

Scope 3 Emissions in the UK Reporting Landscape

Consultation Response - Summary Version

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1. Introduction

In this paper we have summarised our response to the UK government's consultation on Scope 3 emissions in the UK reporting landscape.

Storebrand Asset Management (SAM) is a Norwegian asset management company providing a broad range of investment services to over 300 institutional clients and managing approximately £87.1 billion as at 30 September 2023. SAM was the first Norwegian company to establish a sustainable investment department in 1995 and we have one of the most experienced environmental, social and governance (ESG) teams in the Nordic region.

SAM manages £1.3bn in assets on behalf of UK clients, in products designed to reduce climate-related investment risk in both global and emerging markets equities. We have engaged closely with the UK institutional investor market on climate risk management, reporting and our product offering.

At SAM, our flagship, climate-aware equity product range (the "Plus Funds") includes both Global Equities and regional strategies in Emerging Markets, Swedish Equities and European Equities. It is designed and led by a climate change specialist portfolio manager and managed by a team with a proven ability to successfully combine portfolio construction expertise with sustainability data and insights. The same team has managed the range since the launch of the first, global equity, vehicle in 2016.

The Plus Funds are market leading and designed to evolve with ever improving climate science, policy and data. This means they are at the forefront of the SAM offering on climate risk minimisation and reflect our best ideas in this area. For this reason, this response is focused on the way we manage and report on climate change risks in the SAM Plus Fund range.



2. Summary

It is imperative that companies measure, assess and seek to reduce their value chain emissions to achieve real world emissions reduction in line with the goals of the Paris agreement. We encourage our investee companies to report their Scope 3 emissions and to set verified Science Based Targets.

However, our research shows that Scope 1-3 emissions data can provide a misleading indicator of transition risk for investors when applied indiscriminately across all sectors and industries. Emissions data, in particular Scope 3 (alone or aggregated with Scopes 1 & 2), is a **necessary but not sufficient** indicator of company transition risk. Standardisation of risk metrics is crucial for comparability within sectors and industries but Scope 3 is a complex category which is currently inconsistently applied by both companies and data providers. Further, the GHG Protocol Scope 3 standard does not offer a complete picture of forward-looking transition risk for companies involved in delivering climate solutions.

Given the focus of the ISSB is financially material risk for investors, we believe some adjustments need to be considered in the application of Scope 3 data for financial risk reporting and capital allocation.

For Scope 3 numbers to be decision useful for investors there would need to be more emphasis on how climate transition risk can be assessed and compared across a portfolio of companies.

There are four additional pieces of emissions-related information and guidance, that are not required within IFRS S2, that we believe would be valuable for investors, users of accounts and other stakeholders:

1. **Separate emissions reporting according to Scope and type.** To avoid confusion around good and bad emissions from a financial climate risk perspective, investors can report Scope 1 & 2 emissions separately from Scope 3 and separate climate solutions companies from other companies in their reporting. We propose producing these numbers alongside the combined metrics required in regulation, to ensure that reporting is

decision useful as well as meeting regulations. Investors can then avoid penalising climate solutions companies for emissions in portfolio construction or target setting.

2. **Provide clearer and more granular guidance for companies on how to report emissions in a consistent and comparable manner.** As illustrated in recent research from King's College London¹, emissions factors used in company reporting are varied and often inaccurate. The researchers highlighted that this can lead to "*gaming undermining effectiveness of climate finance*". They made five policy recommendations to address this, including greater transparency on methods, datasets and coverage of emissions calculations as well as quality assurance regulations. This should also be combined with transparency from data vendors on how each emissions number is calculated, which categories are included/excluded and the methodology for estimations.
3. **Raising awareness of Scope 4 emissions** would also be valuable, both to avoid potential for corporate greenwashing associated with the avoided emissions concept and to prevent penalising climate positive products and services for their Scope 3 emissions. However, given the complexity of Scope 3 reporting and problems associated with corporate reporting of the Scope 3 category, we do not think that standardised or reliable company reported Scope 4 data is likely to solve these issues in the short to medium term (see text box in Section 3).

We argue that a more sensible climate solutions definition is whether the IEA net zero scenario, or similar pathway, predicts strong growth for the product in question. Use of net emission scopes calculations, or other single figure metrics, is likely to project one-dimensional quantities out of a scenario. Any such reduction to a single number per company is likely to be error prone and lead to misinterpretations of risk.

4. In the absence of reliable Scope 4 guidance and data, a better near-term solution would be to **adjust the Scope 3 emissions accounting**

¹ [New research shows how companies could be gaming their reported greenhouse gas emissions - King's College London \(kcl.ac.uk\)](https://www.kcl.ac.uk)

framework and guidance provided by the GHG Protocol. Category 11, use of product, could be separated into two parts:

- a. Category 11a would deal with combustion-related and GHG leakage emissions
- b. Category 11b would address indirect emissions from the shift to electrification.

Investors could then choose to ignore Category 11b to improve alignment between Scope 3 emissions and company climate risk. This approach requires specialist oversight to ensure proper distinction between categories of Scope 3 emissions and avoid further unintended consequences. Some Scope 3 emissions, such as electricity generation, may be out of the control of the company in question but will be expected to reduce over time as the grid decarbonises.

Other Scope 3 emissions, such as F-gases in heat pump technology, are a potential area for engagement with companies and policymakers to ensure good practice, avoiding leakages and managing end of life disposal, and ultimate phase out.

3. Consultation Response Detail

3.1 The current role of Scope 3 information

Scope 3 emissions data plays an increasingly important role in the way we deliver and communicate the portfolio construction of our climate aware fund range to clients.

We have extensive experience of working with climate data in portfolio construction, having launched the Storebrand Global ESG Plus strategy in 2016. The strategy is managed by a climate specialist portfolio manager and built to evolve over time as climate science, policy and data develops. Owning and evolving the model, and managing the strategy with expert risk oversight, means we have developed a unique ability to identify issues with implementation of climate data sets such as unintended consequences delivered by “passive” climate index trackers.

We have written a series of whitepapers on this topic, as well as policy consultation responses in relation to reporting requirements for pension schemes². Most recently we have commented on the new ISSB IFRS2 proposals for Scope 3 reporting and engaged with the GHG Protocol on their Scope 3 standard.

We report our portfolio Scope 3 emissions to clients on a quarterly basis in our Climate Metrics report. However, we highlight to our clients that Scope 3 emissions data is not of a suitable quality for decision making or portfolio construction in relation to climate related risks and opportunities. We also separate Scope 3 emissions from Scopes 1 & 2 and we disaggregate climate solutions companies to report their emissions separately.

We find that different data vendors produce very varied results on company Scope 3 data, so **the choice of emissions data provider has a meaningful**

² See the ‘Climate Data Discussion’ section on the Storebrand Insights page

impact on reported numbers at a portfolio level. This can have capital allocation consequences if data is uncritically applied in portfolio construction. We report all Scope 3 categories, to the extent that our data provider has company reported data or uses estimates to fill data gaps.

3.2 Challenges with the ISSB's assessment of the value of Scope 3 information

We agree that Scope 3 emissions information is valuable, but it is often inaccurate and mis-purposed by investors. **The new regulatory focus on using Scopes 1-3 emissions as a leading indicator of financial risk for investors is in some cases misguided.**

The breadth and complexity of corporate Scope 3 emissions categories, and the resulting diversity in calculation methods, make comparisons – even within sectors – problematic. This reduces the value of Scope 3 information for investors as its inaccuracy means it is not decision useful, certainly not in systematic portfolio construction, such as climate index construction.

For certain products and services, in particular those related to the electrification of the low carbon economy, Scopes 1-3 emissions data does not provide a complete picture of investor risks and opportunities without an understanding of the concept of “avoided emissions”, often referred to as Scope 4. Avoided emissions are emissions reductions that occur outside of a product’s life cycle or value chain, but as a result of the use of that product. Unlike Scopes 1-3, there are no officially recognised standards for the measurement and reporting of avoided emissions.

This means the “*potential information gap for investors to fully assess climate-related risks and opportunities*” highlighted by the consultation paper will not be filled by Scope 3 emissions disclosures, even if data quality is perfect. **Low Scopes 1-3 carbon emissions is not equal to high alignment with the transition opportunity – in fact, the opposite may be true.**

Take the example of heat pumps: they are described by the IEA³ as the solution to household heating issues in the context of climate mitigation, replacing gas boilers. Even though heat pumps offer a sustainable solution to heating problems, and the IEA predicts huge global growth in the market, heat pump companies report high Scope 3 emissions. The same goes for companies making other products that will be required in an electrified economy, such as LED lights and parts for electric vehicles (EVs). The electricity powering these products is often being reported based on the emissions of a fossil-fuel-powered grid. There is no standardised emissions factor offering regional granularity, or accounting for future grid emissions reduction, for companies to apply in their 'use of product' Scope 3 reporting.

Therefore, if an investor focuses on carbon emissions data in its portfolio construction, without accounting for the grid dependence of heat pumps and other products for economy electrification, **they may decide not to invest in solution companies that are vital to the low carbon transition, based on these companies' high Scope 3 emissions.**⁴ This shows how integrating Scope 3 emissions, without accounting for the avoided emissions (Scope 4) from using new technologies rather than old combustion dependent technologies, might result in climate solutions companies being underweighted or even screened out.

The value of Scope 3 information for investors is therefore limited not only by data quality but by an absence of Scope 4 information.

3.3 The approach to Scope 3 reporting contained within IFRS S2 and the ISSB's approach to materiality

On the recent launch of its sustainability disclosure standards, IFRS S1 and IFRS S2, the ISSB stated its aims to "*improve trust and confidence in company disclosures about sustainability to inform investment decisions.*"⁵ This move by the ISSB is a step forward in creating standardised corporate climate disclosures

³ [The Future of Heat Pumps – Analysis - IEA](#)

⁴ [The Paris Alignment Paradox: Scoping Out Solutions - www.storebrand.com](http://www.storebrand.com)

⁵ [IFRS - ISSB issues inaugural global sustainability disclosure standards](#)

targeted at providing financially material, decision-useful information for investors. Although adoption across global jurisdictions remains a work-in-progress, and the ISSB focuses solely on single materiality in contrast to the double materiality approach being taken in European standards, the IFRS S2 standards serve as a useful global baseline for company reporting.

However, climate datasets currently require keen scrutiny by investors. Climate risk is an evolving concept and the regulatory environment for companies and investors is changing rapidly. The data and regulations regarding corporate climate risk disclosures must also evolve and improve on this baseline, to avoid unintended consequences and remain useful and relevant.

Storebrand Asset Management's research on systematic incorporation of corporate climate data into portfolio construction has highlighted risks from uncritical use of corporate climate data. Our latest research shows that Scopes 1-3 emissions data is not necessarily sufficient for understanding company or portfolio climate transition risk, or 'Paris alignment'. This is because the aims of the GHG Protocol Scope 3 guidance, and of the companies reporting their emissions inventories, are not necessarily aligned with those of investors.

For many sectors, like fossil fuel production, adding Scope 3 gives a far better proxy for a company's climate risk than using Scope 1 and 2 alone, and Storebrand welcomes the reporting of Scope 3 data from our investee companies. **However, for companies offering climate solutions based on electrification, adding Scope 3 gives a highly distorted impression of climate risk,** both for the company in question, but also for an investment portfolio investing in the company. This means a more sophisticated analysis of climate risk is required, particularly for climate solutions investments, as emissions data alone can provide a misleading indicator.

Given the focus of the ISSB is *financially material* risk for investors, we believe some adjustments need to be considered in the application of Scope 3 data for financial risk reporting and capital allocation. We have provided some suggestions for improvements.

3.4 The use of the GHG Protocol for the purposes of Scope 3 reporting within IFRS S2

Our experience indicates that the use of the GHG Protocol for the purposes of Scope 3 reporting within IFRS S2 will **not** necessarily lead to comparable and consistent reporting that is useful for investors and users of accounts. We have provided an explanation with examples below.

The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard is designed as a basis for companies to make reductions in their own value chains. It does not aim to produce statements about absolute emissions and individual or relative company transition risk exposure.

The SBTi describes Scope 3 emissions as *"both the most significant and most challenging source of emissions from businesses"*⁶. SBTi's increased emphasis on Scope 3 inventories and targets⁷ and development of cross-sector Scope 3 guidance for corporate target-setting align well with the GHG Protocol's aims – facilitating real world emissions reductions that can be actioned by companies. However, **the use of Scope 3 as a climate risk measure in portfolio construction, as proposed by financial market regulators and industry participants, is poorly judged.**

The main challenge, from both a corporate value chain assessment and climate risk reporting perspective, is the broad and complex nature of Scope 3 emissions. There are 15 categories underlying the Scope 3 standard, covering a diverse range of upstream and downstream activities, and the materiality of these categories differs substantially across industries.

This variability and complexity makes comparisons difficult, and contributes to the poor data quality issue. When companies report Scope 3 emissions, if at all, they may be selective about which categories to assess and publish. They may

⁶ <https://sciencebasedtargets.org/blog/scope-3-stepping-up-science-based-action>

⁷ <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>

also use different underlying emissions factors and methodologies to calculate the same emissions categories, leading to varied results – and data vendors that collate and provide the company emissions to investors take different approaches to dealing with missing or erroneous data points and outliers. This presents multiple opportunities for data errors to arise - in both estimation and interpretation, we have provided some examples below to illustrate the problems for investors.

3.5 Examples of data errors that can create problems for investors

3.5.1 Estimation Errors:

There are multiple data providers available to portfolio managers for corporate emissions data. The majority will use CDP as the initial data source but corporate emissions reporting remains patchy and inconsistent, meaning there are a lot of data gaps, even for Scope 1 and 2 emissions. Vendors will differ in their methodologies for estimating missing data points. Our chosen provider estimates Scope 3 from production data for fossil fuels and automobiles, for other missing data the estimation is read-across from other, similar companies which are reporting the relevant data point. This is a reasonable approach but can lead to unintended consequences.

For example, Cameco Corporation produces uranium for use in nuclear energy power generating plants. Nuclear power produces very low emissions per kwh. There are of course many challenges with nuclear power, including nuclear waste handling, but carbon emissions is not one of them.

Cameco has close to 100% green revenues, according to our green revenues data provider, but very high estimated Scope 3 emissions intensity from our CO₂ data provider. In fact, its carbon intensity figure is greater than all Exploration & Production and integrated oil and gas companies in MSCI World – the very high number is due to huge estimated

'use of product' emissions. It could be that emissions are in this case read-across based on the company's position in the energy sector. The company itself does not report its Scope 3 emissions, and an alternative data vendor estimates far lower Scope 3 numbers for Cameco. Unfortunately, although methodologies are sometimes made available by data vendors, it is not always clear exactly what the issue is when a number appears erroneous or misaligned, without independently identifying and verifying each estimated figure that appears unusual to the trained eye. This illustrates that **Scope 3 datasets are not presently suitable for passive or systematic application in portfolio construction as they can lead to incorrect assumptions about company risk that result in allocation decisions.**

3.5.2 Reporting Errors:

We often discover outliers in emissions data and seek to verify the results before applying it in portfolio construction. This is a particular challenge with Scope 3 data due to the complex nature of the category for reporting purposes, but it is worth highlighting that Scope 1-2 data quality also remains problematic.

In the Storebrand Plus funds, we apply Scope 1 & 2 carbon emissions data in portfolio optimisation except for companies which we have designated as 'climate solutions' companies. We do not require climate solutions companies to 'decarbonise' or set science-based targets in the optimisation process so that they are given a 'free pass' in portfolio construction, subject to other risk optimisation requirements.

Shanghai Putailai New Energy Technology Co Ltd is a China-based company involved in research and development of new battery technology and materials. It is a climate solutions company in our Emerging Markets Plus Fund and so it is not subject to emissions optimisation in the portfolio construction process. However, we do report total portfolio emissions and separately report the emissions of the climate solutions section of the portfolio. We recently identified an outlier in the Scope 1-2 emissions data for Shanghai Putailai New Energy Technology Co Ltd in our portfolio system, whereby the data for 2022 appears to be out by a factor of ten.

This erroneous figure impacts the total reported emissions of our portfolio but, importantly, could lead to a systematic exclusion or underweighting of this company delivering Paris-aligned technology if the data was taken at face value.

It is worth remembering that the Climate index funds which have seen huge asset flows over the past few years⁸ allocate capital based on a systematic application of Scopes 1-3 emissions data without risk oversight.

3.5.3 Discrepancies between vendors:

We have chosen our provider of portfolio emissions data based on our assessment of data quality, including their estimation methodology. However, we have access to other emissions data sets from alternative providers and this often allows us to conduct useful sense checks on certain data points which appear odd or out of synch.

Recently we were researching the relative emissions of chip makers, which have high Scope 3 figures due to energy emissions in their 'use of sold product' category. Our data provider reported Scope 1-3 emissions in 2022 for NVIDIA that were 25x higher than those reported for Intel. Another data provider was reporting that Intel had higher carbon intensity figures than NVIDIA.

Even if the company reports according to the GHG Protocol guidance, there are many potential reasons that their data is not comparable with competitors. For example, companies can use different emissions factors and make assumptions about the use of renewable energy in their value chains, which has a huge impact on the 'use of product' emissions. Tech companies operating data centers are big buyers of renewable electricity. Intel reports two figures in their Scope 3 use of product category, which is the dominant contributor to its total emissions⁹. If Intel "takes indirect credit" for clients' use of renewable energy, then their Scope 3 use of sold

⁸ [Investing in Times of Climate Change 2023 | Morningstar](#)

⁹ <https://csrreportbuilder.intel.com/pdfbuilder/pdfs/CSR-2022-23-Full-Report.pdf>

product was 16.6m tons in 2022, but with this feature turned off the number was 30m tons.

In this case, although the number for NVIDIA from our data provider seemed relatively high, given their revenues were half that of Intel's in the same period, our assessment was that NVIDIA would reasonably have a higher Scope 3 figure. The reason is that energy consumption emissions are higher for chips used in "always-connected" devices such as data centres, AI, bitcoin mining etc; whereas energy consumption emissions are generally lower for chips used in personal devices¹⁰.

On further exploration it became clear that the second data provider had simply passed across the company reported figures. Intel had reported their Scope 3 use of product and NVIDIA had not – but the vendor had not identified the discrepancy or attempted to estimate the missing figure. This shows that Scope 3 data is not comparable between companies if some are reporting their use of product emissions and others are not. It also illustrates that if two asset managers use two different data providers for Scope 3 emissions and systematically incorporate them into portfolio construction to 'decarbonise' a portfolio then one could end up with a higher weight in NVIDIA and the other with a relatively higher weight in Intel. But both managers would provide the same explanation for their opposite active positions.

3.5.4 Interpretation errors / when Scope 3 does not indicate 'climate risk':

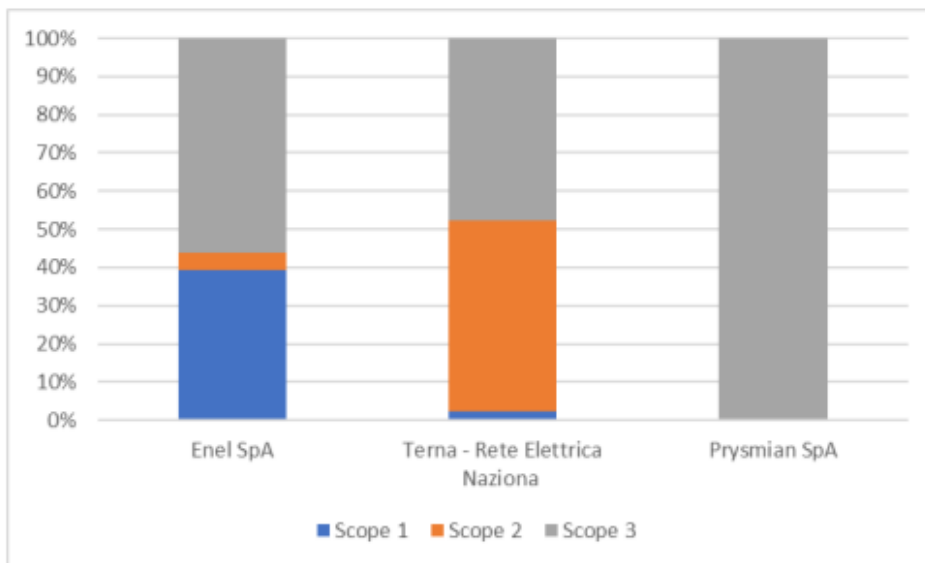
Many of the 'climate solutions' companies that we invest in have high reported carbon emissions. In these cases, the emissions numbers can be a misleading indicator of 'transition risk' and therefore are not sufficient for investment decision making. Rather, it makes sense to consider alignment of company products and services with the goals of the Paris agreement.

¹⁰ Chasing Carbon: The Elusive Environmental Footprint of Computing. Gupta et al (2022) [Chasing Carbon: The Elusive Environmental Footprint of Computing \(ucl.ac.uk\)](https://www.ucl.ac.uk/energy-environmental-research/working-papers/2022/chasing-carbon)

We think of this as a **climate beta, i.e., which companies will benefit if the Paris agreement is implemented more quickly than expected.**

The Italian electricity value chain provides a good illustration of the issue. Take three companies in the Italian electricity value chain: Enel, Terna and Prysmian.

Figure 1 – Breakdown of emissions intensity for three companies in the Italian electricity value chain

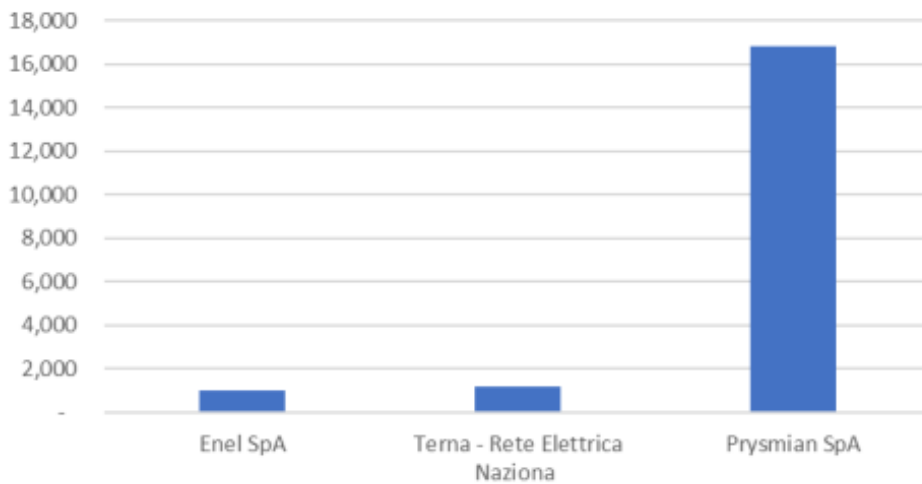


Source: Storebrand analysis, Bloomberg, October 2023.

Enel produces electricity from a variety of sources, including renewables, but also thermal coal. It has reasonably high Scope 1 and 3 emissions intensity. Terna is a transmission operator of the grid. It has reasonably high Scope 2 and Scope 3 emissions intensity, as we would expect. Prysmian produces cables for transmission and distribution of electricity. There is unavoidable loss of energy in transmission, determined by the thickness of the cables. This loss counts as Scope 3 for Prysmian. This Scope 3 number is an order of magnitude larger (15 times) than the power producer (Figure 2). However, as the economy is electrified, and the grid is rapidly expanded and decentralised, then Prysmian's sales should really benefit, and much more so than the other two companies. Hence, Prysmian is a Paris-aligned investment opportunity in our opinion.

It is worth noting that these are company reported and not estimated numbers. If an investor were to judge the transition risk of these three companies based on their total Scope 1-3 emissions intensity, and allocate capital on that basis, then Prysmian would appear a worse or more risky investment, in stark contrast to the outlook for global growth in grid cables for a net zero scenario.

Figure 2 – Emissions intensity (Scope 1-3) for three companies in the Italian electricity value chain



Source: Storebrand analysis, Bloomberg, October 2023.

3.5.5 Data variability

Danieli is a low-carbon steel producer combined with a manufacturer of steel plants. They make the whole range of steel production machinery, from high to low carbon technology. Their Scope 3 number has varied enormously from year to year - by a factor of 10 in both directions. Again, this number could dramatically impact capital allocation if Scope 3 data was uncritically used in portfolio construction. We wanted to understand the reason behind the huge variation and whether it was accurate data.

The company confirmed that the difference in annual emissions is due to variations in the steel production technologies of the steel mill hardware they sell each year. If they sell hardware for a blast furnace then the Scope 3 emissions are substantially higher than hardware for an electric arc

furnace. The Danieli emissions data is prepared according to the EU Taxonomy and GRI principles and validated by an independent auditor - the seemingly crazy variations in Scope 3 from year to year reflects reality. But: the climate risk of the company did not change by 10x from year to year, offering another illustration of how Scope 3 can be a misleading indicator for company climate risk.

These examples show that the use of the GHG Protocol for the purposes of Scope 3 reporting within IFRS S2 will not necessarily lead to comparable and consistent reporting that is useful for investors and users of accounts.

For Scope 3 numbers to be decision useful for investors there would need to be more emphasis on how climate transition risk can be assessed and compared across a portfolio of companies. This could be helped by:

- Clearer and more granular guidance on which categories should be reported, with certain categories being mandatory depending on the type of company / sector
- Standardised emissions factors which account for regional use and grid decarbonisation over time
- Greater transparency from data vendors in how Scope 3 numbers are sourced, estimated and calculated on a company by company basis
- An appreciation of so called 'Scope 4' or avoided emissions so that climate solutions companies and technologies are not unreasonably penalised

3.6 Potential knock-on consequences from using the ISSB's approach to Scope 3 reporting

The ISSB's approach to Scope 3 reporting has the potential to direct investors away from genuinely climate aligned portfolios and towards products that emphasise a simplistic portfolio decarbonisation using Scopes 1-3 emissions. This is the result of an interaction with EU regulations whereby 'Paris Aligned Benchmarks' (PABs) and 'Climate Transition Benchmarks' (CTBs) are defined by

decarbonisation trajectories incorporating Scopes 1-3 emissions. **Passive alignment with the goals of the Paris agreement is not possible, largely due to policy (and scientific) uncertainty but also due to imperfect data and misguided portfolio construction signals from a focus on incomplete and incorrect company emissions data.** We are concerned that these EU defined and regulated benchmarks could become the regulatory measure of portfolio Paris alignment and that this would penalise portfolios that invest in climate solutions.

Our experience in working closely with evolving corporate climate data over the past 8 years has taught us that **expert oversight is necessary to avoid unintended consequences from systematic application of datasets.** We also urge investors to consider this Scope 3 issue when creating their TCFD/ISSB reports and setting targets for managing portfolio climate-risk. **A portfolio level Scope 3 figure does not give a complete picture of climate risk exposure and incorporating Scope 3 to an emissions reduction target can lead to counterintuitive results.**

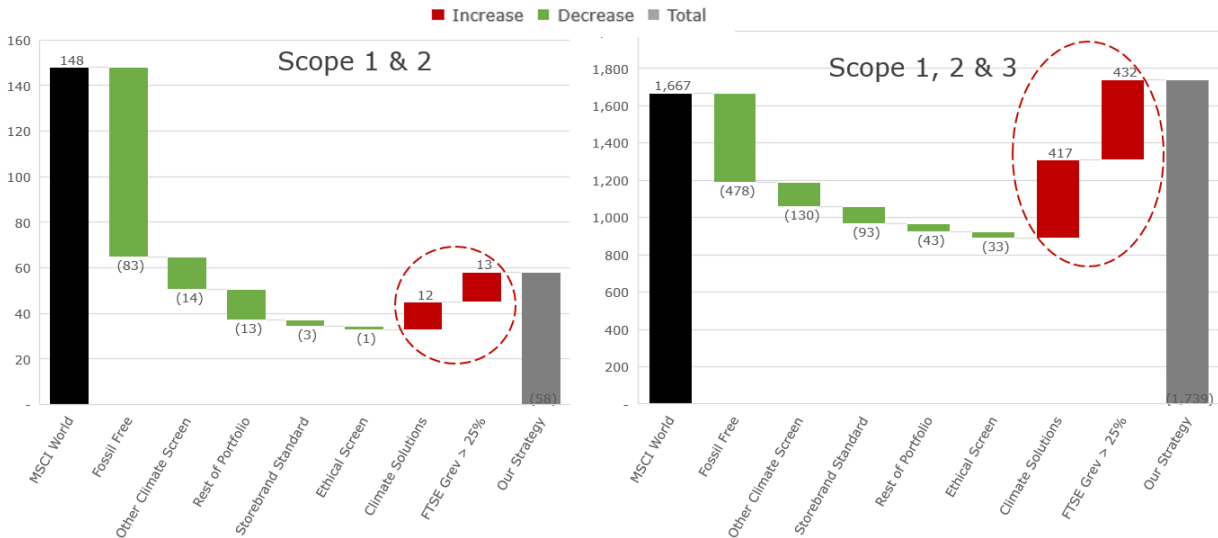
We can illustrate this using data for our Storebrand Global ESG Plus strategy. The waterfall chart in Figure 3 shows the step-by-step emissions impact from incorporating our various portfolio construction metrics. In the chart on the left, we apply Scope 1 and 2 emissions to our risk optimisation framework, as we do in practice, and show that our strategy has far lower emissions intensity than the MSCI World Index. These reductions come from screening climate negative companies, with a marginal offset from incorporating a whitelist of dedicated climate solutions companies plus tilting towards companies with higher green revenues. On the right-hand side, we show emissions for the same portfolio but adding Scope 3 data, for reporting only¹¹.

Again, we achieve a reduction in emissions intensity vs the index by screening climate negative positions. But, the impact of increasing our portfolio weights in

¹¹ Scope 3 data is not used in risk optimisation but is used by the portfolio manager to inform and adjust the portfolio based on a specialist climate risk assessment.

climate solutions companies and green revenues is so large that our portfolio ends up with almost the same carbon intensity as the index.

Figure 3 – WACI Scope 1-2 and 1-3: MSCI World vs Storebrand Global ESG Plus



Source: Storebrand, Trucost. WACI computed by scaling revenue in mGBP, 30.09.23.

The same paradox holds true when we look at pooled fund data in Morningstar. When we sort global equity funds by emissions intensity (Scope 1-3), we find that half of the 20 funds with the highest intensity claim alignment with a sustainability theme. These funds also tend to have low fossil fuel involvement and high carbon solutions involvement. We must go way down the list, to fund number 150, to find the first MSCI World Energy tracker, which has a 95%



3.7 Additional emissions or energy-consumption related data that is not required within IFRS S2 that we believe is valuable for investors, users of accounts and other stakeholders

We have analysed Scope 3 emissions in the MSCI World Index¹² and found the major sources, for almost 60% of companies, to be from either Category 1 (purchased goods and services) or Category 11 (use of sold products).

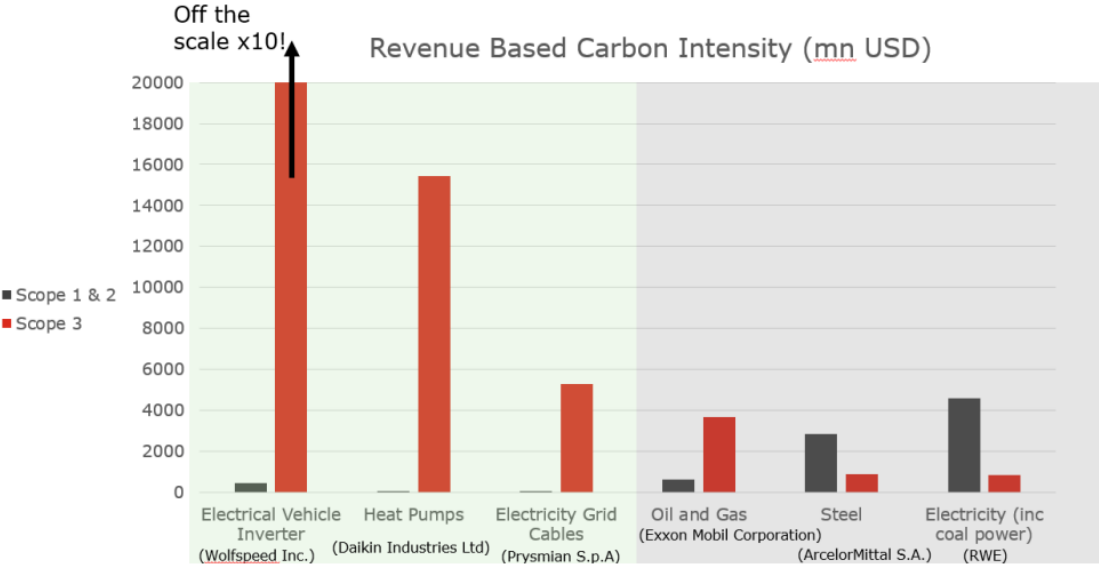
We believe a reassessment of Category 11 may unlock a solution to the use of Scope 3 data as a portfolio climate risk metric. We will illustrate this with an example.

In Figure 4 we have plotted the Scope 1 & 2 and Scope 3 emissions of three climate solutions companies vs three companies in 'high climate risk' industries. Prysmian and Wolfspeed, as well as heat pump producer Daikin Industries, have very high Scope 3 emissions compared to high climate risk products such as oil and gas.

Use of sold products is the key source of Scope 3 emissions for each of the three climate solutions companies in Figure 4, as well as the oil and gas company, Exxon Mobil. The projected emissions from the lifetime electricity use of climate solution products, such as EV inverters, heat pumps and grid cables, are leading to huge Scope 3 numbers. It is clear that **Scope 3 emissions is not a good risk measure for climate aligned capital reallocation when applied to economy electrification, which has a climate positive outcome.**

¹² Storebrand analysis of 968 companies in MSCI World (accounting for 76% of index weight) with CDP sourced Scope 3 data in Bloomberg, as at March 2023.

Figure 4 – Reported carbon intensity ≠ climate transition risk



Source: Storebrand, Trucost. Company data for Financial Year 2020. Note: EVIC based Carbon Intensity metric required by EU for PAB/CTB regulations. We use revenue-based carbon intensity in portfolio construction and client reporting due to volatility and growth style bias associated with EVIC based metric, as observed in our internal research.

The reported Scope 3 data from each climate solutions company dwarfs the Scope 3 data from Exxon, with the Wolfspeed number being way off the chart and requiring a re-scaling for accurate representation. Wolfspeed has the highest Scope 3 emissions of all companies in the MSCI World Index¹³ but is one of the smallest companies in the Index, it was only included November 2022 and has recently fallen out again. It is a clear climate solutions company; 85% of its revenues are green¹⁴ and it is a leader in SiC (Silicon Carbide) power devices, a 'major disruptor' in the semiconductor industry which addresses concerns over range limitations for Electric Vehicles (EVs)¹⁵.

The recent annual Global EV Outlook from the International Energy Agency (IEA) reported that electric car markets are growing exponentially, breaking new

¹³ Based on a revenues-based intensity metric. The EU PAB regulation requires EVIC based intensity but this is subject to share-price induced volatility and a growth-style bias, leading us to prefer a revenues denominator

¹⁴ Source: FTSE Green Revenues as at 31 December 2022

¹⁵ [Delivering on the EV Range Extension Promise of SiC in Traction Inverters | Analog Devices](#)



records with continued momentum¹⁶. Wolfspeed expects massive sales growth triggered by adoption of SiC and this growth must be built into its Scope 3 emissions reporting as outlined in Figure 5. Companies like Wolfspeed, whose products facilitate economy electrification, must report the emissions from the sum of electricity consumed across the lifetime of their products. Companies often estimate those lifetime emissions using a CO₂e emissions factor based on the existing, fossil-powered grid. This makes sense as a measure to understand where value chain emissions reside, so that companies seek cleaner, greener providers in their value chains. It makes sense as a measure to understand the financially material risk associated with investing in fossil fuel companies, as their product must ultimately be replaced by new energy sources. It does not necessarily make sense as a measure of climate risk associated with investing in companies facilitating electrification.

Figure 5 – Calculation formula for direct use-phase emissions from products that directly consume energy (fuels or electricity) during use

CO₂e emissions from use of sold products =

sum across fuels consumed from use of products:

$\Sigma (\text{total lifetime expected uses of product} \times \text{number sold in reporting period} \times \text{fuel consumed per use (kWh)} \times \text{emission factor for fuel (kg CO}_2\text{e/kWh)})$

+

sum across electricity consumed from use of products:

$\Sigma (\text{total lifetime expected uses of product} \times \text{number sold in reporting period} \times \text{electricity consumed per use (kWh)} \times \text{emission factor for electricity (kg CO}_2\text{e/kWh)})$

+

sum across refrigerant leakage from use of products:

$\Sigma (\text{total lifetime expected uses of product} \times \text{number sold in reporting period} \times \text{refrigerant leakage per use (kg)} \times \text{global warming potential (kg CO}_2\text{e/kg)})$

Source: GHG Protocol

The distinction between categories of Scope 3 emissions is important for understanding climate risk exposure. When it comes to Category 11, a dominant source of Scope 3 emissions in the MSCI World Index, a distinction

¹⁶ iea.blob.core.windows.net/assets/dacf14d2-eabc-498a-8263-9f97fd5dc327/GEVO2023.pdf



should be made between those emissions which will be reduced over time via the actions of others (e.g. electricity generation), and those which cannot be reduced due to the nature of the product (e.g. oil for transportation). The existing accounting framework assumes combustion related emissions are equal to indirect emissions from, for example, climate solutions technology and associated products – but **the current grid mix should not be a reason to pull back on developing, or allocating capital to, transition-necessary technology.**

3.7.1 Scope 4 – avoided emissions

The Scope 3 data challenge is closely connected to the absence of reliable Scope 4 data. For example, the avoided 'Scope 4' emissions from using a heat pump, relative to a gas boiler, vastly outweigh the use of product 'Scope 3' emissions from the heat pump, even in regions where the electricity grid is emissions intensive. In an ideal world, Scope 3 and Scope 4 could be combined with Scope 1 and 2 for optimal portfolio alignment outcomes. But we do not see this as a reasonable near-term resolution. Scope 4 is even more difficult to define than Scope 3 – as it involves assessing the full range of climate solutions and all potential future climate outcomes – and it is too open to manipulation for corporate offsetting purposes (see Text Box on Page 24).

Scope 1 and 2 emissions intensity provides a reasonable parameter for sorting and optimising portfolios on climate risk exposure, particularly for comparisons of companies within sectors and industries – but this can lead to "counterintuitive results" as emphasised by the European Commission. The solution proposed by the EC, and used in the PAB regulation, is to incorporate Scope 3 data. **Scope 3 data does not provide us with an optimal climate risk proxy for all companies and sectors as it blends direct, product-specific, unavoidable emissions with indirect electricity-related emissions.** In our experience, a better way to invest in line with the goals of the Paris agreement is to:

- Reduce: identify, and minimise exposure to, sources of direct fossil-related emissions (oil and gas value chain).

- Increase: identify, and increase exposure to, sources of revenue from climate solutions products and technologies - without penalising climate positive companies for their production or use-phase emissions.
- Align: tilt the rest of the portfolio towards companies that have set verified, science-based emissions reductions targets.

Enforcing a portfolio top level emissions reduction requirement (e.g. 7% p.a.) on a 'passive' portfolio does not necessarily discriminate between climate negative and climate positive positions, or lead to real world emissions reductions. We optimise our portfolio using data from SBTi, investing more in companies with verified, Paris-aligned emissions reduction targets and less in companies without targets. We also participate in an engagement campaign managed by CDP which encourages companies to set SBTi verified targets. We believe this is a better way of aligning both the portfolio, and the economy, with the Paris agreement goals, as companies must target their own emissions and their value chain emissions. We could reduce top level portfolio emissions by 7% p.a. to meet a PAB-style Paris alignment objective for several years simply by reducing our investment in climate solution companies, - but that would not lead to a real-world transition, or address financial risk in the portfolio.

Scope 4 – illustrating the baseline issue:

Company A flies 100 employees from Oslo-Madrid to celebrate a 50 year anniversary, with Scope 3 emissions of 90 tons CO₂

(Source: <https://co2.myclimate.org/>).

However, Company A claims that the alternative was not staying in Oslo, but rather flying to Mauritius, a trip that would have generated 410 tons CO₂.

Company A therefore claims a net avoided emissions of 320 tons CO₂ for the celebration.

Company B also takes 100 employees from Oslo to Madrid but claims flying to Auckland in first class was the alternative trip, qualifying for avoided emissions of 3680 tons CO₂ and a net scope 1-4 emission of 3360 tons.

Company B now has a carbon budget large enough for almost 40 additional trips to Madrid before breaking even on scopes 1-4.

3.8 Proposed improvements to the guidance:

There are four additional pieces of emissions-related information and guidance, that is not required within IFRS S2, that we believe would be valuable for investors, users of accounts and other stakeholders:

1. Separate emissions reporting according to Scope and type. To avoid confusion around good and bad emissions from a financial climate risk perspective, investors can report Scope 1 & 2 emissions separately from Scope 3 and separate climate solutions companies from other companies in their reporting. We propose producing these numbers alongside the combined metrics required in regulation, to ensure that reporting is decision useful as well as meeting regulations. Investors can then avoid penalising climate solutions companies for emissions in portfolio construction or target setting.

This approach requires oversight from a climate specialist portfolio manager that can distinguish between climate risk relevant data for portfolio exposures and act accordingly.

2. Provide clearer and more granular guidance for companies on how to report emissions in a consistent and comparable manner. As illustrated in recent research from King's College London¹⁷, emissions factors used in company reporting are varied and often inaccurate. The researchers highlighted that this can lead to "*gaming undermining effectiveness of climate finance*". They made five policy recommendations to address this, including greater transparency on methods, datasets and coverage of emissions calculations as well as quality assurance regulations.

This should also be combined with transparency from data vendors on how each emissions number is calculated, which categories are included/excluded and the methodology for estimations.

3. Raising awareness of Scope 4 emissions would also be valuable, both to avoid potential for corporate greenwashing associated with the avoided

¹⁷ [New research shows how companies could be gaming their reported greenhouse gas emissions - King's College London \(kcl.ac.uk\)](https://www.kcl.ac.uk/news/2022/05/new-research-shows-how-companies-could-be-gaming-their-reported-greenhouse-gas-emissions)

emissions concept and to prevent penalising climate positive products and services for their Scope 3 emissions. However, given the complexity of Scope 3 reporting and problems associated with corporate reporting of the Scope 3 category, we do not think that standardised or reliable company reported Scope 4 data is likely to solve these issues in the short to medium term (see text box above).

We argue that a more sensible climate solutions definition is whether the IEA net zero scenario, or similar pathway, predicts strong growth for the product in question. Use of net emission scopes calculations, or other single figure metrics, is likely to project one-dimensional quantities out of a scenario. Any such reduction to a single number per company is likely to be error prone and lead to misinterpretations of risk.

4. In the absence of reliable Scope 4 guidance and data, a better near-term solution would be to adjust the Scope 3 emissions accounting framework and guidance provided by the GHG Protocol. Category 11, use of product, could be separated into two parts:
 - a. Category 11a would deal with combustion-related and GHG leakage emissions
 - b. Category 11b would address indirect emissions from the shift to electrification.

Investors could then choose to ignore Category 11b to improve alignment between Scope 3 emissions and company climate risk. This approach requires specialist oversight to ensure proper distinction between categories of Scope 3 emissions and avoid further unintended consequences. Some Scope 3 emissions, such as electricity generation, may be out of the control of the company in question but will be expected to reduce over time as the grid decarbonises.

Other Scope 3 emissions, such as F-gases in heat pump technology, are a potential area for engagement with companies and policymakers to ensure good practice, avoiding leakages and managing end of life disposal, and ultimate phase out.

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