

# The Paris Alignment Paradox: Scoping Out Solutions

White paper on behalf of the Storebrand Plus Funds (Quantitative Equity Team)

By Lauren Juliff and Henrik Wold Nilsen, May 2023.

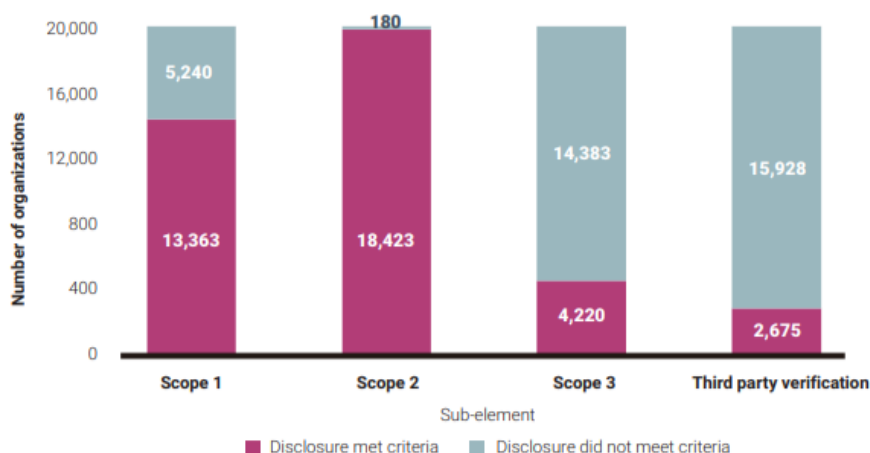
In our recent paper, The Climate Data Conundrum<sup>1</sup>, we highlighted unintended consequences that can occur when incorporating Scope 3 data into portfolio construction. We raised the importance of understanding so called 'Scope 4' emissions, also known as avoided emissions, so climate solutions companies are not unreasonably penalised or altogether avoided.

In this follow up paper, we delve deeper into the Scope 3 category and accounting framework, to illustrate why new regulatory requirements aimed at 'Paris alignment' are leading to perverse allocation consequences for investors. We offer a solution to this industry-wide problem which we believe better aligns investors with the transition to a low carbon economy.

### The decarbonisation distraction

Much of our recent research has exposed the need for thoughtful, expert use of climate data in understanding portfolio risk exposures and allocating capital. Uncritical use of corporate emissions data gives an incomplete, narrow, and often misleading, picture of climate risk. This is particularly true of Scope 3, which is notorious for its poor data quality. Current Scope 3 disclosure levels are low, as illustrated in Figure 1, meaning Scope 3 datasets used in portfolio construction are heavily reliant on estimates which are often inaccurate.

**Figure 1 – CDP analysis of Scope 1, 2 and 3 accounting with verification**



*Source: CDP, Climate Transition Plan Report 2022*

This is why investors and regulators have thus far prioritised incorporating Scope 1 and 2 emissions data into climate risk reporting, target setting and investment decision making. However, Scope 3 accounts for a large majority, 70%, of total value chain emissions for the average company<sup>2</sup>. Omitting Scope 3 emissions is problematic when considering the total emissions of an oil and gas company, for example, as their Scope 1 and 2 production phase emissions are relatively low compared with their use of product (Scope 3). When addressing real world emissions reductions, it is important that companies assess and incorporate their full value chain, including Scope 3, into their targets. For this reason, the Science Based Targets initiative (SBTi) is focused on "mainstreaming the adoption of

<sup>1</sup> <https://www.storebrand.com/sam/international/asset-management/insights/perspectives/perspectives-folder/the-climate-data-conundrum>

<sup>2</sup> <https://www.bloomberg.com/professional/blog/closing-the-scope-3-ghg-emissions-data-gap/>

Scope 3 targets<sup>3</sup>, requiring all companies to undertake a Scope 3 inventory and obliging companies to set Scope 3 targets under their new Net-Zero Standard<sup>4</sup>.

The largest source of Scope 3 emissions in the MSCI World equity index comes from the energy sector, due to oil and gas majors. This is a clear source of climate risk which investors need to address if they want to align their portfolios with the goals of the Paris agreement. A regulatory focus on financially material climate risk for investors, particularly in the UK and European markets, has led to strong growth in climate aware investing and the use of climate index products to replace large, core equity holdings tracking market cap indices<sup>5</sup>. EU Paris Aligned Benchmark (PAB) and Climate Transition Benchmark (CTB) trackers have been large beneficiaries of this growth<sup>6</sup>.

The European Commission set minimum standards for PABs and CTBs, as part of its European Green Deal, to align investment flows with the Paris Agreement<sup>7</sup>. The standards are focused primarily on portfolio decarbonisation and exclusions, using a 1.5C aligned IPCC pathway to determine the need for an annual 7% decarbonisation trajectory. EU compliant benchmarks must apply this trajectory to the GHG emissions intensity<sup>8</sup> of the total portfolio with the stated aim of "*preventing greenwashing*". The Commission recognises that Scope 1 and Scope 2 emissions intensity does not provide the full risk picture for all sectors, noting that "*decarbonisation based only on Scope 1 and Scope 2 GHG emissions could lead to counterintuitive results*"<sup>9</sup>. Its solution is to require Scope 3 data to be included in the decarbonisation trajectory, but using a phased-in approach by sector to account for the "*insufficient quality of the data currently available*". Scope 3 data for energy and mining was required in PAB decarbonisation mechanisms in December 2020; the transportation, construction, buildings, materials and industrial sectors were incorporated in December 2022. For all other sectors, Scope 3 data must be incorporated in the decarbonisation mechanism for PABs by December 2024. The Commission hopes that this gradual adoption of Scope 3 data by sector will also lead to improved data quality over time.

The financial services industry is quite fixated on the need for better Scope 3 data to improve investment decision making related to climate risk. Many initiatives for improving corporate Scope 3 disclosures and data availability are underway, from industry bodies, regulators, NGOs, and other service providers. However, our analysis shows that even perfect Scope 3 data would not provide the markets with the clarity on corporate climate risk that is needed for index construction or passive management. We will illustrate that applying a rigid decarbonisation trajectory to a global equity portfolio that incorporates company Scope 1, Scope 2 and Scope 3 emissions brings new 'counterintuitive results' and actually limits the Paris alignment potential of the PABs.

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

<sup>4</sup> <https://cdn2.assets-servd.host/science-targets/production/files/Net-Zero-Standard.pdf>

<sup>5</sup> [Investing in Times of Climate Change, Morningstar \(2022\)](#)

<sup>6</sup> Ibid

<sup>7</sup> [COMMISSION DELEGATED REGULATION \(EU\) 2020/1818 of 17 July 2020 supplementing Regulation \(EU\) 2016/1011 of the European Parliament and of the Council as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks](#)

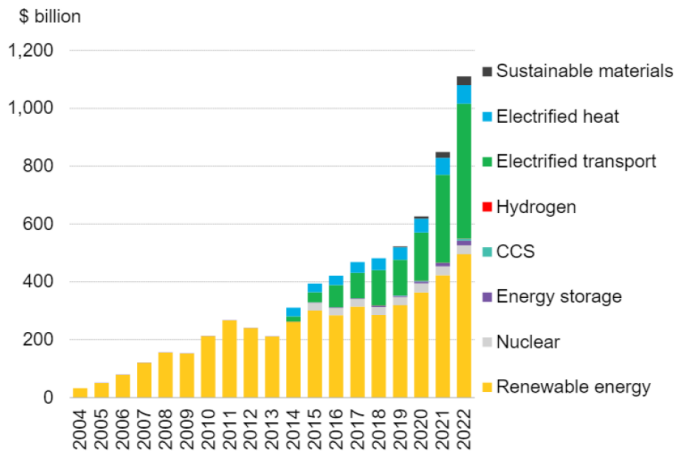
<sup>8</sup> Defined as absolute GHG emissions divided by £m in enterprise value including cash (EVIC). Note a baseline emissions reduction is also required as laid out in the regulation, see footnote 7.

<sup>9</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R1818&rid=1>

## Investing in the transition

We support regulation to improve disclosures and the availability of EU taxonomy aligned data and frameworks. However the focus on decarbonisation as the determining feature for 'Paris aligned' investing is distracting and discouraging investors from aligning with the technological transition to greener solutions. The fossil fuel production value chain must be rapidly decarbonised and wound down if we are to have any chance of meeting the goals of the Paris agreement. However, there are many industries that must grow just as rapidly to make Paris alignment possible.

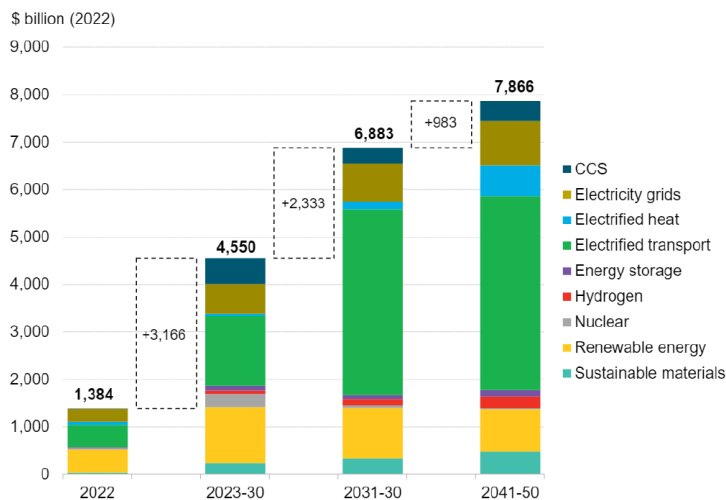
**Figure 2 – Global Energy Transition Investment by Sector**



Source: Bloomberg New Energy Finance: Energy Transition Investment Trends 2023. Note: start-years differ by sector but all sectors are present from 2019 onward. Nuclear figures start in 2015.

Figure 2 shows the strong, recent growth in climate solution technologies such as renewable energy and electrified transport. Figure 3 exposes how modest this growth and investment is compared to what is required between now and 2050 for 'net zero' alignment. The first column in Figure 3 presents the same data points as the final column in Figure 2 (2022) but adds the required grid investments for a net zero scenario.

**Figure 3 – Comparison: 2022 energy transition and grid investment vs required annual investment in 2023-30, 2031-40, and 2041-50 in NEO 2022 Net Zero Scenario**



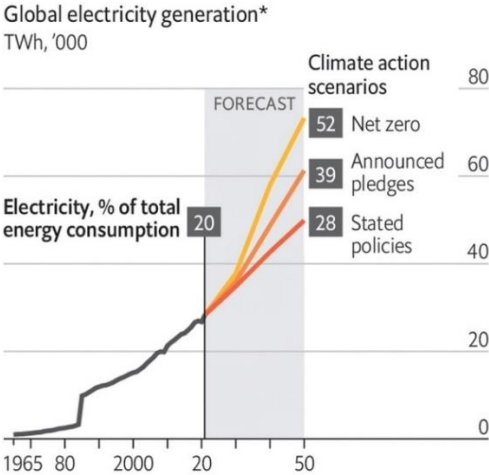
Source: Bloomberg New Energy Finance: Energy Transition Investment Trends 2023. Note: Future values are from the New Energy Outlook 2022, except electrified transport, which is from the Electric Vehicle Outlook 2021 Net-Zero Scenario. The Net-Zero Scenario target global net zero by 2050 in line with 1.77 degrees Celsius of warming. Investment includes electricity grids.

Electrification is a big feature of this forward-looking growth, which necessitates quick expansion of the electricity grid. In our view this feature of Paris alignment, investing in the solutions for the transition, deserves more attention. Global equity investors will not align with the Paris agreement by decarbonising existing holdings in the large and mid-sized market cap weighted index. Approaches that allow investors to claim 'Paris alignment' by applying a list of exclusions and a decarbonisation trajectory to their current market cap weighted benchmarks disregard the need for huge growth in climate solutions investments.

**Not all emissions are equal**

There are many products deemed necessary for economy decarbonisation that have high Scope 3 emissions, as we will illustrate below. One such product is the cables for the transmission and distribution of electricity. A recent report in the Economist<sup>10</sup> highlighted the move to a decentralised fossil-powered grid with more distributed production from a range of sources, such as wind and solar, requires substantial grid expansion. Figure 4 depicts the historical pattern of energy generation and consumption alongside the future pathway for a range of climate action scenarios.

**Figure 4 – Global Electricity Generation**

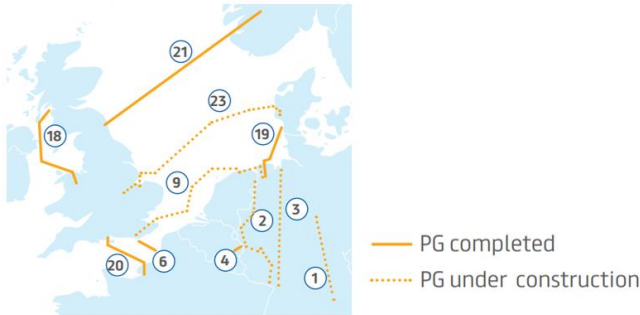


Source: The Economist, 8 April 2023 Chart data sources: Our World in Data; IEA. \*Data before 1985 does not include coal.

Doubling, or even tripling, the electricity grid to facilitate the same increase in electricity consumption would require at least double the number of cables. Prysmian is a company that produces these electricity cables for expanding the grid. Figure 5 is a map of the interconnectors between different grids in Europe being produced by Prysmian.

<sup>10</sup> The Economist, Technology Quarterly, 8 April 2023

**Figure 5 – Interconnectors by Prysmian Group**



Source: Prysmian Annual Report<sup>11</sup>

Another key growth industry for the transition to a Paris aligned economy is electrified transport, as shown in Figure 3. Wolfspeed 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)<sup>12</sup>. They produce inverters needed for converting the direct current from a battery to an engine compatible alternating current (DC to AC). There is always some energy loss in this process but Wolfspeed’s products reduce that loss. Driving range has been a limiting factor to EV growth but these advancements in semiconductor materials could extend EV range by up to 10% in a crucially cost-effective manner<sup>13</sup>. This is considered an important factor in accelerating consumer confidence and adoption of EVs. In February 2023, Wolfspeed announced the “creation of a joint innovation lab” in Germany with global technology company, ZF, focused on driving forward innovation in SiC research and development<sup>14</sup>. This is part of the Important Project of Common European Interest (IPCEI) for Microelectronics and Communication Technologies, which has received state aid approval from the European Commission<sup>15</sup> and supports the European Green Deal<sup>16</sup>. The European Commission stated: “The IPCEI will enable research and development in a key economic sector of strategic importance across a number of Member States and is expected to unlock an additional €6 billion in private investments in the microelectronics sector”<sup>17</sup>

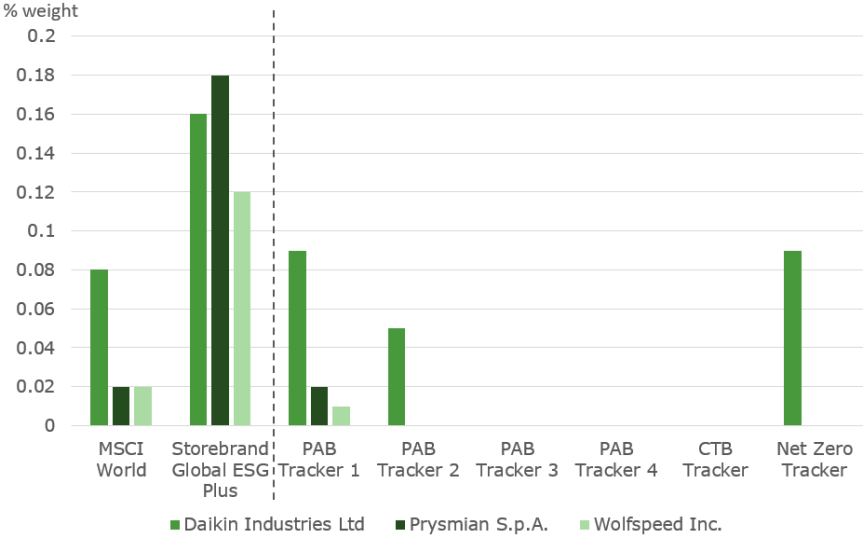
Both Prysmian and Wolfspeed are positions in the indices which define the investment universe for PABs, and therefore in the portfolios that PABs aim to improve/replace<sup>18</sup>. The main aims<sup>19</sup> of the EU defined Paris Aligned Benchmarks are to:

- improve transparency and comparability
- reallocate capital towards climate-friendly investments
- prevent administrators from making misleading low-carbon claims (‘greenwashing’).

<sup>11</sup> Prysmian Group, Integrated Annual Report 2022, p23.  
<sup>12</sup> [Delivering on the EV Range Extension Promise of SiC in Traction Inverters | Analog Devices](#)  
<sup>13</sup> [Delivering on the EV Range Extension Promise of SiC in Traction Inverters | Analog Devices](#)  
<sup>14</sup> <https://www.greencarcongress.com/2023/02/20230202-wolfspeedzf.html>  
<sup>15</sup> [https://ec.europa.eu/commission/presscorner/detail/el/ip\\_18\\_6862](https://ec.europa.eu/commission/presscorner/detail/el/ip_18_6862)  
<sup>16</sup> <https://www.automotiveworld.com/news-releases/wolfspeed-and-zf-announce-partnership-for-future-silicon-carbide-semiconductor-devices/>  
<sup>17</sup> [https://ec.europa.eu/commission/presscorner/detail/el/ip\\_18\\_6862](https://ec.europa.eu/commission/presscorner/detail/el/ip_18_6862)  
<sup>18</sup> PABs/CTBs tend to use large & mid cap weighted global equity indices, such as MSCI World. As at 31 March 2023.  
<sup>19</sup> [https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12020-Sustainable-finance-minimum-standards-for-climate-benchmarks\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12020-Sustainable-finance-minimum-standards-for-climate-benchmarks_en)

It would therefore be reasonable to expect that the PABs provide exposure to these companies - Wolfspeed, with developments planned under an EU project as part of the Green Deal<sup>20</sup>, and Prysmian, facilitating European grid expansion - as part of their climate-friendly capital reallocation goal. Figure 6 shows that this is not the case.

**Figure 6 – Holdings analysis of climate benchmark trackers**



Source: Storebrand analysis based on holdings from Morningstar, as at 28<sup>th</sup> of February 2023. Note: Daikin Industries produces heat pumps, another key transition technology covered in our earlier paper, [The Climate Data Conundrum](#).

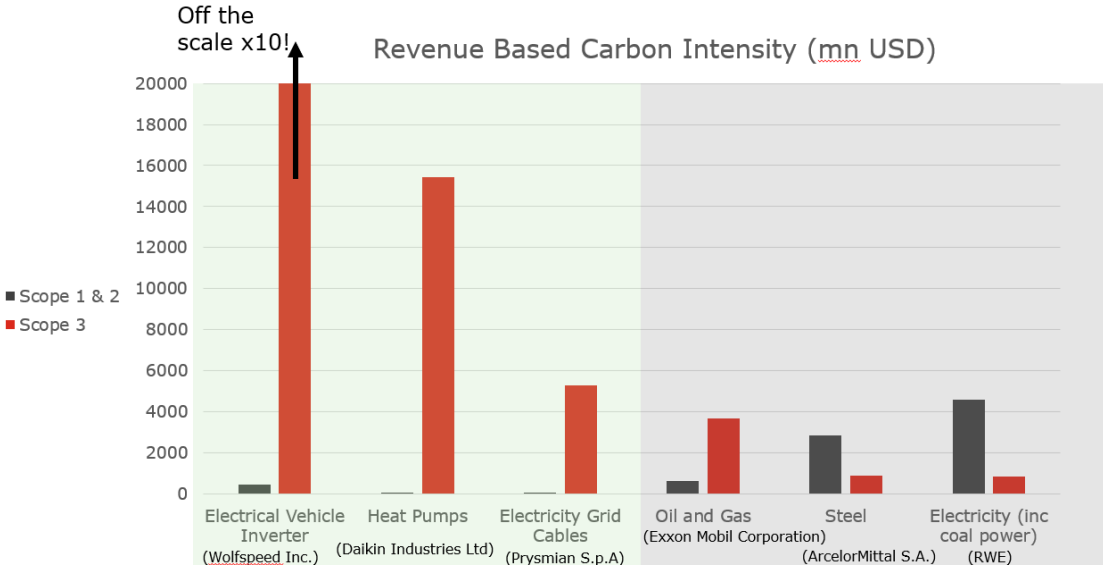
We analysed the holdings of several climate benchmark trackers. All but one of those funds had no investments in either Prysmian or Wolfspeed.

In Figure 7 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. This would explain why they are not held by the PABs but illustrates a completely counterintuitive capital allocation consequence of phasing-in Scope 3 emissions to PAB decarbonisation tilting as of December 2022<sup>21</sup>.

<sup>20</sup> Funding approval expected later this year: <https://www.wolfspeed.com/company/news-events/news/wolfspeed-and-zf-to-open-r-and-d-center-in-nuremberg-germany-to-optimize-silicon-carbide-semiconductor-technology/>

<sup>21</sup> transportation, construction, buildings, materials and industrial sectors were incorporated in December 2022

**Figure 7 - 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.

What is also evident from this chart is that the climate risk of the steel and electricity industries can be measured by Scope 1 & 2 emissions, but Scope 3 is necessary to understand the impact of an oil and gas major. In our earlier paper, The Climate Data Conundrum<sup>22</sup>, we showed that heat pumps offer significant emissions reductions compared to gas boilers and discussed the reasons behind the high Scope 3 figure for Daikin Industries. 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. It is worth noting that this is not a data quality problem, all data in Figure 7 is directly reported by the companies in question. This is not an issue that will be solved by improved data quality over time, as the EC assumes. The problem lies in the systematic application of a measure, Scope 3, which was not designed to evaluate company transition risk exposure for all sectors – and in the absence of reliable Scope 4 data. 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.

<sup>22</sup> <https://www.storebrand.com/sam/international/asset-management/insights/perspectives/perspectives-folder/the-climate-data-conundrum>



### Scope 3 – Corporate Value Chain Accounting

The Greenhouse Gas (GHG) Protocol sets the world's most widely used accounting standards to assist companies in measuring and managing their emissions<sup>23</sup>. The GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard lists the following aims, providing insight to the purpose of this framework<sup>24</sup>:

- *To help companies prepare a true and fair scope 3 GHG inventory in a cost-effective manner, through the use of standardised approaches and principles*
- *To help companies develop effective strategies for managing and reducing their scope 3 emissions through an understanding of value chain emissions and associated risks and opportunities*
- *To support consistent and transparent public reporting of corporate value chain emissions according to a standardized set of reporting requirements*

In other words, this framework 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*”<sup>25</sup>. SBTi's increased emphasis on Scope 3 inventories and targets<sup>26</sup> 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<sup>27</sup>.

**Figure 8 – 15 Categories of scope 3 emissions**

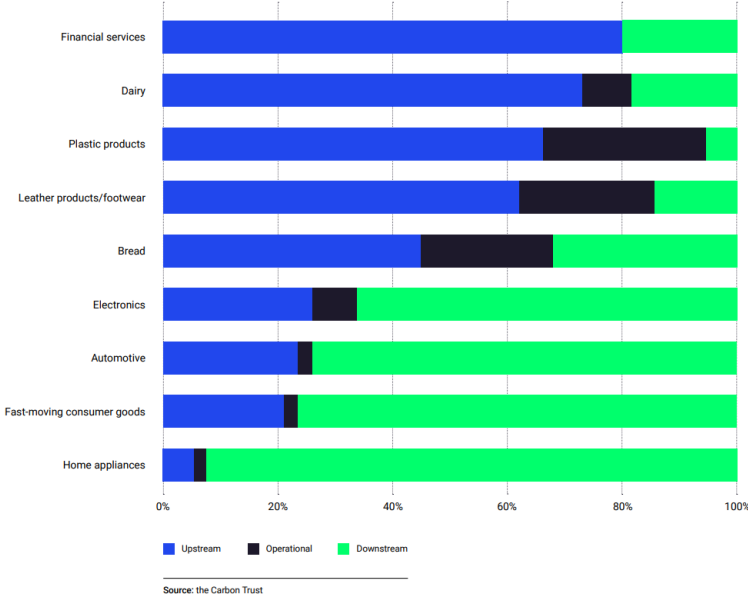
Category	Upstream scope 3 emissions	Category	Downstream scope 3 emissions
1	Purchased goods and services	9	Downstream transportation and distribution
2	Capital goods	10	Processing of sold products
3	Fuel- and energy- related activities (not included in scope 1 or scope 2)	11	Use of sold products
4	Upstream transportation and distribution	12	End-of-life treatment of sold products
5	Waste generated in operations	13	Downstream leased assets
6	Business travel	14	Franchises
7	Employee commuting	15	Investments
8	Upstream leased assets		

Source: Storebrand, GHG Protocol

<sup>23</sup> <https://ghgprotocol.org/>  
<sup>24</sup> [https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)  
<sup>25</sup> <https://sciencebasedtargets.org/blog/scope-3-stepping-up-science-based-action>  
<sup>26</sup> <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>  
<sup>27</sup> <https://ctprodstorageaccountp.blob.core.windows.net/prod-drupal-files/documents/resource/restricted/Scope-3-emissions-guide.pdf>

The materiality of these categories differs substantially across industries as illustrated in Figure 9.

**Figure 9 – Materiality of Scope 3 emissions categories by industry**



Source: [The Carbon Trust, Scope 3 Emissions Guide](#).

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. We have analysed Scope 3 emissions in the MSCI World Index<sup>28</sup> 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 by revisiting the Wolfspeed example. Use of sold products is the key source of Scope 3 emissions for each of the three climate solutions companies in Figure 7, as well as the oil and gas company, Exxon Mobil. However, 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 Index<sup>29</sup>, but was only included in the index as of November 2022 and 85% of its revenues are green<sup>30</sup>. The recent annual Global EV Outlook from the International Energy Agency (IEA) reported that electric car markets are growing exponentially, breaking new records with continued momentum<sup>31</sup>. Wolfspeed expects massive sales growth triggered by adoption of SiC

<sup>28</sup> 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.

<sup>29</sup> 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

<sup>30</sup> Source: FTSE Green Revenues as at 31 December 2022

<sup>31</sup> <https://iea.blob.core.windows.net/assets/dacf14d2-eabc-498a-8263-9f97fd5dc327/GEVO2023.pdf>

devices in the EV market<sup>32</sup> and this growth must be built into its Scope 3 emissions reporting as outlined in Figure 10.

Companies like Wolfspeed, Daikin Industries and Prysmian, whose products facilitate economy electrification, must report the emissions from the sum of electricity consumed across the lifetime of their products. Companies estimate those lifetime emissions using a CO<sub>2</sub>e 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 make sense as a measure of climate risk associated with investing in companies facilitating electrification.

**Figure 10 – Calculation formula for direct use-phase emissions from products that directly consume energy (fuels or electricity) during use**

*CO<sub>2</sub>e emissions from use of sold products =*

**sum across fuels consumed from use of products:**

Σ (total lifetime expected uses of product × number sold in reporting period  
× fuel consumed per use (kWh) × emission factor for fuel (kg CO<sub>2</sub>e/kWh))

+

**sum across electricity consumed from use of products:**

Σ (total lifetime expected uses of product × number sold in reporting period  
× electricity consumed per use (kWh) × emission factor for electricity (kg CO<sub>2</sub>e/kWh))

+

**sum across refrigerant leakage from use of products:**

Σ (total lifetime expected uses of product × number sold in reporting period  
× refrigerant leakage per use (kg) × global warming potential (kg CO<sub>2</sub>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 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. This creates a Paris alignment paradox for investors.

**Paris aligned investing in practice**

There is no such thing as passive Paris alignment. Climate science, policy and available data continue to evolve at pace, as does regulation for investors. Our best-efforts approach to aligning our

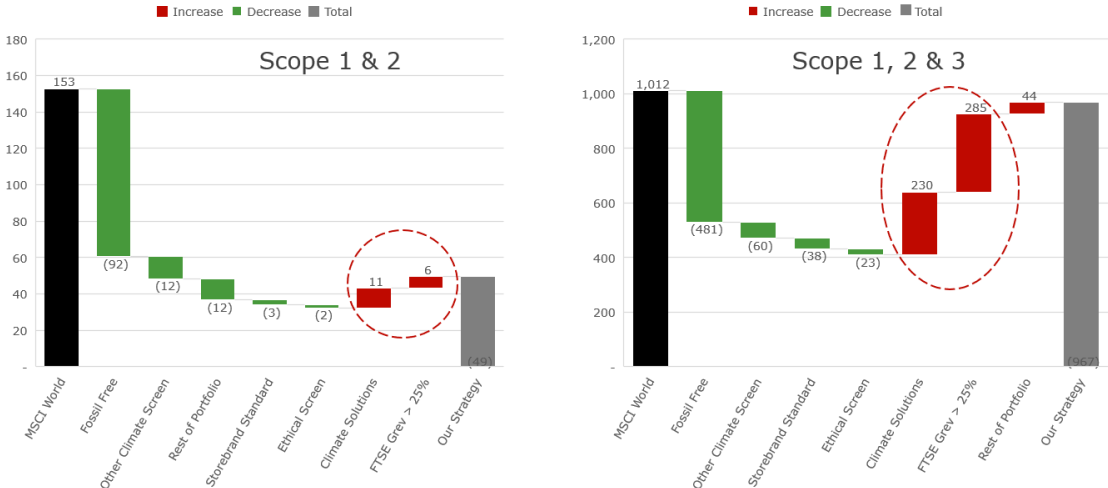
<sup>32</sup> <https://www.investors.com/research/the-new-america/wolfspeed-stock-leads-pack-of-power-chip-producers/>

diversified, core global equity portfolio with the Paris agreement is to use a combination of climate-relevant datasets in a risk optimisation framework. 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 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.

The waterfall chart in Figure 11 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 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 only<sup>33</sup>. Again, we achieve a reduction in emissions vs the index by screening climate negative positions. But, the impact of increasing our portfolio weights in climate solutions companies and green revenues is so large that our portfolio ends up with almost the same carbon intensity as the index.

**Figure 11 – Illustrating the Paris Alignment Paradox:  
Weighted Average Carbon Intensity (WACI) Scope 1-2 and Scope 1-3 for MSCI World and the Storebrand Global ESG Plus Fund**



Source: Storebrand, Trucost, as at 31 March 2023. For illustration only. Data provided for the Norwegian domiciled UCITS fund.

The same paradox holds true when we look at pooled fund data in Morningstar. In Figure 12, we sort global equity funds by emissions intensity (Scope 1-3). We have highlighted the funds with thematic climate and sustainability names in green. The climate solutions % involvement and fossil fuel % involvement of each fund is also provided. Half of the 20 funds with the highest Scope 1-3 emissions

<sup>33</sup> 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.

intensity claim alignment with a sustainability theme. We must go way down the list, to fund number 150, to find the first MSCI World Energy tracker, which has a 95% exposure to fossil fuels (highlighted in grey).

**Figure 12 – Global Equity Funds in Morningstar sorted by GHG Intensity (Scope 1-3), highest to lowest**

	Fund Name (anonymised - thematic climate / ESG titles highlighted)	GHG Intensity Scope 1, 2 & 3	Carbon Solutions Involvement (%)	Fossil Fuel % of Portfolio Involved
1	[.....Sustainable....]	55,997	63	9
2	[...]	24,507		0
3	[... Clean Energy...]	18,124	60	2
4	[...SmartEnergy-ESG...]	18,014	67	6
5	[...]	17,737	9	8
6	[...]	16,936	21	0
7	[...Green Champions...]	16,748	49	0
8	[...Clean Edge Green Energy...]	16,054	60	2
9	[...]	13,872	48	0
10	[...]	13,868	22	0
11	[...]	12,957	16	9
12	[...Sycamore Fund Global Eco Solutions...]	12,229	35	12
13	[...]	12,142	14	0
14	[...Climate Change Solution...]	12,020	26	6
15	[...]	11,875	2	2
16	[...]	11,615	21	0
17	[...Green Hero...]	10,872	50	5
18	[...Hydrogen Economy...]	10,796	37	2
19	[...New Energy...]	10,564	32	0
20	[...]	10,558	19	0
	<b>Average</b>	<b>16,374</b>	<b>34</b>	<b>3</b>
	[...]			
150	[...MSCI World Energy ETF...]	5,008		95

Source: Storebrand analysis from Morningstar, as at 31 March 2023. For illustration only. Data universe includes all open-ended equity funds and ETFs in Morningstar categorised as global; global developed; and global emerging markets, truncated at Scope 1-3 > 1000.

This illustrates clearly why investors should not judge the climate alignment of funds using Scope 3 data.

**Scope 4 – Scoping out solutions**

This Scope 3 data challenge is closely connected to the absence of reliable Scope 4 data. For the economy electrification product examples provided in this paper, Scope 4 figures would present a large positive signal resulting from the 'avoided emissions' achieved. 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, as outlined in The Climate Data Conundrum, 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. Scope 4 is presently a contentious, manipulable and unstandardised metric – but there are other ways to avoid scoping out solutions.

## A proposal for better alignment

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 EC. 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. Companies with SBTs have decarbonised their businesses by 29% between 2015 and 2020<sup>34</sup>. 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<sup>35</sup>. 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 Wolfspeed, and/or other similar climate solution companies, - but that would not lead to a real-world transition, or address financial risk in the portfolio.
- **Report:** separate emissions according to Scope and type. Increasingly regulators require investors to include Scope 3 emissions in their climate risk / TCFD reports. 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.

In the absence of reliable Scope 4 data, a better near-term solution would be to adjust the Scope 3 emissions accounting framework. Category 11, use of product, could be separated into two parts: Category 11a would deal with combustion-related and GHG leakage emissions, while 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

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<sup>34</sup> <https://sciencebasedtargets.org/reports/sbti-progress-report-2021>

<sup>35</sup> <https://www.cdp.net/en/investor/engage-with-companies/cdp-science-based-targets-campaign>

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.

## **Conclusion**

New regulatory requirements aimed at 'Paris alignment' are leading to perverse allocation consequences for investors. Scope 1 and 2 emissions do not provide a complete picture of climate risk but adding Scope 3 data is not a perfect solution. Scope 3 emissions must be addressed by companies in their Science Based emissions reductions targets to achieve real world decarbonisation, but it does not present an optimal indication of portfolio risk exposure. When Scope 3 emissions is the measure used to define corporate climate risk, to decarbonise portfolios and claim Paris alignment it can lead to illogical investment decisions.

The financial services industry is quite fixated on the need for better Scope 3 data to improve investment decision making related to climate risk, but data quality is not the only problem. Even perfect Scope 3 data, when applied in a systematic, portfolio decarbonisation pathway, leads to counterintuitive results and a misleading picture of climate risk. The focus on rigid decarbonisation pathways as a defining feature of 'Paris alignment' is discouraging investors from aligning with the technological transition to greener solutions. Economy decarbonisation is crucial but uncritical use of data must not hinder rapid uptake of climate solutions. As regulators and industry bodies increasingly focus on the reporting of Scope 3 emissions, we urge investors to consider the source and category of those emissions for capital allocation purposes.

Corporate emissions datasets should not be used at face value. Thoughtful, expert use of climate data is required to understand portfolio risk exposures, allocate capital in line with the goals of the low carbon transition and avoid the Paris alignment paradox.

## Important Information

*This is a marketing communication, and this document is intended for professional investors only. Except otherwise stated, the source of all information is Storebrand Asset Management AS as at 30 March 2023.*

*Historical returns are no guarantee for future returns. Future returns will depend, inter alia, on market developments, the fund manager's skills, the fund's risk profile and subscription and management fees. The return may become negative as a result of negative price developments. Statements reflect the portfolio managers' viewpoint at a given time, and this viewpoint may be changed without notice.*

*The Storebrand Asset Management AS has appointed SKAGEN AS UK Branch to act as Facility Agent in the UK. SKAGEN's London Office is located at 15 Stratton Street, London, W1J 8LQ. The SKAGEN AS UK Branch is authorised by Finanstilsynet and subject to limited regulation by the Financial Conduct authority. Details about the extent of the authorisation and regulation by the Financial Conduct Authority are available on request. The SKAGEN AS UK Branch has temporary permission from the UK FCA to carry out its authorised activities under the UCITS Directive.*

*No offer to purchase shares can be made or accepted prior to receipt by the offeree of the Fund's prospectus and the pre-contractual Key Investor Information Document (KIID in English) as well as the completion of all appropriate documentation. You can download more information including subscription/redemption forms, full prospectus, KIID, Annual Reports and Monthly Reports in English language from Storebrand Asset management AS'*

*webpages <https://www.storebrand.com/sam/uk/asset-management/offerings/funds-list>*

*An overview over applicable fees is available here <https://www.storebrand.com/sam/uk/asset-management/offerings/funds-list>*

*Investors' rights to complain and certain information on redress mechanisms are made available to investors pursuant to our complaints handling policy and procedure. The summary of investor rights in English is available here <https://www.storebrand.com/sam/uk/asset-management/legal/investor-rights>*

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*The decision to invest in a fund must take into account all the characteristics of the fund.*

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- The UCITS Storebrand SICAV Lux with two sub-funds (Storebrand Global ESG Plus Lux and Storebrand Global Solutions Lux)*
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