. Supply chain partners – especially smaller businesses – often lack good-quality primary data, or the resources to calculate and share it effectively and accurately. A further obstacle is the lack of common data-sharing infrastructure across value chains and countries. In the absence of primary data, it is a challenge to accurately evaluate and improve Scope 3 emissions.

There is **a wide range of disclosure standards**, and it requires expert knowledge to understand the nuanced differences. They are evolving rapidly, to reflect current climate science, so knowledge must be constantly updated. Even when understood correctly, many standards leave room for interpretation, leading to inconsistent methodologies across the value chain. Although most businesses focus on their organisational-level footprint, product-level footprints are becoming increasingly important through regulatory developments and demand for product carbon footprint information. Furthermore, product-level footprints can enable more accurate Scope 3 emissions reporting, but involve different methodologies than the organisational footprint.

Engaging stakeholders across the value chain is essential for obtaining Scope 3 emissions data, but can be challenging when partners do not measure their emissions or face difficulties improving their measurement, reporting and performance. Even for those that have data available, concerns about trust, confidentiality, intellectual property or reputation can make them reluctant to share it.

Resource constraints can limit a company's Scope 3 emissions measurement and reporting capabilities. Many find it challenging to process the high volume of data involved, which is typically done manually. Often, SMEs (small and medium-sized enterprises) also lack the expertise and knowledge needed to fully understand and meet complex reporting requirements. Even when resources are available, they must be balanced effectively, to improve both reporting and reduction of emissions.

Limited integration of Scope 3 emissions into businesses' thinking results in slower decarbonisation. One obstacle is a lack of organisation-wide awareness, vision or ambition, which can limit internal engagement and credible investor discussions. Another obstacle is the limited integration of Scope 3 data into business operations and processes. In procurement, for example, there is little integration of emissions criteria into purchasing decisions for goods and services, although this is essential for obtaining better data and steering performance on Scope 3 emissions.

SOLUTIONS

Although individual businesses can overcome some barriers by themselves, most solutions involve collaboration between multiple stakeholders across value chains or within sectors. We have identified four types of solutions, based on the interviews and a roundtable with Scope 3 experts.

Data collection technology can help smaller businesses measure, calculate and manage their own emissions, and raise the overall quality of Scope 3 emissions data. Emissions measurement software can help suppliers both obtain consistent and reliable data, and save time and resources.

Executive summary

Wider access to life cycle assessment (LCA) inventories and databases will make estimates more accurate, and be more cost-effective than proprietary databases. Last, the introduction of a secure and standardised data-exchange platform could resolve the issue of disparate data formats and standards for emissions reporting, resulting in improved data sharing, consistency and data quality across value chains.

The current **harmonisation of standards and guidance** should be accelerated, to simplify reporting processes, and to ensure global consistency and accuracy of reported data. In 2023, key players such as the European Commission and the International Sustainability Standards Board (ISSB) made good progress toward aligning sustainability reporting standards and emphasising uniformity, but further convergence is still needed. Consistency can be improved through refinements and specific guidance on measurement methods, which will leave less room for interpretation, and promote consistency.

Incentives and long-term perspectives can help businesses think beyond immediate commercial priorities, and engage in emissions reporting. Subsidies or business-to-business incentives can indirectly motivate companies to report their emissions – especially when linked to insetting (reducing emissions within the supply chain) – and could also accelerate voluntary emissions reporting. Increasing the scope of emissions reporting regulations to cover more companies or activities can improve the availability of primary emissions data. A clear long-term government perspective on the future direction of regulations can help businesses align their strategies and plan action to reduce and report their emissions. Procurement is a key commercial interface between supply chain partners, and emissions-related criteria can incentivise suppliers to improve their reporting and reductions; government can take the lead by adopting such qualifying criteria in public procurement policies.

Greater **knowledge and awareness** across multiple stakeholder groups is important to solve the challenges identified in this report. For instance, the training of auditors in Scope 3 emissions accounting is a key solution for improving compliance with reporting requirements and instilling greater stakeholder confidence. Educating and incentivising employees across all sectors, through internal or external training programmes, can improve the accuracy of data collection and the breadth of reporting. In addition, supplier education programmes will ensure accurate and timely data provision, and foster collaboration to reduce emissions across the value chain. On the consumer side, raising user awareness on product footprints can influence consumer behaviour toward low-emission products, with initiatives such as eco-labels to enhance transparency. Last, sectoral knowledge sharing can help companies collaborate to face common challenges, enhance the accuracy of Scope 3 emissions calculations, and raise credibility for the whole industry.

RECOMMENDATIONS

To enable these solutions, and remove the obstacles faced by organisations in achieving high-quality Scope 3 measurement and reporting, we recommend several specific initiatives. Government and the private sector can take many actions to enhance emissions reporting, increase data availability and raise quality; standard-setters can ensure the interoperability of evolving standards, while auditors and the financial sector can indirectly promote the relevance of quality standards for emissions reporting.

Better measurement and reporting of Scope 3 emissions will be essential for tracking our progress toward global climate goals and, with enough combined effort and commitment, the challenges can be overcome.

Where there is a will, there is a way.

Managementsamenvatting

Scope 3 broeikasgasemissies zijn emissies die plaatsvinden in de waardeketen van een bedrijf, bijvoorbeeld bij leveranciers van een bedrijf of bij het gebruik van de producten van een bedrijf. Ze vormen een belangrijk deel van de totale emissies: gemiddeld 88% van alle emissies van een bedrijf. Dit geeft het belang en de urgentie aan van het bepalen en reduceren van Scope 3 emissies.

UITDAGINGEN

Om Scope 3 emissies te verminderen, moeten ze worden gemeten en gerapporteerd, maar dit wordt vaak als uitdagend ervaren omdat de emissiebronnen buiten de directe controle van een bedrijf liggen. Door middel van interviews met tweeëntwintig organisaties hebben we vijf categorieën van uitdagingen geïdentificeerd.

De meest voorkomende uitdaging is de **beperkte kwaliteit en beschikbaarheid** van data uit de toeleveringsketen. Vooral kleinere bedrijven hebben vaak geen toegang tot data van hoge kwaliteit, noch de middelen om deze accuraat en effectief te berekenen. Bovendien ontbreekt het vaak aan een digitale infrastructuur die eenvoudige gegevensuitwisseling tussen leveranciers en klanten mogelijk maakt.

Daarnaast bestaan er vele **verschillende rapportagestandaarden** die diepgaande kennis vereisen om nuances en variaties te begrijpen. Deze standaarden zijn ook nog vaak in ontwikkeling, waardoor kennis voortdurend moet worden opgefrist. Sommige standaarden laten ruimte over voor interpretatie, wat leidt tot inconsistente rapportage van data. Hoewel bedrijven zich voornamelijk richten op hun organisatorische voetafdruk, wordt het meten van de voetafdruk op productniveau steeds belangrijker door toenemende regelgeving en vragen van consumenten. Voetafdrukken op productniveau kunnen ook een nauwkeurigere rapportage van Scope 3-emissies mogelijk maken voor partijen door de keten heen, maar ze worden vaak in andere rapportagestandaarden beschreven dan de organisatorische voetafdruk.

Het **betrekken van partijen** in de waardeketen is belangrijk voor het verkrijgen van Scope 3 emissiedata maar kan uitdagend zijn omdat niet elk bedrijf haar emissies meet of rapporteert. Zelfs als er gegevens beschikbaar zijn, kunnen zorgen over vertrouwelijkheid, intellectueel eigendom of reputatie ervoor zorgen dat partijen aarzelen om deze te delen.

Beperkte middelen kunnen een belemmering vormen voor een bedrijf om Scope 3 emissies te meten en te rapporteren. Partijen vinden het vaak lastig om de grote hoeveelheid data (vaak handmatig) te verwerken die nodig is om de emissies te berekenen. Bij MKB bedrijven (midden- en kleinbedrijf) mist vaak ook de expertise en kennis die nodig is om aan de rapportage-eisen te voldoen. En met vaak beperkte middelen staan partijen voor het dilemma om deze in te zetten op rapportage of op de verbetering van emissies.

Beperkte integratie van Scope 3 emissies in besluitvorming binnen bedrijven leidt tot een langzamere vermindering van uitstoot. Dit komt onder andere doordat er niet altijd bewustwording is bij medewerkers binnen bedrijven van het belang en de urgentie van Scope 3 emissies. Hierdoor wordt dit onderwerp beperkt geïntegreerd in bedrijfsactiviteiten en -processen. In inkoop worden emissiecriteria vaak niet toegepast, hoewel dit essentieel is voor het verkrijgen van betere data en het sturen op Scope 3 emissies.

OPLOSSINGEN

Er zijn oplossingen, maar veel daarvan vereisen samenwerking tussen meerdere partijen in de waardeketen of binnen sectoren. Op basis van de interviews en een rondetafelgesprek met Scope 3-experts zijn in dit rapport vier soorten oplossingen geïdentificeerd.

Het gebruik van **technologie om data te verzamelen** kan bedrijven helpen hun eigen emissies te meten, berekenen en beheren, en de kwaliteit van data te verbeteren. Software voor het meten van emissies kan partijen door de keten heen helpen consistente en betrouwbare data te verkrijgen en tijd en middelen te besparen.

Managementsamenvatting

Betere toegankelijkheid tot levenscyclusanalyse (LCA) databases kan ervoor zorgen dat partijen beter, nauwkeuriger en goedkoper kunnen rapporteren dan wanneer elke partij zijn eigen LCA's moet maken of data moet verzamelen of inkopen. Ook het introduceren van een veilig en gestandaardiseerd data uitwisselingsplatform kan helpen om het probleem van uiteenlopende dataformats en inconsistente data op te lossen.

Het is belangrijk om de vereisten van **rapportagestandaarden- en richtlijnen** nog beter op elkaar aan te laten sluiten, zodat bedrijven makkelijker rapportageprocessen kunnen inrichten en data consistent berekend en gerapporteerd kan worden. In 2023 maakten belangrijke spelers, zoals de Europese Commissie en de International Sustainability Standards Board (ISSB) al goede vorderingen hierin, maar verdere convergentie is nog steeds nodig. Consistentie kan ook worden verbeterd door standaarden en richtlijnen verder aan te scherpen of door ontwikkeling van sectorspecifieke richtlijnen.

Om ervoor te zorgen dat meer bedrijven Scope 3 emissies gaan rapporteren, kan het helpen om **lange termijn perspectief** te geven zowel vanuit de overheid als intern bij organisaties. Het aandeel bedrijven dat vrijwillig hun CO_2 emissies rapporteert kan vergroot worden door subsidies te verstrekken voor aankoop van bijvoorbeeld emissierapportage software of deelname aan digitale data uitwisselingsplatforms. Ook kunnen subsidies ingezet worden om bedrijven te helpen hun emissies binnen één toeleveringsketen te verminderen, dit heet *insetting.* De hoeveelheid vermindering zal moeten worden gerapporteerd waardoor deze subsidie indirect meting en rapportage kan stimuleren. Op dit moment zijn niet alle bedrijven verplicht hun emissies te rapporteren. De reikwijdte van rapportage regelgeving versneld vergroten kan ervoor zorgen dat meer partijen toegang krijgen tot primaire emissiedata van hun leveranciers. Binnen organisaties is de inkoopafdeling belangrijk om primaire data van leveranciers te krijgen. Door emissiedata te integreren in inkoopcriteria, kunnen leveranciers gestimuleerd worden data te delen. De overheid kan hierin het voortouw nemen door dergelijke criteria op te nemen in haar aanbestedingsbeleid.

Meer kennis en bewustwording bij diverse groepen uit meerdere sectoren is belangrijk om de uitdagingen uit dit rapport op te lossen. Bijvoorbeeld: door de kennis van accountants op Scope 3 gebied te verbeteren, kunnen zij hun rol vervullen in de naleving van de rapportageverplichtingen, en hiermee vertrouwen in de samenleving creëren. De consument is ook een belangrijke speler. Door de consument meer inzicht te geven in de voetafdruk van producten kan zij beter de keuze afwegen tussen producten. Ten slotte kan ook binnen sectoren kennis gedeeld worden tussen organisaties om samen gemeenschappelijke uitdagingen aan te gaan.

AANBEVELINGEN

Om deze oplossingen mogelijk te maken, en obstakels weg te nemen die organisaties tegenkomen bij het bereiken van Scope 3-meting en - rapportage, hebben we enkele aanbevelingen geformuleerd. Overheden en het bedrijfsleven kunnen diverse maatregelen nemen om rapportage van emissies te verbeteren en de databeschikbaarheid te vergroten. Partijen die rapportagestandaarden maken zullen nog meer elkaar op moeten zoeken om consistentie en vergelijkbaarheid te vergroten. Accountants en de financiële sector kunnen een rol spelen in betrouwbaarheid en beschikbaarheid van gerapporteerde emissies.

Beter meten en rapporteren van ketenemissies zal essentieel zijn om de wereldwijde klimaatdoelen te halen. Alleen door gezamenlijke inspanningen en grotere bewustwording kunnen de uitdagingen echt worden overwonnen.

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1.0 Introduction

To achieve global climate goals, organisations must measure and report on greenhouse gas emissions across their entire value chain, including the upstream emissions of their suppliers and the downstream emissions of their products and services. These are not always easy to evaluate. This report considers the main difficulties in measuring and reporting value chain emissions, and offers potential solutions and recommendations to multiple stakeholder groups.

The global community continues to face the pressing concerns of climate change and its far-reaching consequences, and is increasingly recognising that effective management of greenhouse gas (GHG) emissions requires a robust approach to measurement.

GHG emissions arise not only from within an organisation's own operations, but also throughout its value chain: both at its suppliers, and in the use of its products and services. For most organisations, these value chain emissions represent the largest part of their carbon footprint.

Organisations can only manage such value chain – or Scope 3 – emissions if they understand their sources and volumes. A robust measurement approach is therefore essential for achieving global climate goals – individually and collectively.

The Dutch Ministry of Infrastructure and Water Management has engaged Deloitte to conduct a study on the challenges and solutions associated with measuring and reporting Scope 3 emissions – especially as a growing number of organisations are expressing difficulties with this topic; difficulties that they cannot solve alone.

Our research involved desk research and an examination of the perspectives of twenty-two organisations from different stakeholder groups in the Netherlands, to detail the complexities around Scope 3 emissions and effective solutions for enhancing measurement and reporting practices.

In addition, Deloitte organised an expert session with Scope 3 emissions experts from four organisations. The resulting insights have helped to identify the principal challenges, solutions and recommendations presented here.

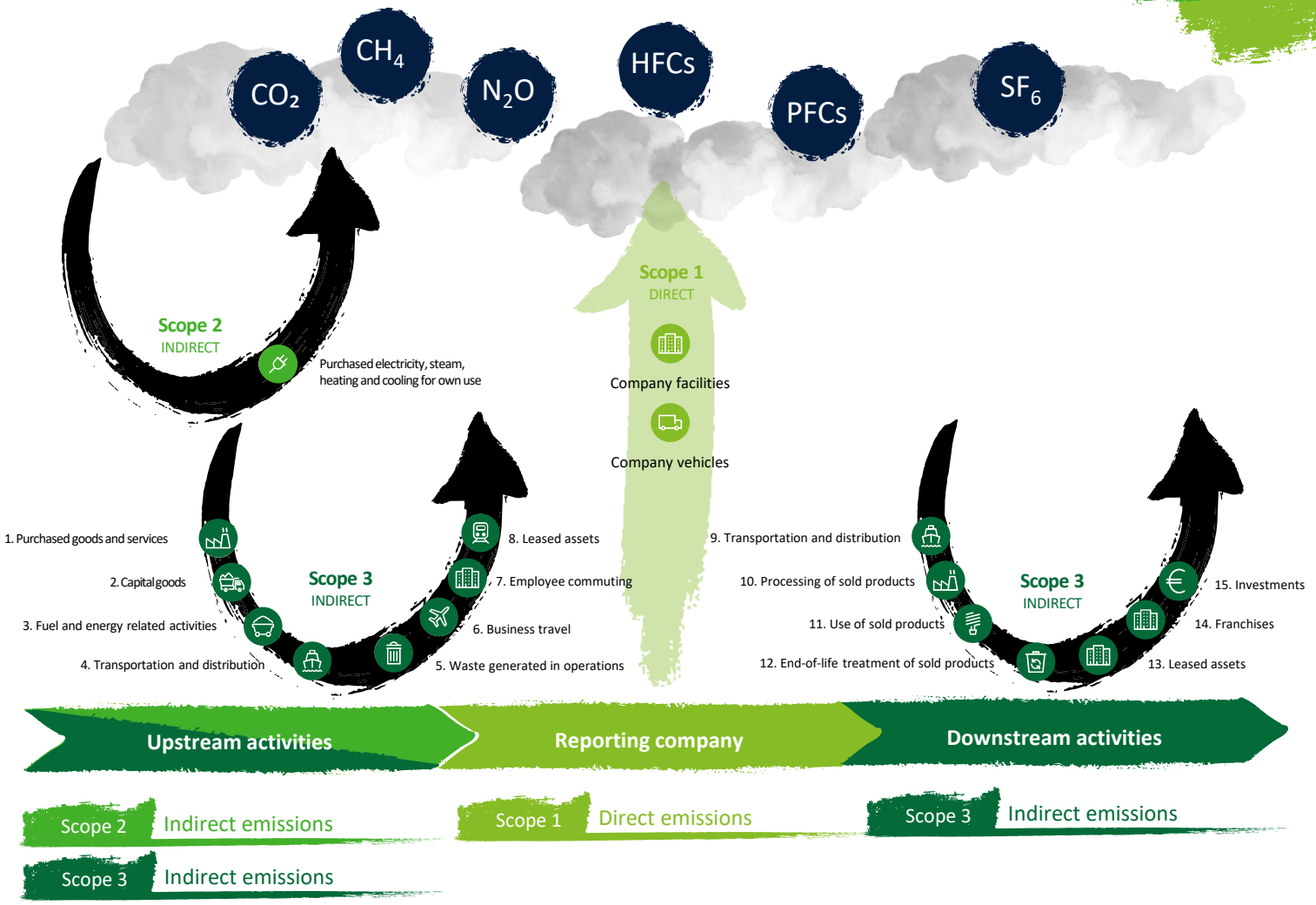
Deloitte has synthesised these findings to map out a potential way forward – not only for organisational transformation, but also to create a broader operating environment, which will foster a change in behaviours amongst relevant stakeholders across the whole value chain.

Our conversations identified five types of challenge and four types of solution, which affect the shift from data being inconsistent and unreliable, to becoming the catalyst for effective decisions and demonstrable action to reduce value chain emissions.

The next sections of this report delve into the details of Scope 3 emissions, examine the challenges faced by organisations in measuring and reporting them, and propose a range of pragmatic solutions to those challenges, including recommendations for key stakeholders.

1. CDP Technical Note Scope 3
2. Scope 3 Calculation Guidance

Figure 1. Breakdown of Scope 1, 2 and 3 emissions. [3]



What are Scope 3 emissions?

GHG emissions contribute to the greenhouse effect, and include gases such carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Every organisation creates GHG emissions throughout its value chain, and the three 'Scopes' indicate where in the value chain they occur:

- **Scope 1:** emissions made directly by an organisation's own operations – while running its boilers and vehicles, for instance.
- **Scope 2:** emissions made indirectly, such as those from the energy an organisation buys to heat and cool buildings, where emissions are produced on its behalf.
- **Scope 3:** other emissions arising in the value chain both upstream and downstream. Upstream emissions are released in producing the products or services supplied to an organisation, including emissions from raw material extraction, manufacturing processes and transportation of the purchased goods and services. Downstream emissions arise from the use and disposal of the products or services sold by the organisation.

Scope 3 emissions are divided into 15 categories (see figure above),[1] of which 8 are upstream and 7 are downstream. The relevance of different categories varies according to the type of organisation and the sector in which it operates.

Why do Scope 3 emissions matter?

For most companies, their largest emissions are Scope 3, but there are significant differences across sectors.

At the high end, Scope 3 emissions account for 99.98% of emissions in the financial services sector; at the low end, they are responsible for only 16% of emissions in the cement industry.[2]

However, across all sectors, approximately 88% of emissions are Scope 3.[3] Ignoring such emissions would therefore underrepresent total GHG emissions, and hinder the development of effective strategies to reduce emissions.

Therefore, it is essential to measure Scope 3 emissions accurately and report them transparently, to inform decision-making, target-setting and collaboration by stakeholders in all sectors and industries.

Because Scope 3 emissions are outside a company's direct control, reducing them can be challenging. The first step is to account for them, comprehensively and accurately – after all, you need to measure before you can manage.

1. These 15 categories are included in the GHG protocol. In ISO 14064, there are two categories: direct and indirect (upstream/downstream) emissions
2. CDP
3. Scope 3 Guidance

2.0 challenges

2.0 Challenges

When it comes to measuring and reporting Scope 3 emissions, a key challenge is obtaining accurate and high-quality emissions data, as this data is not under the direct control of the reporting organisation. This challenge is compounded by the diversity of standards, limited stakeholder engagement, resource constraints, and the limited integration of Scope 3 insights into business decisions. Inadequate data produces inaccurate assessments, making it harder to pinpoint emission hotspots, set meaningful reduction targets, or report progress effectively.

Figure 2 provides an overview of the five types of challenge. We identified these areas by conducting interviews and desk research, then distilling our findings. The challenges are not discrete, but intricately connected (see Appendix A), so a holistic approach is needed to tackle them effectively and pave the way to achieving ambitious climate goals. The following sections delve further into each challenge, and provide context to improve understanding of the issue.

Figure 2. Main challenges mentioned during interviews

Low data quality and availability

Accessing reliable, comprehensive and high-quality Scope 3 emissions data is perceived as the main challenge. In contrast to Scopes 1 and 2 emissions, companies are faced with incomplete, fragmented or outdated information about their value chain emissions.

Diversity of disclosure standards

The wide range of disclosure standards leads to inconsistent and incomparable Scope 3 emissions reporting, because guidelines leave room for interpretation, and expertise is needed to grasp the standards fully.

Constraints in resources

Organisations experience constraints in their available resources, including people, funding and tools, making the process time-consuming and expensive.

Difficulties engaging the stakeholder landscape

Stakeholder engagement is crucial for obtaining reliable Scope 3 emissions data and achieving emissions reduction targets. However, challenges in supplier engagement include awareness gaps, contractual obstacles, limited corporate participation in setting ambitious targets, and insufficient incentives for reporting and reducing emissions.

Limited integration of insights into business decisions

Not all levels of business understand the relevance and need for emissions accounting and reduction, making it harder to use Scope 3 emissions reporting insights efficiently in decision-making.

Unique number of challenges identified during interviews (grouped into the five categories)

2.0 Challenges

Measuring and reporting Scope 3 emissions can be a complex task, and companies face different challenges according to their maturity in reporting. While low-maturity companies may wrestle with data access and limited awareness, those with higher maturity encounter issues related to supply chain complexity. The most mature companies face further challenges, of stakeholder engagement, data accuracy, global regulations, and complex, interconnected operations. By recognising the challenges at each stage of maturity, companies can develop effective strategies for tackling Scope 3 emissions throughout their value chain. We have summarised the stages in the illustrative maturity model shown in Figure 3 below.

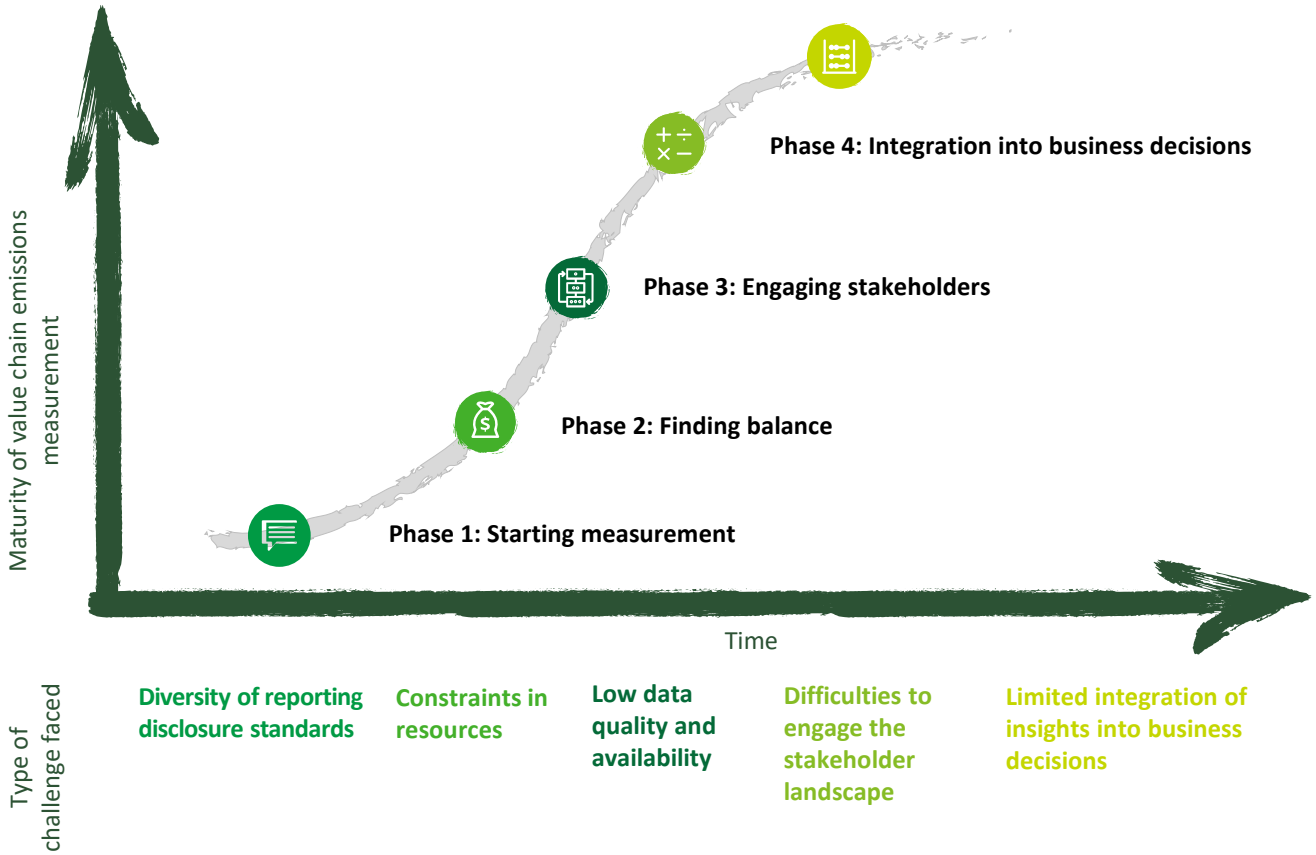
Phase 1:
Starting measurement
Companies just starting to measure their Scope 3 emissions typically struggle to understand which of the 15 categories to include, what data is needed, where to source that data, and how to ensure it is robust enough. Other issues in this phase include interpreting the wide range of reporting standards and resource constraints.

Phase 2:
Finding balance
As companies mature, they discover that measurement is made harder by the underlying assumptions they must make, and because quality levels vary between the 15 Scope 3 emissions categories. This leads to internal discussions about how to balance investments between obtaining high-quality, complete data, and taking action to reduce emissions.

Phase 3:
Engaging stakeholders
In this phase, companies start to engage proactively with their stakeholders, to improve their Scope 3 emissions – e.g., on category 1 (purchased goods and services). Engaging with suppliers can be difficult if companies feel they have limited buying power or lack an incentive to request data on the emissions of materials or services.

Phase 4:
Integration into business decisions
Companies try to adopt a collaborative ecosystem approach, in which stakeholders support each other to collect and share data, and create incentives to promote carbon reduction. At this stage, efforts are made to integrate insights into business decisions.

Figure 3. Illustrative maturity model for measuring Scope 3 emissions



2.1 | Low data quality and availability

Most organisations do not have access to primary Scope 3 emissions data, and therefore estimate their Scope 3 emissions from a combination of internal and external data sources. As a result, their Scope 3 emissions data and reporting are less robust than the other sustainability factors they measure and report. Other, typically smaller, companies are not yet measuring and reporting their emissions, resulting in limited engagement and therefore limited access to Scope 3 data. Data quality and availability must be addressed if organisations wish to provide accurate and comprehensive emissions disclosures and manage their progress toward reduction targets.

Key takeaways

2.1.1. The constraints on obtaining verified data from value chain relationships

The challenge of obtaining high-quality Scope 3 emissions data is rooted in companies' reliance on value chain partners for its collection. Data quality and consistency can vary widely, making it difficult to gain a comprehensive view of Scope 3 emissions. Where primary data is available, collecting this information for every component from each supplier is still a highly complex and time-consuming task, for calculating the carbon footprint of both a whole organisation and its individual products. Reliable information is typically available about only a company's own operations and the associated emissions, while knowledge of emissions from up- and downstream processes is limited.

Data on downstream emissions is particularly hard to obtain due to the limited control over the usage and end-of-life phases of products and services. This constraint is exacerbated by the fact that not all organisations in the value chain have compliance obligations to report on these aspects. Thus, if companies act as isolated entities, their ability to calculate reasonably accurate carbon footprints will be very limited.

2.1.2. The lack of a commonly accepted data-sharing infrastructure across countries and value chains

Without effective data-sharing infrastructure and accessible measurement frameworks, primary emissions data is hard to obtain. Although several initiatives have been set up, including the Partnership for Carbon Transparency (PACT),[1] there is no commonly accepted infrastructure for sharing data across sectors and countries. Furthermore, the rules for such infrastructure are still being developed, to ensure interoperability between the different data-sharing systems.

2.1.3. The lack of primary data, and therefore the use of estimations and spend-based measurement

As the primary data for measuring emissions are often not available, companies turn to secondary measurement sources, such as spend-based average methods. These methods often lack the specificity required to pinpoint the emissions associated with individual products or suppliers, which can inhibit the development of strategies to reduce emissions within a company's supply chain. The transition to increased primary data collection and more accurate measurement methods will be essential for equipping organisations to improve data quality, reward front-runners and reduce emissions. See Appendix B for an overview of different approaches to calculating Scope 3 emissions and their robustness.

What we have heard:

"Balancing the need for high-quality emissions data with practicality is a challenge – particularly considering the large volume of our purchases.

We have to prioritise workability over the depth of our accounting, to keep things manageable and focus our efforts on hotspots of emissions."

1. Carbon Transparency

2.2 | The diversity of disclosure standards

As companies strive to quantify their Scope 3 emissions, they are confronted with a wide range of standards, regulations and methodologies for measurement and reporting. It requires a significant investment of time and expertise to grasp the many reporting standards and measurement methods. Even though most companies opt for the GHG Protocol Corporate Value Chain (Scope 3) standard for calculating emissions, they face challenges of interpretation, and nuanced differences in reporting approaches, leading to discrepancies in Scope 3 emissions disclosures. Furthermore, standards and methodologies are evolving rapidly, so keeping up to date with the details is also a challenge. Each of the three challenges mentioned below will be considered further in the following pages.

Key takeaways

2.2.1. The difficulty in understanding and keeping up with the rapidly changing Scope 3 emissions reporting landscape

There are many reporting standards (see Figure 4 on page 18) and they contain many details that can be hard to grasp fully, due to nuanced differences in essentially similar requirements. They often ask for the same metrics in different formats, leading to varied requirements for reporting of data. Furthermore, these standards are evolving rapidly to reflect the latest research. This requires deep expertise and up-to-date knowledge, which companies often lack because of limited resources.

2.2.2. Room for interpretation in calculating Scope 3 emissions

The GHG Protocol and ISO 14064 are two measurement methods widely used to calculate organisational Scope 3 emissions. Both are broadly applicable to a wide variety of organisations and contain some flexibility in how they can be applied, which leaves room for methodological decisions when developing the emissions inventory. This room for interpretation poses challenges for uniform reporting of Scope 3 emissions, including the following examples.

Defining the boundaries. Organisational and operational boundaries are examples where there is room for interpretation. This is especially challenging for companies with complex structures, where products are, for example, manufactured by one entity and sold to another within the same group. Discussions also highlighted uncertainty about including or excluding end-of-life emission reduction techniques, biomass and the use of carbon capture and storage (CCS).

Emission factor selection. Little guidance is available for selecting emission-factor databases, or how to measure emissions if no updated emission factors are available.

Calculation methods. Companies can make choices on the type of data they use to calculate their Scope 3 emissions. For instance, if no primary data is available from suppliers, they can choose to calculate emissions based on purchasing spend or volume. Although guidance documents describe the available methods, there are several ways to perform the actual measurement calculations. This room for interpretation can lead to discrepancies in the outcomes of emission data calculations between organisations.

2.2.3 Challenge to understand the connection between organisational product carbon footprints

As well as measuring Scope 3 emissions in the organisational carbon footprint (OCF), an increasing number of companies are now measuring the product carbon footprint (PCF), driven by regulations or customer demands for greater transparency. Understanding how to measure PCFs is a challenge, due to the complex and academic nature of PCF measurement methods. In addition, PCF and OCF standards have been created by separate organisations, to serve distinct users and goals, and therefore lack connectivity.

What we have heard:

"Standardisation of Scope 3 measurement methods is essential: for example, how can we demonstrate and agree on our carbon sequestration efforts?"

"We need to commit ourselves in a meaningful way. There are various frameworks and initiatives, but it's more important that everyone does the same thing rather than everyone giving their interpretation. We are trying to tell suppliers 'This is how we do it: SBTi, CSRD.' This way, we hope to arrive at a common language."

2.2.1 | The difficulty in understanding and keeping up with the rapidly evolving Scope 3 reporting landscape

Effectively managing Scope 3 emissions involves understanding the different phases of measuring, setting targets, and steering on performance. Each of these steps is integral to the overall emission management process, requiring reporting and transparency throughout. For measurement and reporting, there are several standards available. Understanding the interconnections among measurement and disclosure standards is a challenge, since many of these standards are evolving and demand a deep understanding of the topic. Appendix C gives an extensive overview of Scope 3 reporting standards and regulations. In Figure 4, we have provided an overview of typically used standards by organisations.

1. Measuring emissions
The main internationally recognised measurement and estimation guidance is the Greenhouse Gas Protocol (GHG Protocol),[1] and specifically their Scope 3 emissions guidance.[2] Another option is to report based on ISO 14064, although the standard must be purchased.[3]

2. Committing to reduction by setting a target
For setting emission targets, organisations typically use standards from the Science Based Target Initiative (SBTi) – especially because these targets can then be 'approved' by the SBTi, which enhances credibility with external parties. SBTi promotes best practice for setting targets based on climate science, in line with Paris Agreement objectives.[4]

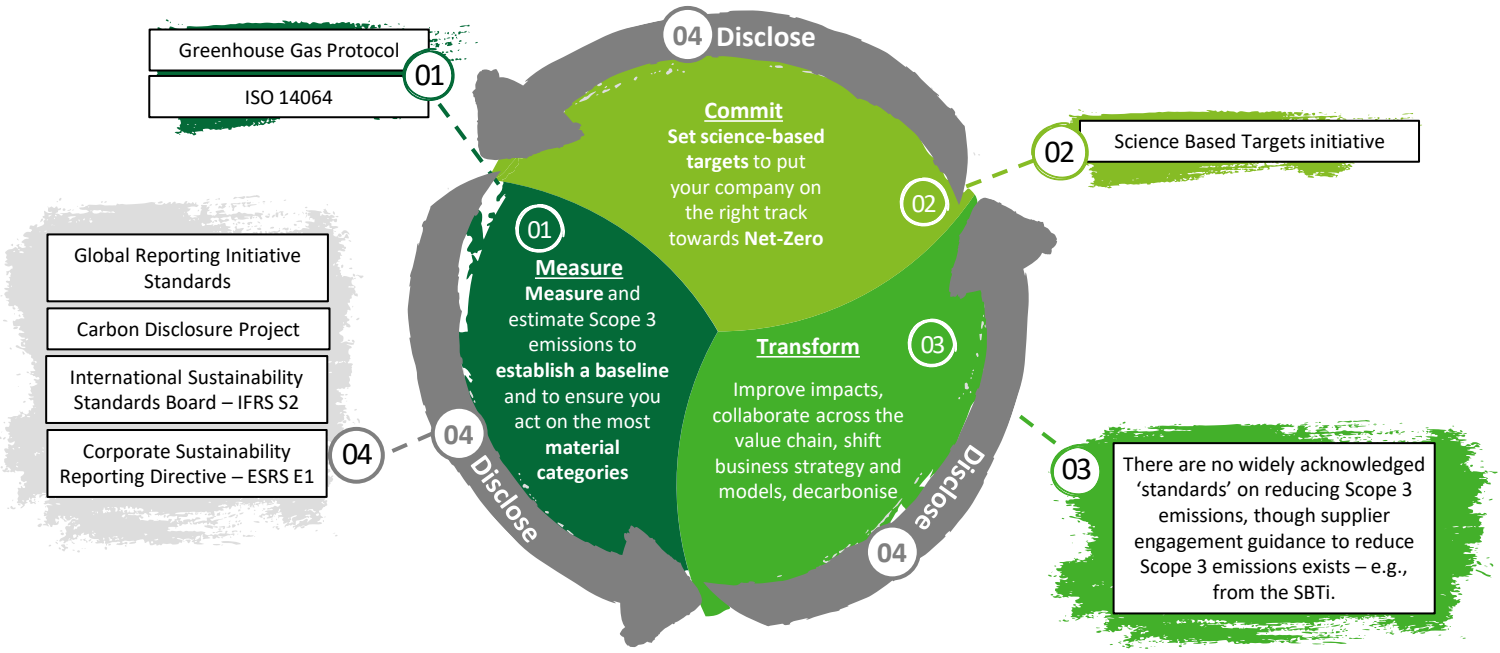
3. Reducing emissions by transformative actions
Widely recognised 'standards' for reducing Scope 3 emissions do not exist. However, guidance is available from some organisations, such as the SBTi, which reviews and approves companies' carbon emission targets against the Paris Agreement goals to limit global warming to 1.5°C above pre-industrial levels.

4. Disclosure based on reporting standards
Commonly used reporting standards are[5]:

- Global Reporting Initiative (GRI) standards[6]
- International Sustainability Standards Board (ISSB) IFRS S2[7]
- European Sustainability Reporting Standards E1 (ESRS – as part of the Corporate Sustainability Reporting Directive, CSRD)[8]
- Carbon Disclosure Project (CDP).[9]

With many reporting standards out there, it can be difficult to navigate this space, but some progress has been made in terms of convergence. For example, Sustainability Accounting Standards Board (SASB) activity has become part of ISSB's work [10]; GRI and ISSB engaged with EFRAG to ensure interoperability with the ESRS standards [11]; and GRI and EFRAG have also published a joint statement on interoperability between the two standards.[12] Similarly, CDP has announced alignment with ESRS.[13] However, the standards still differ on what to include in Scope 3 reporting and how to estimate Scope 3 emissions, as we outline on the next page.

Figure 4. Overview of Scope 3 disclosure, commitment and measurement standards for Organisational Carbon Footprint[11]



1. GHG protocol
2. GHG Protocol
3. ISO 14064
4. SBTi
5. Carbon Chain
6. GRI
7. ISSB IFRS S2
8. EFRAG
9. CDP
10. SASB & ISSB
11. GRI & ISSB
12. GRI - EFRAG
13. GRI, CDP

2.2.2 | Room for interpretation in calculating Scope 3 emissions

Below, we highlight difficulties faced by organisations, which arise from the room for interpretation in measurement methods and disclosure standards.

Room for methodological decision-making in *corporate* carbon footprint[1]

Within and between measurement and disclosure standards, there is room for making methodological decisions. Such decisions might include which Scope 3 activities to include or exclude, setting the Scope 3 boundary, and how to quantify and allocate emissions (see Figure 5 below). For example, each of the 15 Scope 3 categories can be calculated using different methods (spend-based, average data method, supplier-specific, etc), with varying levels of accuracy in the underlying data. This makes it much more challenging than Scope 1 and 2 calculations, in both complexity and resourcing (e.g., effort and cost).

Consequently, organisations often choose a less accurate but more efficient and cost-effective option. This room for interpretation could lead to organisations cherry-picking the most convenient methodology. Furthermore, it prevents the creation of comparable and complete Scope 3 data.

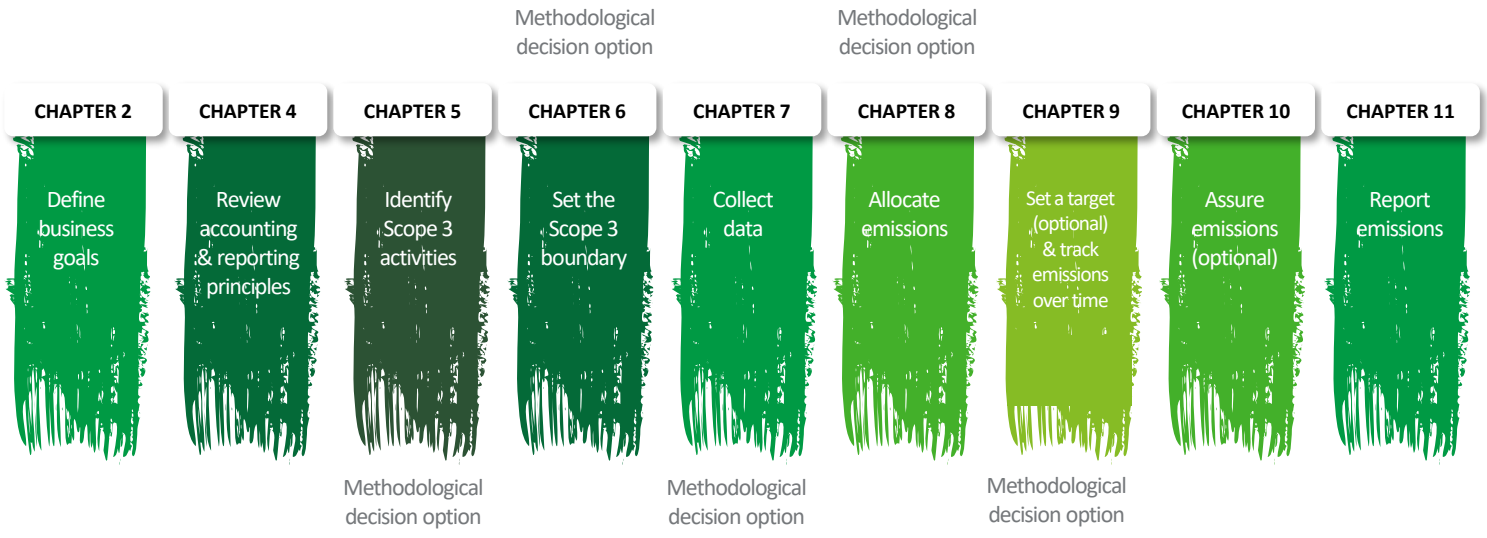
Conversely, the navigation of these methodological choices is difficult, and requires additional effort and resources from organisations. Often, the process requires additional external expertise to make these decisions.

Room for methodological decision-making in *product* carbon footprint[2]

Product carbon footprints (PCFs) can be helpful for organisations that are being asked by their customers to report their carbon footprint at product level. This request can, for instance, be made by companies that need to determine their upstream Scope 3 emissions, from purchased goods and services. However, not all standards require or give guidance on how to include PCFs, so they are often not available for use in Scope 3 accounting. As a result, less accurate methods are often used to estimate emissions from purchased goods and services.

Some standards provide methodologies for calculating PCFs (see next page). However, they leave room for interpretation, resulting in non-comparable data. The European Commission's upcoming Product Environmental Footprint (PEF) method aims to harmonise this area and allow companies to calculate their products' environmental performance based on more reliable, verifiable and comparable information.

Figure 5. Overview of steps in Scope 3 accounting and reporting according to the Corporate Value Chain (Scope 3) Standard by the GHG protocol [1]



1. GHG Protocol
2. Leivas et al. 2019

2.2.3 | Understanding the connection between OCF and PCF

Although most companies have been focusing on their organisational footprint, the footprint of products becomes increasingly important as demand grows for transparency on the emission intensity of products. In addition, standards and regulations are driving product footprint disclosures. Regulations, such as the Product Environmental Footprint (PEF) and the Carbon Border Adjustment Mechanism (CBAM), will oblige companies to measure PCFs for certain products in the EU. [1] However, most PCFs are currently calculated voluntarily.

The differences in measuring OCFs and PCFs add another layer of complexity to emissions reporting, and heighten the challenge of diversity among disclosure standards. To be well-prepared, product and corporate reporting must complement each other within the company. While Scope 3 emissions in the supply chain are primarily the responsibility of the procurement department, the product team is responsible for reducing the carbon footprint of products at the design stage. Understanding how the OCF and PCF differ and interrelate is therefore important, as discussed below.

Product Carbon Footprint:

Goal: measure GHG emissions associated with the production, use and disposal of a particular product or service.

Scope: includes emissions across the entire life cycle of the product, from raw material extraction to manufacturing, distribution, use and disposal.

Purpose: to provide consumers and businesses with information about the environmental impact of a specific product. Knowing a product's carbon footprint helps organisations buying that product or service to estimate their Scope 3 (upstream) emissions.

Limitations: PCF calculations are limited to the specific product or service and its associated supply chain. Emissions associated with other products or services in the organisation are not in scope.

Commonly used standards for PCF:[2,3]

- Product Environmental Footprint (PEF – EU standard for LCA)
- ISO 14067 (International reference standard for PCF)
- GHG Protocol Product Life Cycle Accounting and Reporting Standard
- National standards such as BP X30-323-0 (France) and the PAS 2050 (UK)

Organisational Carbon Footprint:

Goal: measure GHG emissions associated with an entire organisation's activities and operations.

Scope: emissions from all sources in the organisation, including facilities, transport and employee commuting.

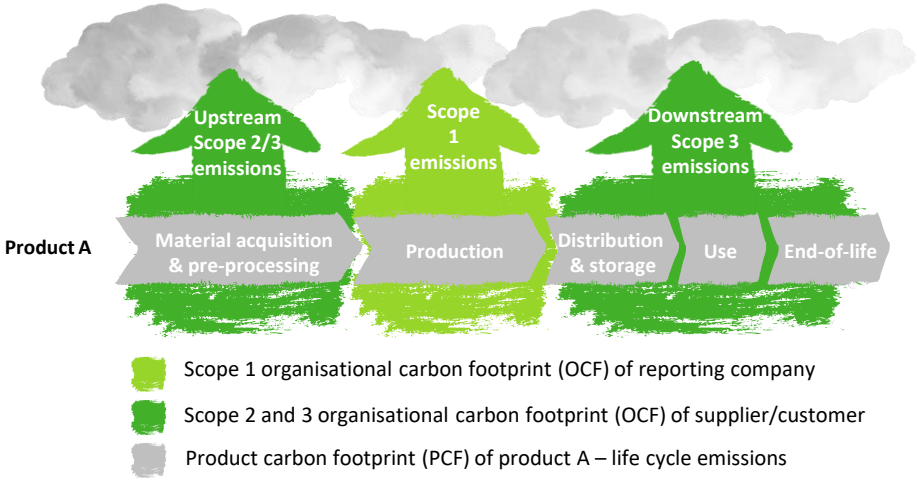
Purpose: OCFs are used to assess and manage the environmental impact of an entire organisation's operations. It helps organisations set emissions-reduction targets, identify areas for improvement, and develop decarbonisation strategies. It also helps the financial sector to understand the carbon emissions performance of an organisation.

Limitations: the boundary for an OCF includes all emissions associated with the organisation's activities, which it controls both directly (Scope 1) and indirectly (Scopes 2 and 3). Linking the results to a single product is often a complex process.

Commonly used standards for OCF (see page 18):

- GHG Protocol Corporate Accounting and Reporting Standard and the GHG Protocol – Corporate Value Chain (Scope 3) Standard
- ISO 14064 (organisational level)

Figure 6. Relationship between PCF and OCF[4]



1. PEF
2. Leivas et al. 2019
3. GHG Protocol
4. PRé-Sustainability

2.3 | Difficulties in engaging stakeholders

Stakeholder engagement is critical for obtaining reliable Scope 3 emissions data and making progress toward emissions reduction targets. However, engagement faces challenges, from an awareness gap among suppliers and internal stakeholders, contractual or confidentiality obstacles to sharing data, limited participation of companies in setting ambitious science-based targets, and a lack of incentives to report and reduce emissions.

Key takeaways

2.3.1. Limited stakeholder engagement in data-collection efforts

Engaging with stakeholders who have not yet started to measure their emissions: Different levels of knowledge and awareness about the relevance of emissions accounting, across countries and suppliers, can result in low availability of supplier data. Convincing suppliers – especially smaller ones – to provide data is a major challenge. The awareness gap is felt mostly by larger companies engaging with smaller companies to obtain their Scope 1 and 2 emission data, or companies in the financial sector investing in smaller companies that have not started Scope 1, 2 or 3 emission measurement.[1]

Engaging with stakeholders who have started to measure their emissions but are reluctant to share data: The reluctance to share data often occurs upstream in the supply chain, and can be attributed to concerns about trust, intellectual property rights and confidentiality. Companies may be hesitant to disclose emissions data due to a fear of negative branding, while intellectual property and confidentiality issues often relate to contractual clauses that prohibit data-sharing. These obstacles highlight the importance of building trust and engaging with suppliers to clarify the use and collection of shared data and encourage emission reduction efforts.

What we have heard:

"How do you encourage companies to engage in ambitious target setting? We believe that aiming for 1.5°C is admirable, but many companies are not required or incentivised to set such targets. The full value chain and sector needs to engage."

1. A European View on Insurance Associated Emission reporting

2.4 | Constraints in resources

The complexity and effort involved in measuring and disclosing Scope 3 emissions are generally significant. Financial commitment and cooperation among the involved parties is essential for establishing and maintaining comprehensive databases that accurately capture and analyse emissions data across the value chain. In addition, individuals with the knowledge and expertise required to navigate the complexities of Scope 3 reporting are essential, but this talent often comes at a cost. Many companies are not able to match resources to the efforts required – especially because the return on investment is not always clear to internal stakeholders.

Key takeaways

2.4.1. Manual data-collection efforts hinder efficiency

The present approach to data collection is often largely manual, involving spreadsheets and redundant requests for data to suppliers or customers. The workload is heaviest in large, global value chains for the category 'Purchased Goods and Services', as it requires emissions to be traced across the entire supply chain, involving communication with several companies, which are often not aligned on the relevance of emission reporting.

Accounting for emissions from the Scope 3 category 'Use of Sold Products' presents an additional challenge, because it involves understanding how consumers use and dispose of products. This requires surveys, interviews or data-collection mechanisms, which add an additional layer of effort and time to the reporting process.

2.4.2. Lack of skilled employees

Companies, especially SMEs, face challenges in sourcing qualified personnel who understand the complexities of measuring and collecting Scope 3 emissions data. Scope 3 reporting is a labour-intensive task, and data collection often depends on several stakeholders, which complicates timely data collection for year-end reporting. Additional tasks, such as aligning with sector initiatives and standards, often place a further burden on (often understaffed) reporting teams.

On top of this, achieving a balance between resource allocation and investments in emission reductions can be a complex task. Some companies prioritise consistency and reducing Scope 3 emissions, rather than committing excessive resources to obtaining complete and accurate Scope 3 data.

What we have heard:

"We work with thousands of suppliers, and we don't want to put pressure on them. The world is evolving rapidly, and many of these parties are new to emission reporting. They face significant challenges with limited manpower, lack of suitable systems, and financial constraints."

2.5 | Limited integration of insights into business decisions

To accelerate Scope 3 reduction, performance data must be embedded in existing business processes. The absence of a well-defined decarbonisation strategy, or inadequate integration of sustainability into procurement policies and other core processes, will limit the value placed internally on data collection and efforts to reduce emissions. Limited internal recognition of the importance of emissions data hinders both data-collection efforts and improvements in data quality.

Key takeaways

2.5.1 Lack of awareness of the relevance of Scope 3 emissions in the organisation

The absence of a top-down commitment to decarbonisation goals, or low internal awareness of the importance of Scope 3 accounting, hamper effective data-collection and emissions-reduction efforts.

Without a clear vision and ambition, engaging internal stakeholders remains difficult. In addition, to have constructive conversations with the financial sector based on understandable Scope 3 emissions disclosures, time must be spent to raise knowledge in reporting teams, so they can clarify the relevance and meaning of Scope 3 disclosures and the underlying assumptions.

2.5.2 Lack of integration into processes

Integrating emissions data-collection and reduction procedures into everyday business operations is critical for encouraging employee participation in Scope 3 measurement, reporting and reduction efforts. Without such integration, it is often viewed as a separate topic, rather than integral to the business.

Several of our interviews suggested that companies have not yet effectively integrated Scope 3 measures, such as including decarbonisation in procurement policies, setting SBTi-approved Scope 3 targets, distributing sub-targets through the organisation, or integrating emissions reporting into existing enterprise management systems.

For procurement activities, organisations can explicitly include criteria about suppliers' environmental performance, reflecting not only the cost aspects but also the emissions associated with the supplied products or services. By incorporating emissions data verification processes into supplier audits, the reliability of emissions data can be enhanced and aligned with established standards and methodologies.

What we have heard:

"Currently, the relevance of emission reporting is not fully understood across the organisation. What we do with the data is unclear; how does it affect our business decisions, strategy, long-term profitability?"

3.0 Solutions

3.0 Solutions

To overcome the challenges in measuring and reporting Scope 3 emissions, action is needed by stakeholders throughout the business ecosystem. We conducted 22 interviews and a discussion session with experts from a wide range of organisations. As a result, we identified four high-level categories, covering solutions to the most material challenges. Each solution represents a call to action for key players. These solutions are essential for achieving accurate and transparent assessments of Scope 3 emissions, and they underpin the collective commitment to environmental responsibility and sustainability.

The solutions we identified in our research are grouped into four categories, detailed below and visualised in Figure 7.

01 Data collection and measurement technologies

The quality of Scope 3 emissions data must be improved if companies are to strengthen their sustainability reporting. A crucial step for achieving this goal is to enhance data accessibility for companies eager to calculate their emissions. Emissions-management software and life cycle inventory databases are essential and enable companies across the value chain to estimate or measure their emissions. Once these emissions are measured, the use of a secure data-sharing infrastructure can make the sharing of emissions data both streamlined and dependable, and handle differing requests and format requirements effectively and efficiently.

02 Standardisation and guidance

In recent years, sustainability reporting standards have been converging towards uniformity. This harmonisation of disclosure standards must be accelerated, to achieve simplicity, consistency and cost reduction, while emphasising the need for interoperability. Furthermore, providing clear guidance on Scope 3 emissions measurement methods, rather than more standards, is crucial for ensuring reliability and standardisation.

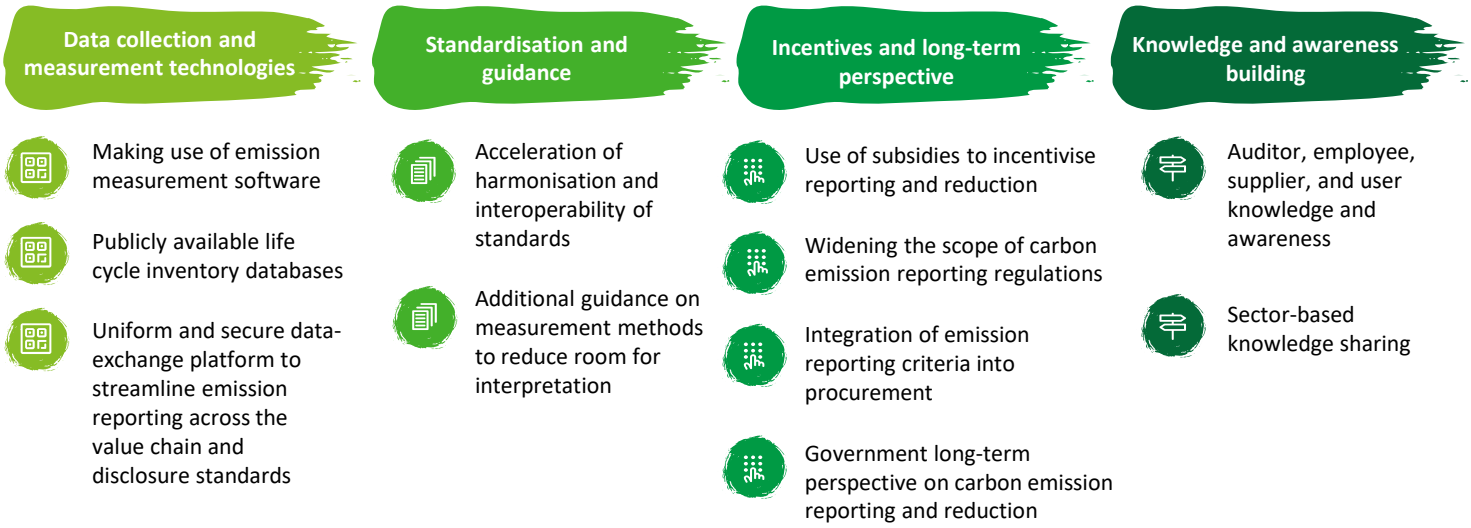
03 Incentives and a long-term perspective

Incentives and a long-term outlook can drive organisations to prioritise emissions reporting. Subsidies and incentives, especially linked to supply chain insetting, can encourage disclosure across the value chain. Also, extended reporting obligations can speed up emissions-data availability, while integrating emissions criteria into procurement policies motivates reporting. Last, companies can benefit from a long-term governmental perspective on emissions reporting and areas for reduction, to enable proactive preparation and strategic investment to ensure future profitability.

04 Knowledge and awareness building

Awareness and knowledge about Scope 3 emissions should be built among multiple stakeholders, through various strategies. These include training auditors and employees in Scope 3 emissions accounting, educating suppliers through programmes that highlight the relevance of emissions reporting, raising user awareness about products' carbon footprints, and promoting sector-based knowledge sharing to overcome common challenges in measuring and reporting Scope 3 emissions.

Figure 7. Overarching solution categories and more detailed, specific solutions



3.0 Solutions

The solutions vary significantly in both their ease of implementation and potential impact on the challenges of Scope 3 measurement and reporting. Working closely with six experts from four large companies, we present an initial estimate of the effort and impact of implementing each solution, in relation to the challenges of measuring and reporting Scope 3 emissions. Figure 8 shows the 11 solutions, categorised by their implementation effort and impact on the challenges identified.

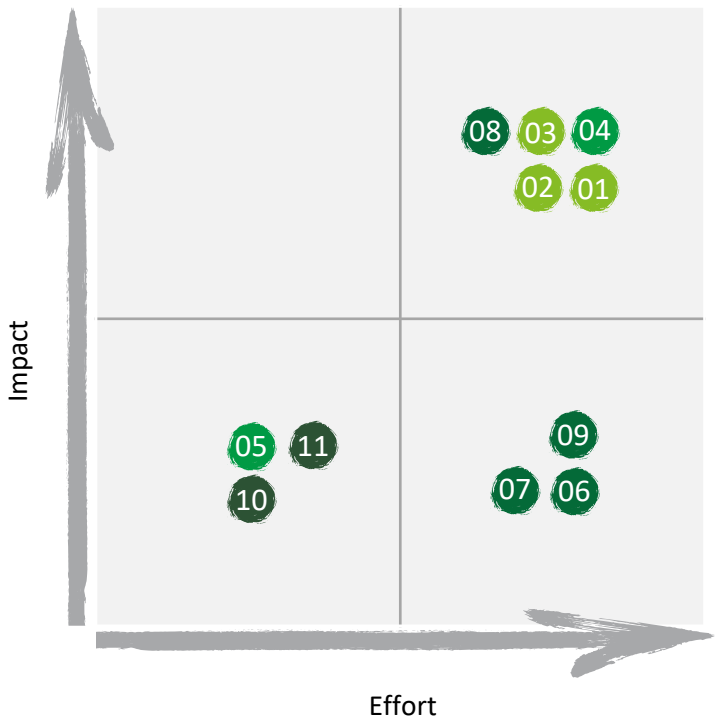
Lower effort, low-impact solutions, such as additional guidance on measurement methods or knowledge sharing, can improve Scope 3 reporting by fostering learning within industries. Although they require some degree of coordination, these solutions can make a valuable impact and address Scope 3 challenges by promoting knowledge exchange and improved understanding.

Conversely, higher effort, low-impact solutions, such as incentives or a long-term government perspective, can drive substantial change through regulatory measures. The effort associated with these solutions highlights the considerable time, commitment and measures required to bring about effective regulatory changes.

The most impactful solutions involve improving data-collection technologies, accelerating standard interoperability and strengthening emission reporting regulations. Although these require significant resources and collaboration, they are crucial for addressing Scope 3 challenges.

Some of these solutions, such as stronger regulations on emissions reporting, are already being implemented. However, accelerated implementation can enable companies to become better-aligned with global sustainability initiatives, thereby enhancing their role in addressing climate change. That is why, despite some progress in these areas, companies are voicing a need for speedier implementation.

Figure 8. Expert-based ranking of solutions considering impact on reporting/measurement and implementation effort



Data collection & measurement technologies

01 Making use of emission measurement software

02 Publicly available life cycle inventory databases

03 Uniform and secure data-exchange platform to streamline emission reporting across the value chain and disclosure standards

Standardisation & guidance

04 Acceleration of harmonisation and interoperability of standards

05 Additional guidance on measurement methods to reduce room for interpretation

06 Use of subsidies to incentivise reporting and reduction

Incentives and long-term perspective

07 Widening the scope of carbon emission reporting regulations

08 Integration of emission reporting criteria into procurement

09 Government long-term perspective on carbon emission reporting and reduction

Knowledge and awareness building

10 Auditor, employee, supplier and user knowledge and awareness

11 Sector-based knowledge sharing

3.1 | Data collection and measurement technologies

Emissions measurement software and databases will become essential tools for overcoming the obstacles to obtaining reliable and comparable Scope 3 data. The use of software and the availability of life cycle inventory databases could improve the efficiency of Scope 1 and 2 emissions measurement for companies that face resource constraints, allowing them to supply more reliable data for Scope 3. As emerging reporting requirements require increasing volumes of data to be shared, it will be essential to have centralised data-exchange platforms through which data and data requests can be shared amongst organisations.

Key takeaways

1. Making use of emission measurement software

A solution for obtaining reliable and comparable emissions data, while reducing the time and resources required to measure and report emissions, is the use of tooling to automate emissions measurement processes. Emissions measurement software supports organisations to calculate their Scope 1, 2 and – where possible – Scope 3 emissions, and is commonly used by companies that are more mature in their sustainability reporting. Making use of such tools enables companies to process their own Scope 1 and 2 emissions data more efficiently, and to provide more reliable information to clients and suppliers for their Scope 3 measurement and reporting. Such software could enable organisations to focus on reducing emissions, rather than deploying excessive resources on measuring and reporting them.

2. Publicly available life cycle inventory databases

In the absence of primary data, a first step could be to use life cycle inventories or databases to estimate Scope 3 emissions, drawing on regional and sector-specific emission impact factors. These inventories serve as a resource that helps organisations estimate their Scope 3 emissions. Making these databases publicly accessible would offer companies valuable resources for estimating their Scope 3 emissions, while sidestepping the costly annual membership fees charged by current databases. First steps have been taken by bodies such as the RIVM, currently for 250 consumer products, with ongoing further development of the database.[1]

3. Uniform and secure data-exchange platform to streamline emission reporting and disclosure standards across the value chain

Although LCA databases can be useful to start measuring Scope 3 emissions, companies eventually need to obtain primary data. This is driven by a growing number of requests from customers and suppliers, amongst others, for emissions data that conforms to a wide variety of formats and standards (e.g., CSRD, CDP, GRI, ISSB), so the need for a secure and standardised data-exchange platform is increasingly important. The platform should define and enforce standardised data formats and reporting protocols for emissions data, enabling data from various sources to be integrated.

Furthermore, it should provide appropriate safeguards and data protection measures *(*e.g., encryption*)* to address the trust issues and contractual constraints that hamper data sharing and emissions measurement within the value chain. Some sectors have examples of such platforms, including a product footprint guideline and data-sharing solution for members of Together for Sustainability (TfS) in the chemical sector, and the Partnership for Carbon Transparency (PACT), hosted by the World Business Council for Sustainable Development (WBCSD).[2,3]

What we have heard:

"Associated systems are not where they should be; we are asking suppliers to reduce their emissions, but we cannot showcase their efforts as we measure Scope 3 emissions on spend-based methods."

1. RIVM milieubelasting voedingsmiddelen
2. Together for Sustainability Initiative
3. Partnership for Carbon Transparency

3.2 | Standardisation and guidance

Establishing standardised methodologies and disclosure standards for Scope 3 data is essential for achieving net-zero emissions. Despite the existence of standardised measurement frameworks such as the GHG Protocol and ISO standards, unanswered technical questions and room for interpretation result in inconsistent calculations. Ongoing efforts are being made across disclosure standards to increase harmonisation, but additional steps are necessary to ensure interoperability and harmonisation. Aligning disclosure standards and providing extra guidance will enhance the overall consistency, uniformity, and accuracy of Scope 3 reporting.

Key takeaways

1. Acceleration of harmonisation and interoperability of standards

In the first half of 2023, substantial steps have been taken globally toward aligning sustainability reporting standards. Key players, including the International Sustainability Standards Board (ISSB) and the European Commission, finalised new disclosure standards, marking significant progress. Regulations and directives are increasingly adopting global standards, such as the European Sustainability Reporting Standards (ESRS) referencing the GHG Protocol, emphasising the importance of uniformity.

A notable trend is the collaborative effort and harmonisation among disclosure standards, seen in initiatives such as the ISSB and ESRS, which aim to reduce the diversity of reporting standards. However, further alignment is necessary – especially in non-EU regions, where standards vary or do not exist.

Harmonising disclosure standards is vital for simplifying reporting processes, reducing data volumes, ensuring global consistency, enhancing comparability, and cutting costs. The European Commission's adoption of the CSRD's ESRS underscores the need for high interoperability between EU and global sustainability standards.

The overarching goal of harmonising Scope 3 reporting standards is to create a clear and easily understandable framework that can support the global operability of Scope 3 reporting. This promotes uniformity among reports – ultimately saving time and resources for reporting entities. As we move forward, continued efforts in global alignment are essential for achieving a more streamlined and effective approach to sustainability reporting worldwide.

2. Additional guidance on measurement methods to reduce room for interpretation

To improve clarity and minimise ambiguity in Scope 3 measurement methods, it is crucial to provide additional guidance on the decision-making processes underlying these methods. Industry initiatives are pivotal: actively testing various measurement approaches, fostering alignment within specific sectors, and enhancing sector-specific understanding of the applicability of measurement methods. This is especially important for small and medium-sized enterprises (SMEs) and businesses in developing countries, which have limited resources to implement Scope 3 calculation methods. Clear guidance on the practical implementation of measurement methods is essential for those entities.

Rather than introducing more standards, the focus should be on refining existing guidance with additional insights. Introducing further standards would risk making reporting obligations into barriers to competitiveness and international trade. Therefore, providing clear guidance on current measurement methods is not only a practical solution, but also a strategic step toward fostering more reliable and standardised emissions reporting practices globally.

What we have heard:

There is no shame in following the lead of the EU in the development of reporting standards. Scope 3 is a cross-border and value chain wide topic, so let's address it that way."

3.3 | Incentives and long-term perspective

Incentives and a long-term perspective provide a collective solution to the difficulties of engaging the stakeholder landscape. Examples of such actions include supply chain subsidies, emissions reporting criteria integrated into public procurement, and a wider scope of carbon reporting regulations. Businesses could benefit from robust regulatory frameworks and clear government perspectives, which help engage the whole value chain in the journey toward net zero.

Key takeaways

1. Use of subsidies to incentivise reporting and reduction

Employing subsidies or business-to-business (B2B) incentives can serve as an indirect encouragement for companies along the supply chain to report their emissions. In particular, subsidies linked to insetting – aimed at reducing GHG emissions within one's own supply chain – motivate stakeholders in the value chain to demonstrate their performance and quantify the improvement achieved, such as the emissions reduced or avoided through the subsidy. In addition, subsidies for companies to start reporting voluntarily on their Scope 1, 2 and 3 emissions (e.g., linked to investment in reporting technologies) could accelerate the number of companies able to report on their emissions.

2. Widening the scope of carbon emission reporting regulations

Extending the obligation on companies to report product emissions can help customers and suppliers make better-informed decisions, and accelerates the availability of primary data. For example, France and Italy have created national versions of the Product Environmental Footprint (PEF) regulation and tools, based on the European Green Deal and new Circular Economy Action Plan.[1,2]

However, some companies prefer a focus on organizational carbon footprint reporting: because this gives a better overview of the overall performance (improvement) and is therefore not limited to a single product.

To further accelerate reporting and reduction efforts, some companies favour a broader scope of companies covered by the EU Emission Trading Scheme (ETS) and Carbon Border Adjustment Mechanism (CBAM). Companies covered by the ETS and CBAM need to monitor and report their Scope 1 and 2 emissions, leading to an increase in the primary emissions data available for companies to use in their decarbonisation and reporting efforts.[3]

3. Integration of emission performance criteria into procurement

Integrating emissions performance data into procurement policies can be a powerful commercial incentive for organisations to report their emissions. To meet eligibility criteria for certain projects, companies would have to substantiate their emissions performance based on measurement and reporting. The government could lead here, by incorporating emissions-reduction criteria into public procurement policies, to encourage companies to start reporting and reduce emissions. In addition, government procurement policies are often directly copied into sector procurement guidelines, and could thereby effectively broaden the scope of companies' engaged in emission reporting. Another trend we have seen is organisations using procurement to engage more suppliers in reporting emissions, by financially rewarding those that have established SBTi-verified emission targets.

4. Government long-term perspective on carbon emission reporting and reduction

It is important for companies to understand the direction of government on future regulations for Scope 3 emissions disclosure and reduction. By gaining insights into this long-term perspective, businesses can proactively prepare, align their strategies with government objectives, and make essential investments. This proactive approach reduces the risks linked to regulatory changes, and facilitates the necessary reallocation of resources.

What we have heard:

"Companies need the government to provide a longer-term view on reduction objectives, but also a sense of security and short-term financial support to enable emission-reduction investments."

1. French Climate and Resilience Law
2. Italian Product Labelling Law
3. The role of supply chain emissions in decarbonisation and compliance

3.4 | Knowledge and awareness building

Awareness extends beyond simply knowing about reporting requirements. It also involves understanding the broader context of sustainability, the potential impacts of Scope 3 emissions, and the role that each stakeholder group can play in reducing emissions. The awareness of auditors, employees, suppliers and users is crucial to achieving reliable Scope 3 data collection and wide engagement in reduction efforts.

Key takeaways

1. Training auditors in Scope 3 emissions accounting

Auditors, as independent third parties, play a critical role in ensuring that companies adhere to Scope 3 reporting requirements, and contribute to greater confidence among stakeholders. With sustainability disclosure regulation such as the CSRD, auditors must have greater knowledge of how to assess companies' adherence to Scope 3 reporting requirements. Investing in training and education for auditors, to build expertise in Scope 3 emissions assessment and sustainability reporting, is key to success.

2. Educating and incentivising employees

Employees must become aware of the specific data points required for Scope 3 reporting, to ensure that data collection is accurate and comprehensive. Such awareness can be developed through internal or external training programmes. Meanwhile, setting emissions targets in line with a net-zero strategy, and distributing these throughout the organisation, increases employees' knowledge and awareness of the relevance of reporting emissions. Target-setting can be done only if there is a sufficient level of reporting and transparency on emissions performance. Engaged and informed employees are more likely to support sustainability initiatives and contribute to the reduction of Scope 3 emissions.

3. Suppliers' educational programmes

Suppliers play a crucial role in providing data about their own emissions and contributions to a company's Scope 3 footprint, so accurate and timely data provision is essential. Our research revealed that smaller companies are often reluctant to report or measure their emissions, so raising their awareness about the relevance and purpose of emissions reporting will improve engagement. For instance, educational programmes on how to interpret reporting standards and make use of measurement software will help engage the full value chain in reporting emissions, and foster ongoing collaboration to reduce them.

4. User awareness on product footprints

Users, which can include customers or other stakeholders, should be made aware of the product's carbon footprint and how their behaviour and choices impact the environment, but also the emissions occurring in the product's life cycle. This awareness can drive users to change behaviour and favour products and services with lower emissions. For example, providing an eco-label on products, or information about product recycling, can help build awareness among (a group of) consumers. Although there are potential legal complexities, such as the number of labels on a product or the risk of greenwashing, transparency on green claims can help build trust with consumers and stakeholders. The EU Green Claims Directive is key to reducing the risk of greenwashing.[1]

5. Sector-based knowledge sharing

Companies in the same industry or sector often face similar challenges in measuring and reporting Scope 3 emissions. These challenges can include collecting data from suppliers, determining allocation methods, and calculating a product's life cycle emissions. Sector-wide collaboration allows companies to pool their knowledge and resources to, for example, refine their methodologies. Those improved (and shared) approaches can lead to more accurate Scope 3 calculations, which in turn enhance the credibility of the whole sector's reporting.

What we have heard:

"We want to show our sustainability efforts and help our consumers understand the impact of the choices that they make, but being vocal on sustainability efforts currently leads to a risk of societal scrutiny."

1. EU Green Claims Directive

Recommendations | 4.0

4.0 Recommendations

Each of the diverse solutions presented in this report has a distinct impact and effort requirement, and their successful implementation and progress will require active engagement from various stakeholders. In this chapter, we examine the roles and responsibilities of relevant stakeholders in driving forward the recommended solutions.

Recommendations for the government

- **Public–private sector collaboration:** Bring together stakeholders (e.g., businesses, public parties, NGOs, policy makers) to explore how Scope 3 emissions can be measured more collaboratively to reduce the burden on individual companies. Governments can facilitate discussions with the private sector to achieve more collaboration and create a broader consensus.[1]
- **Accelerate Scope 3 measurement and reporting tools in Brussels:** Engage with the EU to accelerate the development and implementation of Scope 3 measurement and reporting tools.
- **Scope 3 awareness-raising outside the EU:** Actively engage with and raise awareness of other parts of the world on emissions reporting. This outreach aims to encourage suppliers in those regions to provide accurate and comprehensive data in formats that align with global/EU standards, facilitating interoperability of emissions reporting practices.
- **Offer resources and incentives:** Provide financial and non-financial incentives, such as subsidies, tax benefits, or regulatory leniency, to companies that invest in strategies to reduce (Scope 3) emissions and implement data collection and reporting practices.[1]
- **Raise awareness:** Raise awareness amongst organizations on the importance of Scope 3 emissions reporting. Specifically, SMEs may have limited awareness and human resources with expertise.[2] Pinpointing where tools can be found to collect and report Scope 3 data effectively can help remove barriers to reporting.
- **Integrate emission reporting criteria into public procurement:** Implement emissions reporting criteria into public procurement policies, to indirectly influence businesses to align with sustainability goals and engage more proactively in Scope 3 reduction efforts.

Recommendations for the private sector

- **Make use of available tools for emission measurement:** To start measuring and reporting Scope 1, 2 and 3 emissions, use readily available tools in a structured and easy way. There are many start-ups and other vendors who can provide these tools.
- **Engage in sector initiatives:** To keep up to date with the fast-paced development of Scope 3 emissions reporting, and to promote consistent reporting methods, participate in sector-wide initiatives. Examples are 'Together for Sustainability' and the 'International Dairy Federation'.[3, 4]
- **Set up supplier engagement programmes:** Start supplier engagement programmes to facilitate collaboration and raise awareness of Scope 3 reporting among suppliers. Invite suppliers to join data sharing platforms, which can also be used as a feedback loop to identify challenges and opportunities for improvement.
- **Invest in raising employee awareness:** Invest in educational programmes, for employees in reporting teams on Scope 3 measurement methods, and to raise general awareness about the relevance of Scope 3 emissions and the role of individual.
- **Set emissions reduction targets in line with the global climate goals from Paris:** Establish clear and achievable reduction targets for Scope 1, 2 and 3 emissions. Make these targets specific, measurable and time-bound, and integrate them into your sustainability strategy. Ensure these targets are approved (e.g., by SBTi) and share sub-targets throughout the organisation.
- **Report on a regular basis:** Implement a regular reporting schedule for Scope 3 emissions. Consistent reporting ensures accountability and demonstrates commitment. Enhance your Scope 3 reporting data progressively.
- **Integrate Scope 3 considerations into procurement decisions, R&D, and product design:** Implement Scope 3 emissions considerations in procurement policies, to establish a shared responsibility for emissions reporting with suppliers, and internally to facilitate data collection efforts. Information on emissions can also be used to inform areas of R&D and new product designs.[1]

1. WEF 2023: emission measurement in supply chains
2. European Commission, Annual Report on European SMEs 2021/2022
3. Together for Sustainability initiative
4. International Dairy Federation.

4.0 Recommendations

Recommendations for standard-setters

- **Promote interoperability:** Continue to collaborate with other standard-setting organisations, to promote interoperability of emission measurement and reporting systems, thereby facilitating improved and consistent reporting by organisations.
- **Provide regular updates, guidance and training:** Provide regular updates, guidance and training materials on Scope 3 reporting methodologies, emission factors and measurement techniques, to keep standards aligned with evolving best practices and technologies (e.g., CCS).
- **Develop sector-specific guidance:** Accelerate the development of sector-specific guidance within existing reporting and measurement standards, to account for the unique characteristics and challenges of different industries (where relevant).

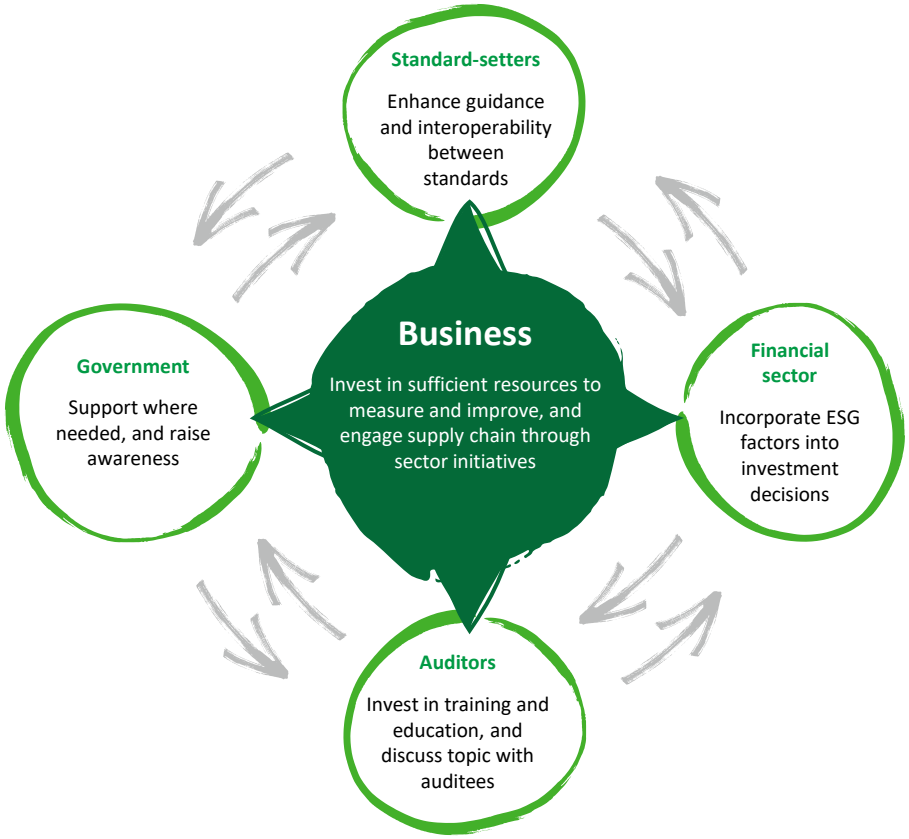
Recommendations for auditors

- **Invest in Scope 3 training:** Invest in training and education for auditors, to build expertise in assessing and reporting Scope 3 emissions. Ensure that auditors understand the complexities and nuances of Scope 3, and are kept up to date with the latest standards.
- **Include Scope 3 considerations in management discussions with auditees.** Auditors can enhance their auditees' awareness about the significance of Scope 3 emissions, recent standard developments, sector trends, and strategies for improving reporting.

Recommendations for the financial sector

- **Encourage transparency and facilitate the reporting process:** Encourage investees and lenders to provide Scope 1 and 2 emissions data in order to facilitate better informed decisions. Invest in tooling to facilitate the reporting process for investees and lenders. Setting up a data sharing platform with peers could be beneficial to not overload clients with information requests.

Figure 10. Summary of recommendations for stakeholders involved in Scope 3



5.0

Conclusion

5.0 Conclusion

Striving for a sustainable and environmentally responsible future presents many challenges and solutions for measuring and reporting Scope 3 emissions, as this report has examined. As we wrap up this exploration, several key takeaways come to the fore.

The world of sustainability measurement and reporting is developing rapidly. While financial reporting standards have taken at least 100 years to develop, sustainability reporting standards have had much less time, and will need longer to achieve the same rigour and address many uncertainties and sub-optimal data. However, we must act now to mitigate climate change, by enhancing transparency on environmental performance, which is why more actors in society are looking into emissions performance and carbon-reduction methods.

Collaboration and engagement amongst stakeholders – standard-setters, regulators, corporations, the financial sector, academics – demonstrates this collective desire to mitigate the environmental impact of business operations. The existence of such a collective effort is testimony to the growing awareness of the relevance of Scope 3 emissions and their importance in sustainability initiatives.

Limited data availability, accuracy and consistency can pose significant obstacles to obtaining high-quality emissions data, but a combination of technology, regulation and collaboration can help value chain partners of all sizes improve the accessibility of primary data or estimates, and increase their willingness and ability to share data. Reaching consensus and receiving guidance on how to interpret measurement methods and reporting standards is essential to reduce ambiguity of reporting. By employing innovative methodologies, fostering transparency, and advancing data-collection techniques, organisations can overcome the obstacles of Scope 3 emissions measurement, and enhance the credibility of their Scope 3 emissions reporting.

Several challenges arise, because the process involves many different parties, with different interests, including supply chain partners and customers, an organisation’s own employees, and its auditors. All might have long-established skills, cultures and behaviours that could be disrupted by the work of Scope 3 measurement and reporting, so a common, long-term goal and perspective can help overcome commercial or habitual sources of resistance. Equally, many parties – including government – can be instrumental in creating that common long-term perspective, which empowers everyone to work together effectively.

The solutions presented in this report emphasise the need for a holistic approach. Emissions management should aspire to more than simply quantifying carbon footprints, and should integrate sustainability into an organisation's core values and strategies. By setting ambitious reduction targets, fostering collaboration across supply chains and investing in sustainable practices, businesses can achieve meaningful progress. Furthermore, the adoption of best practices and standards is an important step toward making Scope 3 emissions reporting more accurate and comparable. As more organisations embrace recognised frameworks, such as the GHG Protocol, the landscape becomes more conducive to meaningful benchmarking and evaluation.

The importance of technology in measuring and reporting Scope 3 emissions is significant. With the development of advanced data analytics and reporting tools, organisations are better prepared to handle the complexities of Scope 3 emissions. These technological advancements facilitate data collection, analysis and visualisation, which empower organisations to make informed decisions and track their progress effectively.

In conclusion, the challenges posed by Scope 3 emissions measurement and reporting are substantial, but they can be met with equally robust solutions. This report has sought to shed light on the many facets of Scope 3 emissions, and to offer recommendations for organisations and governments committed to mitigating our environmental impact. As businesses continue to integrate sustainability into their operations and adopt transparent reporting, the goal of a greener and more sustainable future looks increasingly attainable.

Contributors

Our interviewees represent a diverse range of expertise in Scope 3 emissions, coming from various organisations and backgrounds. We have sought to ensure comprehensive coverage across business and public bodies, including corporate professionals, standard-setters, regulatory authorities and academics.

We would like to thank all the 22 interviewees for the time and input they graciously gave to the creation of this report. One organization requested anonymity and hence is not included in the overview below.

ABN AMRO

Ahold Delhaize

ASML

AkzoNobel

CBRE Investment Management

dsm-firmenich

EFRAG

FrieslandCampina

HEINEKEN

Ingka Group

JDE Peet's

LyondellBasell

MN

Persefoni

Philips

PRé Sustainability

Teijin

Unilever

Vesteda

VNO-NCW & MKB-Nederland

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Appendix

Appendix A: Interconnection of challenges

Diversity of disclosure standards

Reporting of Scope 3 emissions is based on diverse and evolving disclosure standards, requiring significant resources and expertise to stay current with changes. Despite many companies opting for the GHG Protocol Corporate Value Chain (Scope 3) standard for emissions calculations, challenges in interpretation and nuances in reporting approaches frequently lead to discrepancies in Scope 3 emissions disclosures.

Constraints in resources

Organisations:

Many organisations face challenges in interpreting disclosure standards due to a lack of resources and expertise. This difficulty extends to making the necessary assumptions for emission calculations and collecting the required data.
As a result, organisations may experience limited or no reporting, inconsistency in reporting practices, and the reporting of low-quality data.

Suppliers:

Suppliers also require time and expertise to understand disclosure standards and collect accurate data. However, many suppliers, especially smaller ones with fewer administrative staff, often lack these necessary resources.

Difficulties to engage the stakeholder landscape

This leads to limited sharing of data and stakeholder engagement. Another factor influencing engagement can be the sensitivity of sharing data that is perceived as confidential. This lack of engagement across the ecosystem is a major roadblock to transparency, because no single company can achieve this without the others.

Low data quality and availability

Due to challenges in the supply chain, companies struggle to obtain accurate Scope 3 primary data for tracking emissions across their value chains. They often rely on secondary emissions factor databases, but the data provided by these sources may not be specific enough for some company needs, such as decision-making.

Limited integration of insights into business decisions

Less integration of Scope 3 insights into business decisions leads to **slower decarbonisation** and therefore limiting the achievement of the Paris Agreement goals.

Appendix B: Overview of approaches to calculation of Scope 3 emissions

APPROACHES TO SCOPE 3 EMISSIONS CALCULATION[1]:

Basic spend-based approach: One emissions factor applies to entire Scope 3 category

Intermediate spend-based approach: Emissions factors at department level

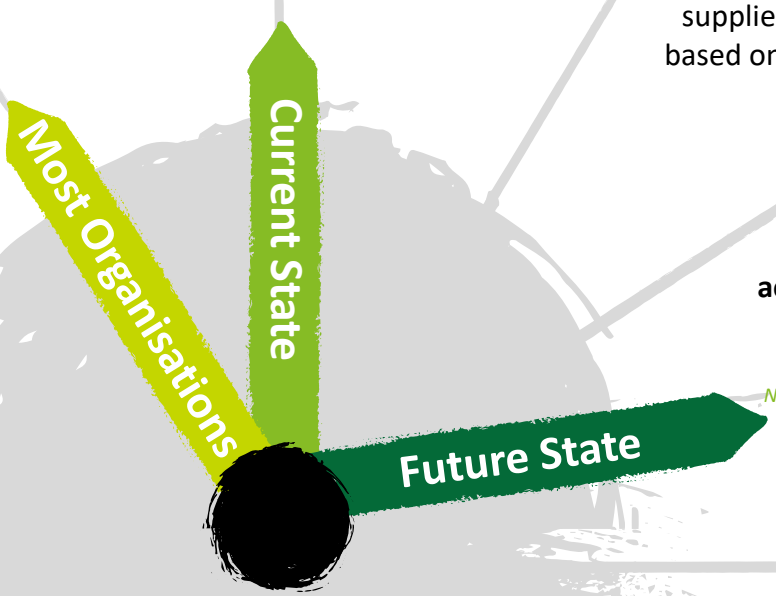
Advanced spend-based approach: Emissions factors at category or sub-category level

Supplier corporate-level data: E.g., allocate % of supplier CDP emissions based on standard factors

No calculation: Company opts not to calculate Scope 3 emissions

Supplier-provided activity-level emissions: To be provided by suppliers

Not yet available for most products



Least rigorous approach, least accurate & usable results

Most rigorous approach, most accurate & usable results

1. Deloitte

Appendix C: Overview of standards and regulations

Amongst emissions standards and regulations, there are significant differences of functionality, scope and geographic focus. There are five main functions of standards: regulations, reporting standards, measurement guidance, and target-setting guidance standards. Some standards fulfil multiple functions, but most provide guidance on just one aspect. Standards also differ in their inclusion of upstream and downstream emissions – whether they apply to all users or EU only, for example – and on guidance about product or organisational emissions. The table below provides an overview of some leading standards and regulations.

	Functionality				Supply chain		Region		OCF vs PCF		
Standard/Regulation	Regulation	Reporting standard	Measurement guidance	Target setting guidance	Upstream	Downstream	European	International	Organisational	Product	**Sources**
CSRD (EU Corporate Sustainability Reporting Directive)	■				■	■	■		■		European Commission
CBAM (EU Carbon Border Adjustment Mechanism)	■				■		■	■		■	EU Commission; Deloitte
SFDR (Sustainable Finance Disclosure Regulation)	■				■	■	■		■	■	SFDR
GRI (Global Reporting Initiative)		■			■	■		■	■		GRI
TCFD (Task Force on Climate-related Financial Disclosure)		■			■	■		■	■		TCFD
CDP (Carbon Disclosure Project)		■			■	■		■	■		CDP; CDP
ISSB (International Sustainability Standards Board) - IFRS S2		■			■	■		■	■		IFRS
Partnership for Carbon Accounting Financials (PCAF)		■	■	■	■	■		■	■		PCAF
ISO 14064			■		■	■		■	■		ISO
ISO 14067, 14040, 14044			■		■	■		■		■	ISO, ISO, ISO
Organisational Environmental Footprint (OEF – EU standard)			■		■	■	■		■		European Commission
Product Environmental Footprint (PEF - EU standard for LCA)			■		■	■	■			■	European Commission
PAS 2050 (British Standards Institute)			■		■	■		■		■	BSI Group
GHG Protocol - Corporate Value Chain (Scope 3) Standard			■	■	■	■		■	■		GHG Protocol
GHG Protocol - Product Standard			■	■	■	■		■		■	GHG Protocol
GHG Protocol – Land Sector and Removal Guidance			■		■			■	■		GHG Protocol
SBTi (Science Based Targets initiative)				■	■	■		■	■		SBTi
SEC Climate Risk Disclosure (proposed)	■		■		■	■		■	■		SEC

Legend

Not included	Included

Deloitte.