Sustainable enablers
of a better environment

DNB Renewable Energy

DNB
Asset Management
A company in the DNB Group

Photo: GettyTim82 / Getty Images

Highlights

Sustainable investment objective (Article 9 SFDR)

100%
of investments are environmentally sustainable (excluding cash) according to DNB AM's methodology

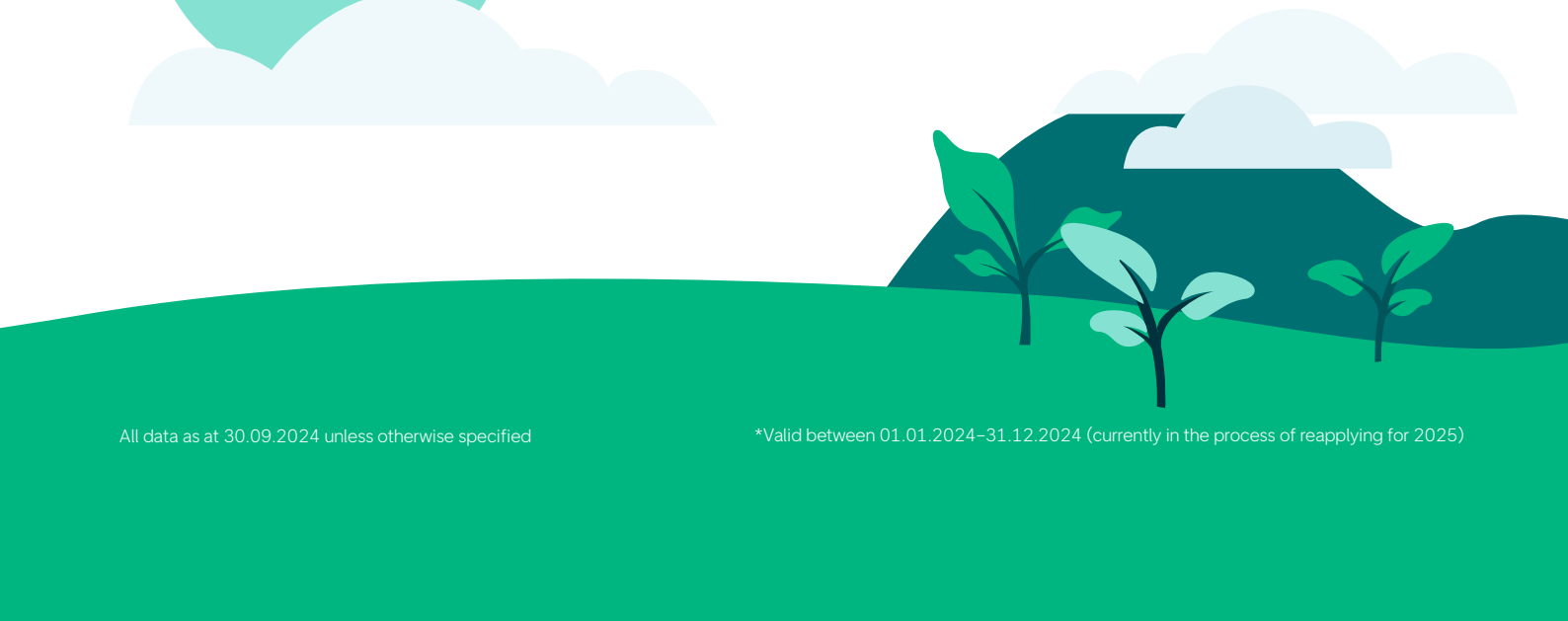
All companies/ product categories assessed by **ISS-ESG demonstrate PAE**

Engaged with
95.5%
of portfolio (by weight) on science-based net zero target setting

80%
of the fund has an SBTi approved or self-declared net zero target

35%
have an SBTi approved net zero target

26 engagements
on **79 topics**
from September 2023 – September 2024



All data as at 30.09.2024 unless otherwise specified

*Valid between 01.01.2024–31.12.2024 (currently in the process of reapplying for 2025)

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1 Reflections from PMs

It looks like 2024 will be another challenging year for cleantech investing. The rapid increase in global interest rates continues to impact project economics and extend timelines to recalibrate affordability calculations in sub-sectors like solar, wind, Electrical Vehicles (EVs) and heat pumps. The solar sector is also struggling with significant oversupply and rapidly declining prices given the massive capacity expansion in China during the boom. This capacity will eventually be absorbed as global solar installations are forecast to double again over the next six years partly driven by demand elasticity. However, grid constraints are also impacting demand with long connection queues and the grid equipment sector struggling to increase supply as Artificial Intelligence (AI) driven data centre growth puts pressure on the power sector. The constraints are caused by an aging grid infrastructure which is struggling to cope with changing load profiles, growing share of intermittent renewables and load growth resurfacing in developed economies. This drives a need for updated grid policies.

Looking forward there are some clear beneficial trends for the sector which are not fully appreciated by the market. Firstly, the electrification of the world's energy supply is continuing to gain speed and can now be seen in power demand and in global energy investments, where clean energy continues to take share.

Figure 1. IEA World Energy Investments 2024

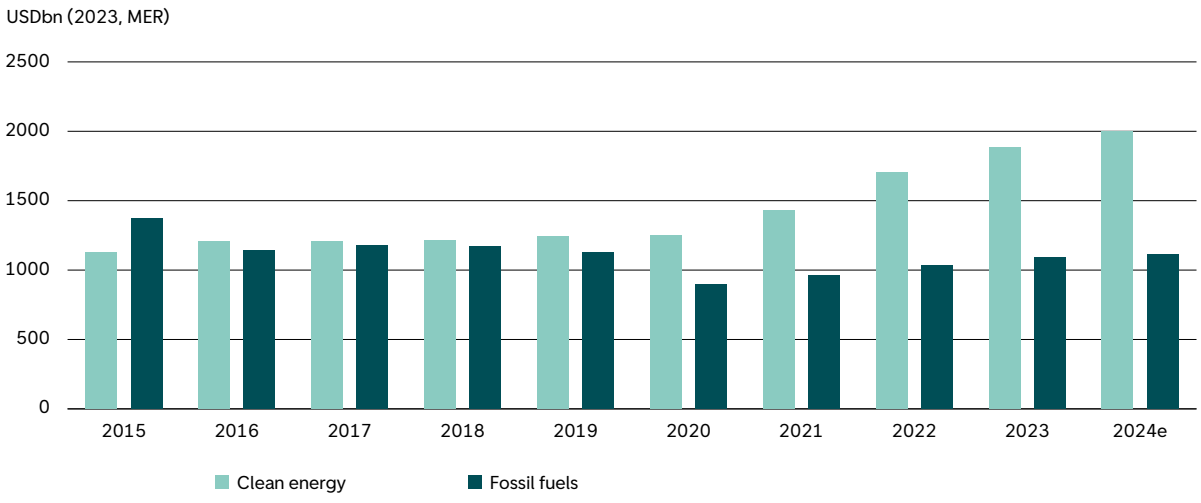
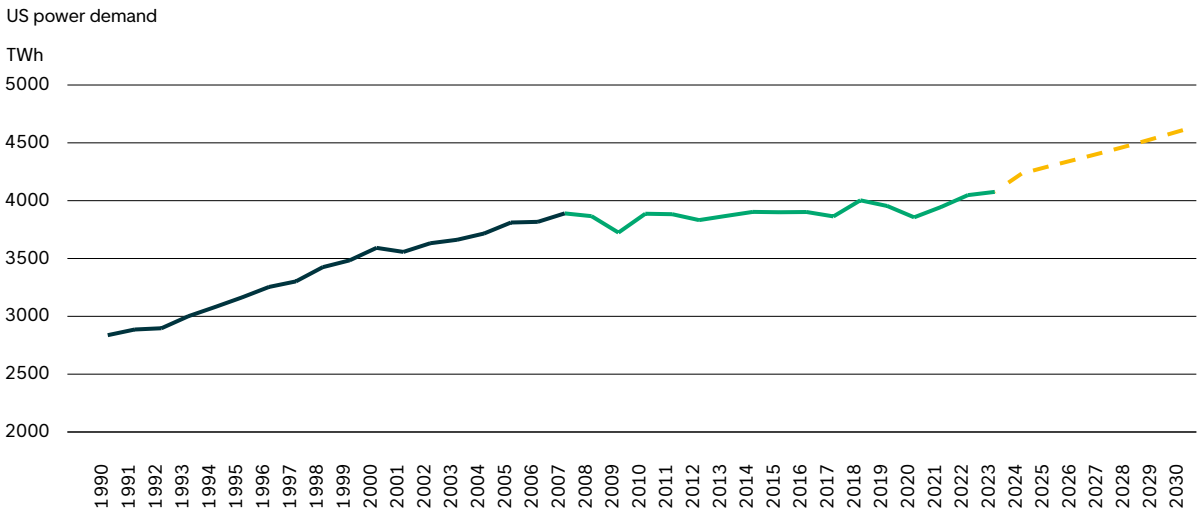


Figure 2. Historical and projected US power demand (1990–2030e)



Sources: EIA, BNEF, DNBAM estimates

Secondly, AI-driven data centre growth will drive incremental power demand to such an extent that this will also be seen in power demand statistics. This implies that countries like the United States (US), which have experienced flat power demand for the last 15-20 years due to energy efficiency improvements, are now poised to see substantial growth in power demand over the next decade. This incremental demand will drive future grid investment needs as well as more renewables.

Thirdly, the learning curves for solar, wind and storage will continue to drive down costs for these technologies over time as they continue to scale. The transition might be slowed by the increased cost of capital, but this will likely drive higher economic productivity losses due to climate change, the effects of which will be felt more acutely, thereby accelerating growth again. Cleantech markets are now larger and more diverse, the technology more mature and cost competitive and legislative support continues to be strong. We remain confident that the energy transition has not been derailed and that conditions for cleantech to prosper remain intact.

The DNB Renewable Energy fund offers broad exposure to the environmental theme, including renewable energy, electrification and resource efficiency. The companies we own range from cleantech pure plays, such as Enphase Energy and Vestas Wind Systems, to more diversified businesses, such as Schneider Electric and Novonesis. In the long run we believe that share prices are driven by earnings per share. We therefore spend most of our time trying to predict the earnings power of our portfolio holdings through our bottom-up, fundamental lens with an emphasis on business models, competitive positioning, capital allocation, strategy and culture.

We have been navigating the rough cleantech environment with an overweight position in the resource efficiency theme, where our investments are exposed to diverse end-markets and niches, each with industry dynamics distinct from those of solar and wind. We have also continued to sharpen our concentrated top holdings. A common theme of our top holdings is that they screen well when it comes their respective competitive moats and as such should be in strong positions to deliver strong earnings growth in the medium to long term. Their relative

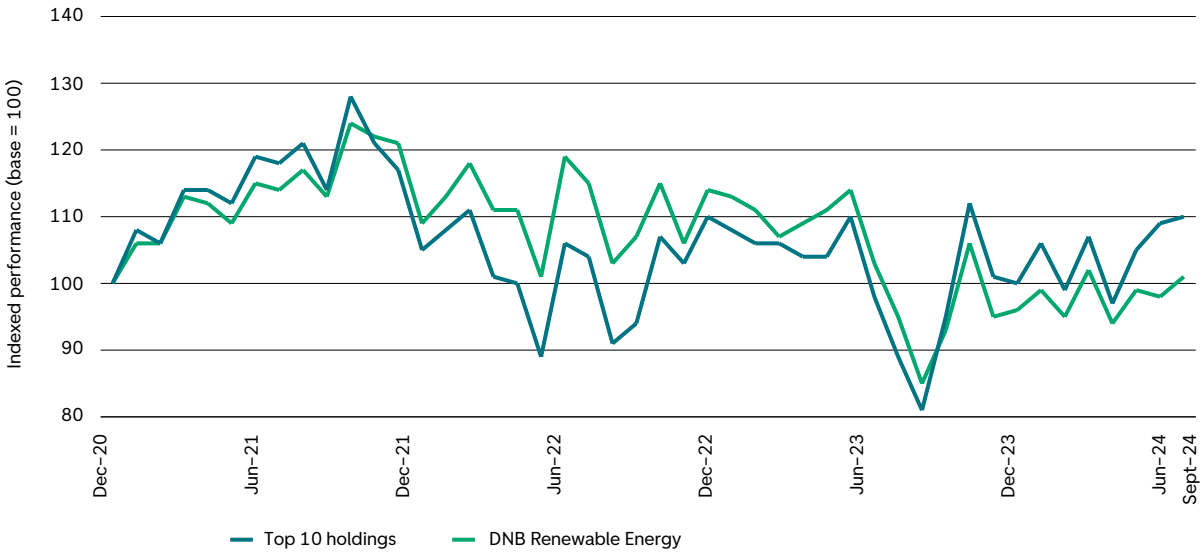
valuations also look attractive in a historical context. Our concentrated top holdings are where we can truly reap the rewards of our extensive, time-consuming bottom-up research. It is therefore encouraging to see the recent improvement in the performance of these key positions.

The relative valuation multiples of the fund are now more in-line with the broader market as fundamentals and estimates have started to bottom-out for some of the renewable sub-sectors whilst global environmental fund flows have remained negative. We see this as an encouraging sign as we keep in mind the stronger growth outlook for the portfolio compared to the broader market.

This report discusses our work on the potential avoided emissions of the portfolio. As in previous year, the companies covered are found to potentially avoided more CO_2 than they emit. Importantly, the analysis only covers 80.4% of the portfolio, and there are two reasons for this. First, companies were omitted due to their complex product portfolios: we find it near impossible, especially as outsiders, to estimate the avoided emissions of companies with tens of thousands of different products sold across the world. Second, lack of disclosures and available data to make a reasonable estimate.

The fund has a sustainable investment objective and is therefore regulated by Article 9 of the Sustainable Finance Disclosure Regulation (SFDR). The work presented in this report aims to explain our approach towards attaining our sustainable investment objective. The asset management industry is facing an environment of changing regulations and increased scrutiny around sustainability claims. Indeed, when it comes to deciding between green and non-green investments, we feel to some extent that regulation is running ahead of the data. However, we also find that work performed towards this end improves our understanding of the portfolio companies and their impact on the environment.

Figure 3. Performance of DNB Renewable Energy fund versus top ten holdings in fund



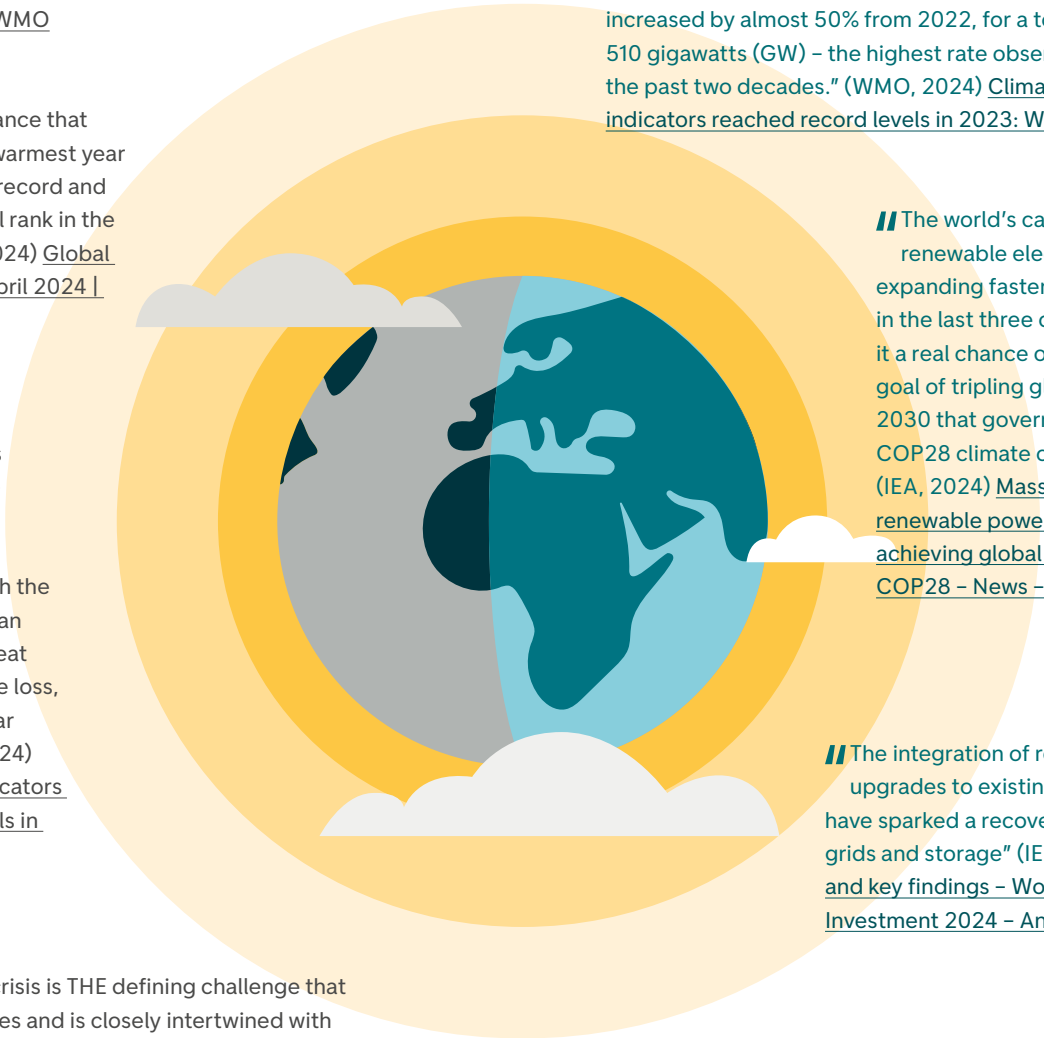
2 The time for action is now

"2023 was the warmest year on record, with the global average near-surface temperature at 1.45C (with a margin of uncertainty of +-0.12C) above the pre-industrial baseline. It was the warmest ten-year period on record" (WMO, 2024) Climate change indicators reached record levels in 2023: WMO

"There is a 61% chance that 2024 will be the warmest year in NOAA's 175-year record and a 100% chance it will rank in the top five." (NOAA, 2024) Global climate report for April 2024 | NOAA Climate.gov

"Climate change is about much more than temperatures. What we witness in 2023, especially with the unprecedented ocean warmth, glacier retreat and Antarctic sea ice loss, is cause for particular concern" (WMO, 2024) Climate change indicators reached record levels in 2023: WMO

"The climate crisis is THE defining challenge that humanity faces and is closely intertwined with the inequality crisis – as witnessed by growing food insecurity and population displacement, and biodiversity loss" (WMO, 2024) Climate change indicators reached record levels in 2023: WMO



"Renewable energy generation, primarily driven by the dynamic forces of solar radiation, wind and the water cycle, has surged to the forefront of climate action for its potential to achieve decarbonization targets. In 2023, renewable capacity additions increased by almost 50% from 2022, for a total of 510 gigawatts (GW) – the highest rate observed in the past two decades." (WMO, 2024) Climate change indicators reached record levels in 2023: WMO

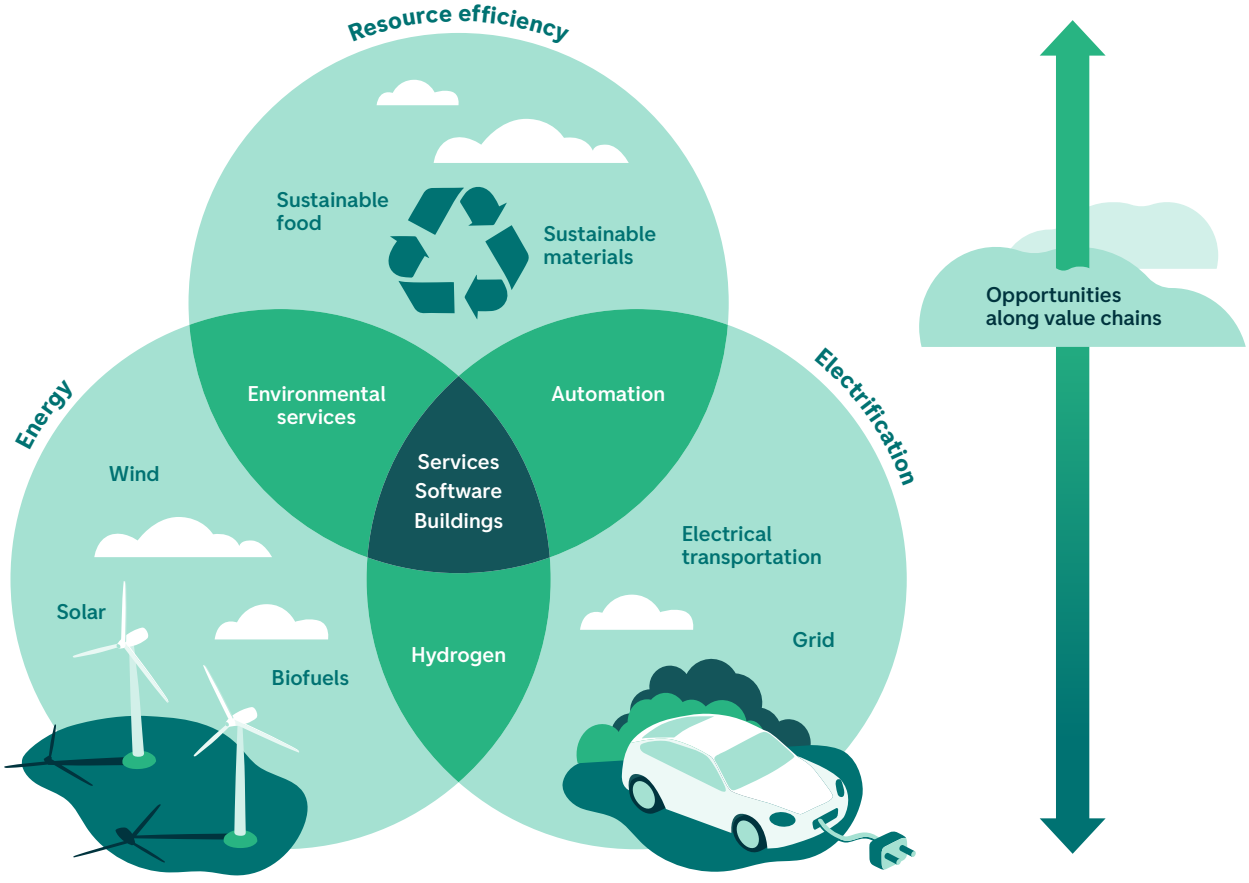
"The world's capacity to generate renewable electricity is expanding faster than at any time in the last three decades, giving it a real chance of achieving the goal of tripling global capacity by 2030 that governments set at the COP28 climate change conference" (IEA, 2024) Massive expansion of renewable power opens door to achieving global tripling goal set at COP28 – News – IEA

"The integration of renewables and upgrades to existing infrastructure have sparked a recovery in spending on grids and storage" (IEA, 2024) Overview and key findings – World Energy Investment 2024 – Analysis – IEA

"Global energy investment is set to exceed USD 3 trillion for the first time in 2024, with USD 2 trillion going to clean energy technologies and infrastructure" (IEA, 2024) Overview and key findings – World Energy Investment 2024 – Analysis – IEA

3 Our investment universe

Figure 4. Our investment universe



To avoid catastrophic, irreversible damage to our planet, the IPCC estimates that we need to halve global emissions by 2030 and reach net-zero by 2050. The last half of this decade will be critical to delivering an orderly transition in line with the goals of the Paris Agreement. We believe that the companies providing solutions, who understand the drivers behind net zero and which are prepared for regulatory change will be well positioned to benefit from the economic opportunities arising from the transition to the low carbon economy.

A broad interpretation of the environmental theme

Before conducting any financial fundamental evaluation of equities, we investigate the environmental angle of a company and seek to understand if the business is significantly driven by enabling a better environment or not. The result is a broad universe of companies with exposure to the environmental theme.

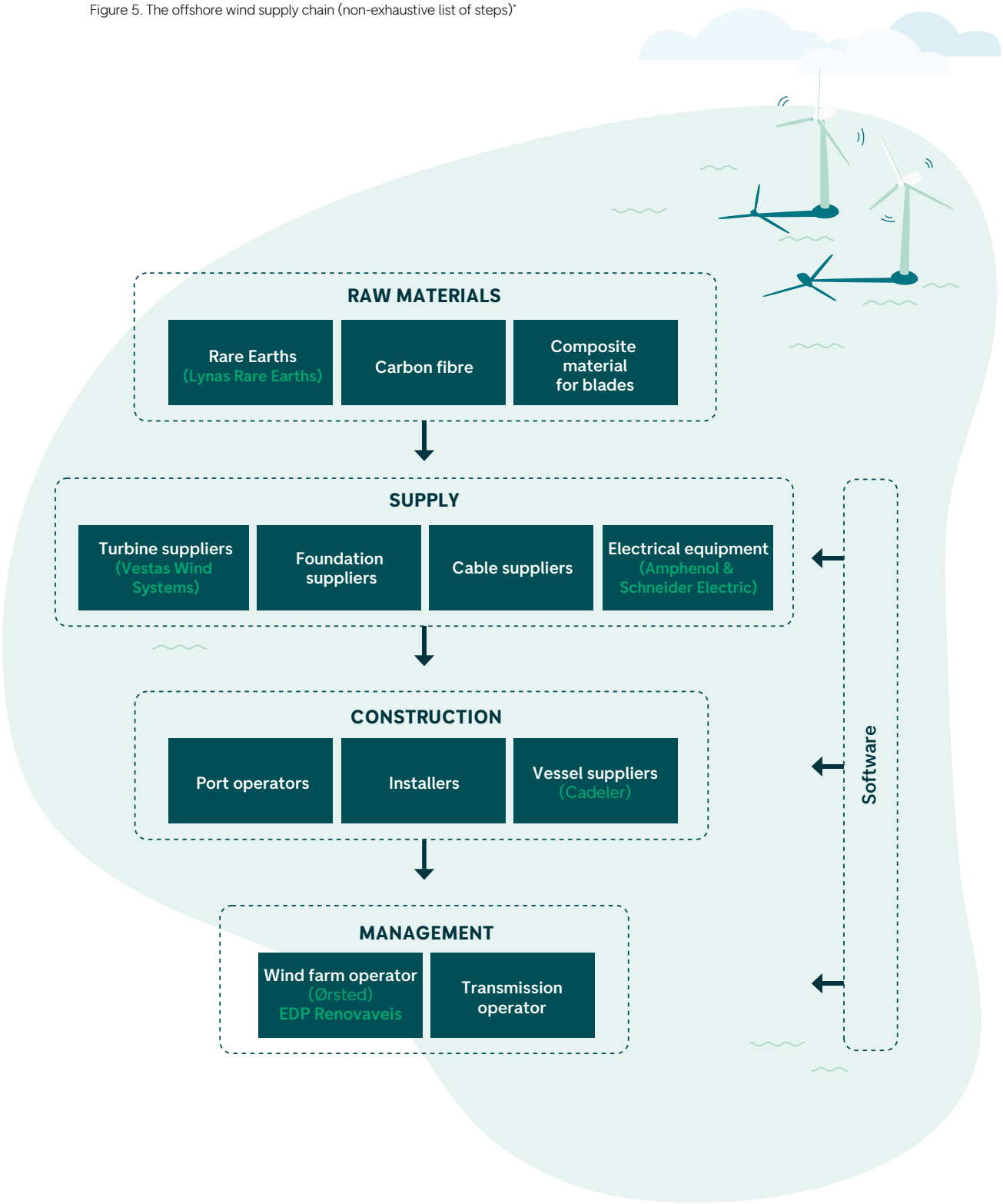
Clear environmental enablers are a natural part of the universe. These are the companies and sectors that contribute directly and positively to environmental challenges. An example is renewables – a large part of the decarbonisation story will come from renewables and technology that already exists today. In addition, nascent technology, such as hydrogen, carbon capture and storage, and recycling/circularity solutions still need to be developed and scaled and will also play a significant role. The availability of cheap renewable energy also drives electrification, which enables emissions reductions within hard-to-decarbonise sectors, such as steel production.

However, we also see opportunities within industries providing "less obvious" solutions. These are the companies that deliver products and services that enable emissions reductions along value chains. We believe that some of the most exciting opportunities exist within this category, as you can often find "hidden gems" with attractive business models and strong competitive advantage. The International Energy Agency (IEA) estimates that annual clean energy investment needs to more than triple by 2030 to around 4USDtrn to reach net zero by 2050[1]. The companies providing or enabling solutions will therefore experience tailwinds in their financials as the world economy makes investments to decarbonise the global capital stock. They are also well-placed to benefit from structural drivers from policy, shifting focus from investors, and increased societal expectations on climate.

The role of "less obvious" solutions can be better understood by looking at an example. Figure 5 outlines examples of current portfolio holdings and which part of the offshore wind supply chain they feed into. Note that this is not an exhaustive list of all steps in the supply chain. In this example, the renewable energy that is generated is the part of the value chain which can be considered "obviously green". However, the companies providing critical inputs that facilitate the renewable energy generation are also interesting to look at. Without these, it would not be possible to generate this renewable energy.

1 Net Zero by 2050 – Analysis – IEA

Figure 5. The offshore wind supply chain (non-exhaustive list of steps)*



*Net Zero by 2050 – Analysis - IEA

A dynamic universe

Our understanding of the environmental theme is not static – it will continue to evolve over time as expectations, policy and technology develop. Further, there are numerous ways to measure if a company is significantly driven by enabling a better environment. We can look at percentages of revenue, profits, assets, Research and Development (R&D), capital expenditure (Capex), and the sum-of-the-parts value which provides climate and environmental benefits. Data availability may also influence how our view progresses, as even though this information is potentially useful for any investment candidate, in practice, the data will not always be available. Data availability will also be somewhat dependent on which stage of the business lifecycle the company is in. For instance, in earlier phases, such as start-up and growth, R&D and Capex will be most relevant. For mature businesses, profits become more important. We also steer clear of businesses with controversial environmental angles, as we see repricing of climate risk as being negatively skewed for such companies and clients investing in environmental fund strategies typically do not want this exposure.

Case study: Cambi

371,760 tCO2 PAE estimated for Thermal Hydrolysis Pre-treatment technology

50% higher biogas production

Lower biosolids volumes for recycling or energy recover

Higher digester throughput (up to 3x)

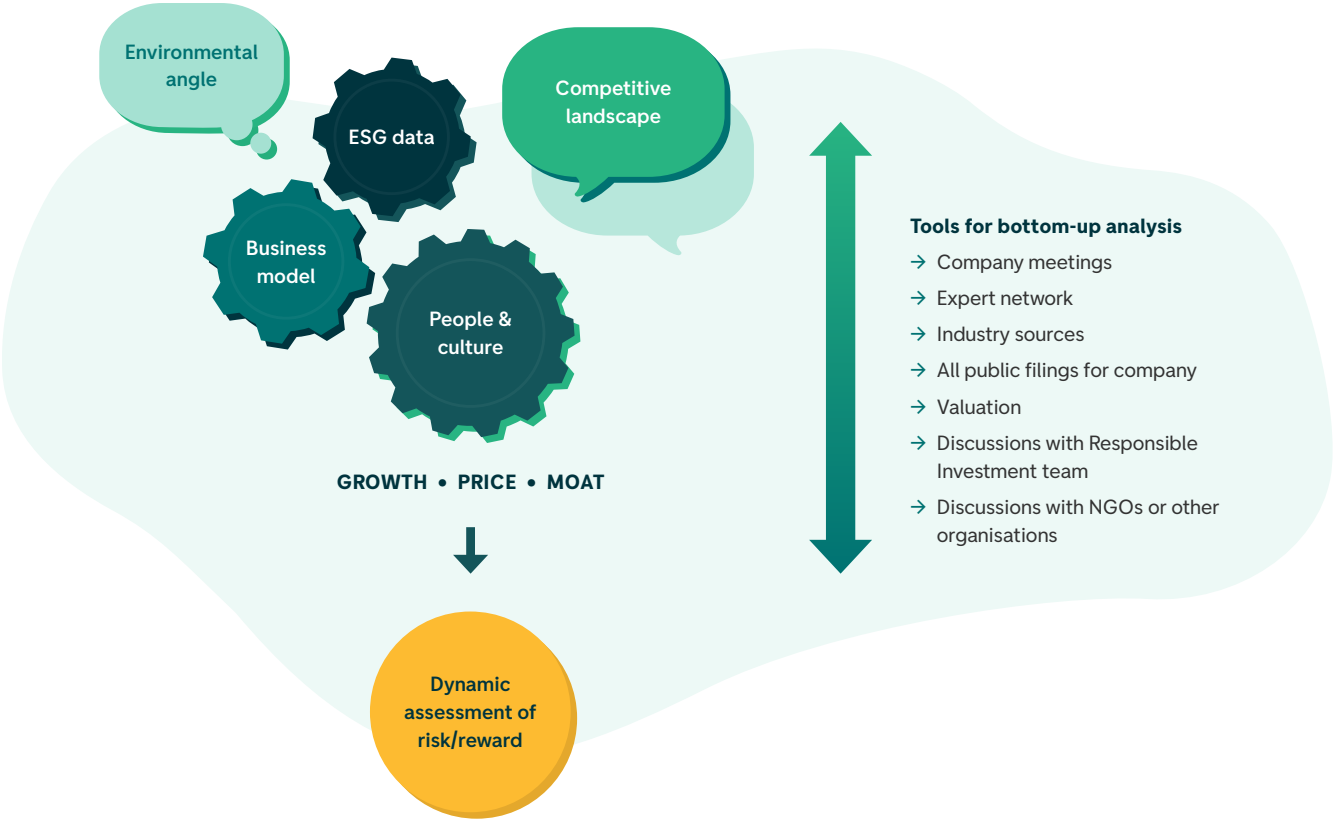
Exceptional quality biosolids appreciated in land application

Sources: Cambi AR 2023, ISS-ESG

Portfolio company Cambi is a world-leading supplier of technology and solutions for converting wastewater solids and organic wastes into valuable bioresources, such as biogas and soil products. Its Thermal Hydrolysis Process (THP) is used to treat sewage sludge and for bio-degradable waste treatment. This has advantages in terms of increased biogas production, improved biosolids dewatering, high-quality biosolids (sterilised sludge), increased digester throughput, and lower carbon footprint, as well as being low maintenance and easy to operate.

4 Our investment process

Figure 6. Our investment process



Investment philosophy and process

We believe investment returns are driven by a thorough assessment of competitive advantage, growth opportunities and intrinsic value relative to the share price. The investment process comprises a set of tools to evaluate and understand these most important aspects of the investment philosophy.

The process is bottom-up and driven by a curiosity for businesses models, and, more broadly, an appetite for understanding how the world works. In practice it includes a review of all public company filings and various industry sources. Beyond this we particularly enjoy expert networks and company meetings as they yield good chances of understanding corporate culture. Valuation is another part of the process worth highlighting. We enjoy building models, thinking through scenarios, and comparing our views with those prevailing in the market.

We believe in holding equities for the long term and are attracted to companies with proven value creating capabilities. Over time we believe such companies, properly identified, will continue to generate attractive returns. We also see opportunities with shorter time horizons, for example where investor psychology leads to outsized reactions in the share price. Lastly, we observe a diverse and dynamic investment universe, and we strive for a process that is flexible and adaptable to change.

ESG is integrated into the investment process

Environment, Social and Governance (ESG) considerations permeate our investment process. It seems obvious to us that a proper assessment of an investment's risks and rewards must include these considerations.

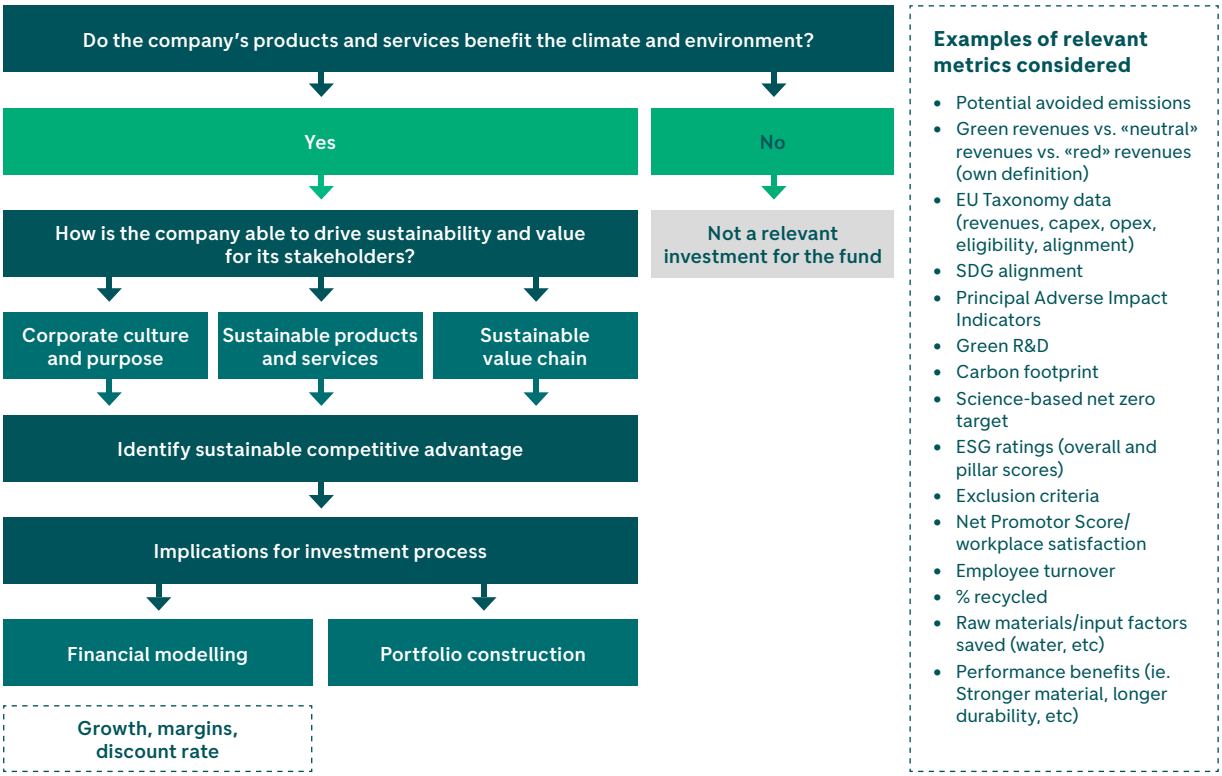
Addressing climate challenges is at the core of our investment mandate. However, we also believe that other ESG elements are important drivers of value creation. Companies that have a sustainable approach to its employees, corporate culture, products and services, supply chain and corporate governance will attract talent over time, which will in turn develop the best products and services, which will attract customers, which in turn attracts investors. This continuous process results in a lasting competitive advantage for those that are best-in-class.

For example, we believe that businesses offering solutions to lower their customer's carbon footprint often face attractive growth prospects. Additionally, if their environmental innovation velocity is faster than competition, they are likely to grow their competitive advantage in the future. Such findings guide our view on revenue growth and expectations for return on capital.

Culture is another source of competitive advantage. For example, we seek to understand whether the company's sustainability department serves mainly reporting requirements or whether they actively partake in the business' core activities. Do management set the right example by having a thorough understanding of the environmental drivers of the business' products and services? Are salespeople able to sell based on a wholistic value proposition that includes lower emissions or resource intensity?

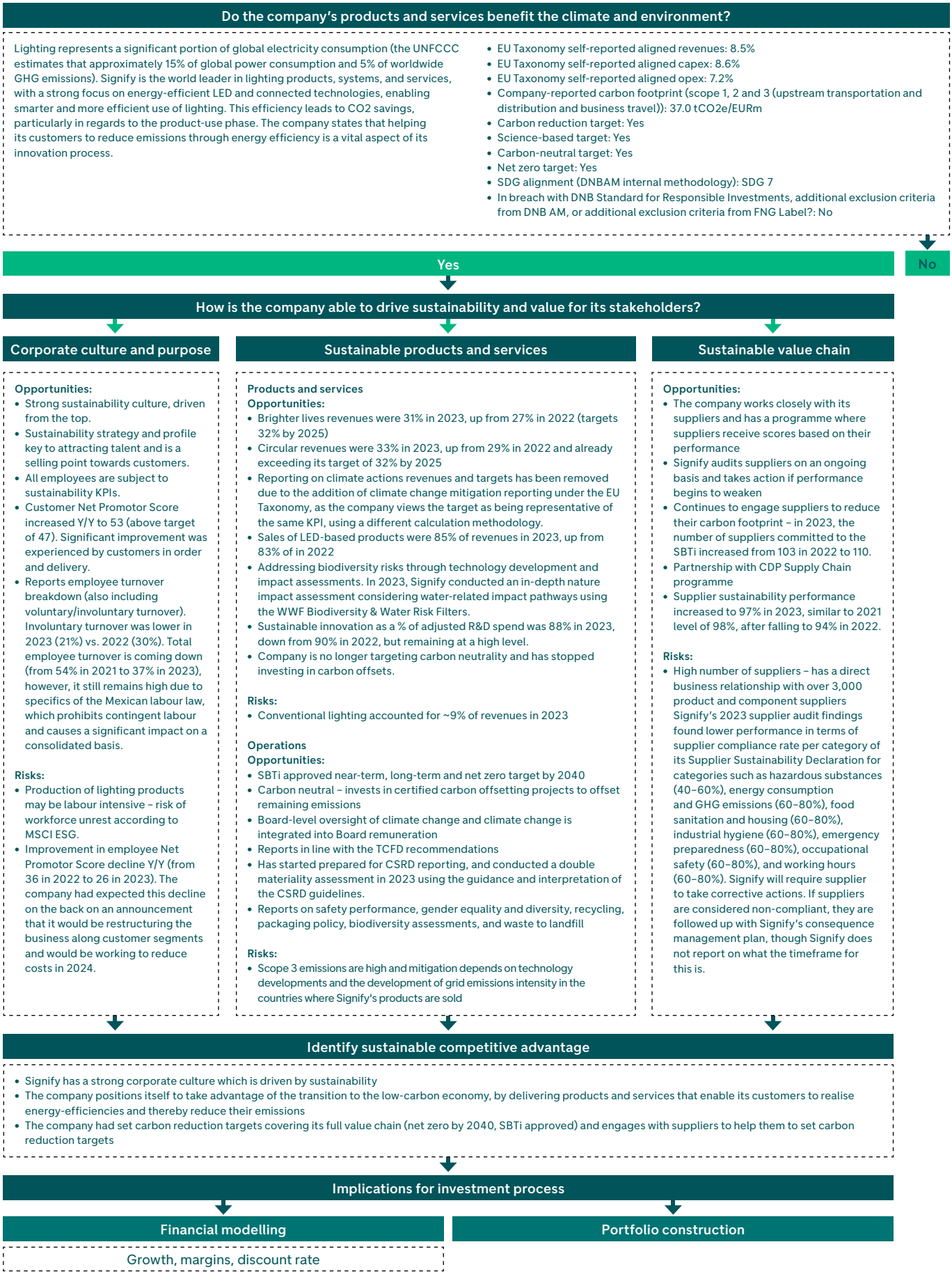
The flow chart below demonstrates the team's ESG integration process.

Figure 7. Our ESG integration process



The flow chart below demonstrates the process by way of a company example.

Figure 8. An assessment of Signify using our ESG integration framework



5 Close collaboration with our Responsible Investment team

Successful and thorough integration of ESG into the investment process also requires a close collaboration with DNB Asset Management's (DNB AM) Responsible Investment team. DNB AM's Responsible Investment team is unique, with both broad ESG and climate change competency, as well as portfolio management experience. This experience provides a basis for interesting discussions between teams, and a mutual understanding of how ESG drives value creation.

Figure 9. DNB AM's Responsible Investment team

Lise Børresen

Head of Responsible Investments

Lise was hired as head of RI fall 2022, after working as an analyst in the team since 2021. Her main responsibilities have been related to the oceans, climate change and our work with the TCFD. Lise has also supported the integration of ESG into our fixed income portfolio.

Lise holds an MSc in Finance from the Norwegian School of Economics. She has previously worked as an Investment Analyst at the Gjensidige Foundation

Karl G. Høgtun

Senior Analyst

Karl is a Senior Analyst at DNB Asset Management. He is an expert in active ownership and governance including proxy voting. He is also responsible for our work with biodiversity and sustainable oceans.

Karl holds an MBA and MA of International Management. He has worked with Norwegian and global capital markets since 1990 in several roles including previously being a portfolio manager and head of the Nordic Equities team in DNB AM.

Henry Repard

Senior Analyst

Henry leads our work on climate (including TCFD and net zero 2050) and water.

Henry holds an MSc from University College London. He has experience as an analyst from KLP Asset Management and Carbon Disclosure Project before joining the team in 2018.

Peder Heiberg Sverdrup

Analyst

Peder works with screening, analysis and reporting. He is also involved in our work on human rights.

He holds an MA (Hons) from the University of St Andrews. He has previously worked in Norfund before joining the team in the summer of 2022.

Olav Midtveit Bertelsen

Analyst

Olav works with ESG-data, regulatory framework and reporting. He also supports the work on water sustainability and the integration of ESG for fixed income.

Olav holds a MSc in Finance from Grenoble Ecole de Management. He has previous experience from economic research and fixed income investment strategy.

Read more about how the Responsible Investment team works in our 2023 Annual Report on Responsible Investments.

How has the approach to ESG evolved over time?

ESG integration has not always been central to how asset managers manage sustainability risks and opportunities. The understanding, practices and actors involved have changed and developed since DNB AM first started working with responsible investments in 1988. Previously, the focus has been on excluding "sin stocks", with tobacco, gambling, pornography, weapons, and alcohol considered unethical and consequently excluded from investment universes. ESG has since shed its activist image and is considered mainstream in investment management today. Reporting and integrating ESG risks and opportunities into investment decision making has also been incorporated into regulation, for example through the action points of the European Union's (EU) Action Plan on Sustainable Finance.

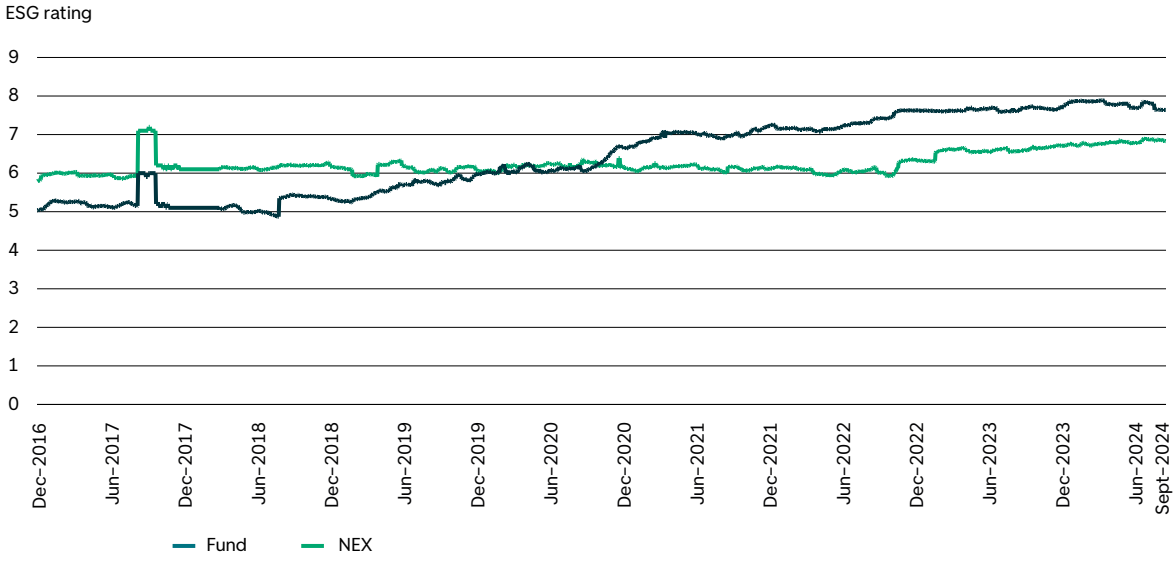
ESG metrics

ESG score

ESG scores provide a measure of a company's performance with respect to ESG issues. Though some providers seek to include factors to capture opportunities, our opinion is that ESG scores are primarily an indicator of risk. We believe that other metrics and frameworks are better suited to capture opportunities, such as potential avoided emissions.

The challenges associated with ESG scores are well known. Issues include large-cap bias, disclosure bias, backward-looking focus, and low correlation between data providers. DNB Renewable Energy does not target an ESG score higher than its benchmark. The portfolio management team is of the view that ESG scores should not be a hinderance for investing, especially in cases where the team has identified a strong environmental case for the company. Nonetheless, low ESG ratings are flagged in regular screening, and are a catalyst for dialogue where expectations on sustainability and reporting are communicated. We believe that this is a good tool for pushing companies in a positive direction and may provide an opportunity to benefit from an increased ESG rating over time. Since January 2021 we have experienced a consecutively higher ESG score in the fund compared to the benchmark and the broad MSCI World Index. We cannot promise that this will always be the case, but this recent trend is in line with our expectations given the team and fund strategy's direction of travel.

Figure 10. Development of the DNB Renewable Energy fund's weighted-average ESG rating over time (as at 30.09.2024)



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Forward-looking metrics

In recent years, the metrics used to understand ESG-related risks and opportunities have become increasingly sophisticated. The conversation has turned from historical, backward-looking data, such as carbon footprint, to metrics that seek to tell us something about direction of travel.

Scenario analysis

An important recommendation from the Taskforce on Climate-related Financial Disclosures (TCFD) is to conduct scenario analysis. DNB AM's Responsible Investment team has been working on scenario analysis since 2018.

Scenario analysis is performed to better understand climate-related costs and opportunities utilising MSCI ESG's Climate Value-at-Risk (CVaR) model. CVaR is defined as "…a forward-looking, quantitative model that forecasts the present value of future costs and benefits under different potential climate scenarios. By expressing this present value of climate costs as a percentage of the current company valuation, the model provides a "maximum drawdown" of the firm's current valuation due to climate change" (MSCI ESG, 2023). For a more detailed description of scenario analysis please refer to pgs. 78–83 of our 2023 Annual Report on Responsible Investments.

To assess the portfolio's CVaR, we use data from MSCI ESG based on the Integrated Assessment Model (IAM) REMIND. Last year was our first year using REMIND, as we had previously used AIM-CGE as it was the only IAM allowing for assessment under more than one warming scenario at that point in time. The move to REMIND is based on the fact that most asset managers now utilise the Network on Greening the Finance System's (NGFS) scenarios to assess climate risks and opportunities. We also believe that the underlying carbon price assumptions are more realistic in this IAM. A description of REMIND and the warming scenarios assessed is outlined in the figure below.

We have chosen to focus on orderly scenarios in the 1.5C and 2C scenarios in this assessment. These assume that climate policies are introduced early and become gradually more stringent. Both physical and transition risks are relatively subdued. In the 3C scenario, we utilise the hot house world scenario. This scenario assumes that some climate policies are implemented in some jurisdictions but that globally, efforts are insufficient to halt significant global warming. The scenarios result in severe physical risk, including irreversible impacts like sea-level rise. Note that this includes both the Current Policies and Nationally Determined Commitment scenarios. These choices are in line with last year's assessment and therefore allow for comparison between year-on-year. In the current iteration of MSCI ESG's model, the only determinant of differences in physical risk scenarios is the selection of "average" or "aggressive" physical risk. Moving forward, the chosen NGFS scenario will also impact the outcome of physical risk.

MSCI ESG's CVaR model allows for an assessment of both average and aggressive physical risk scenarios. The average scenario represents the most likely impact of climate change in the assessed period. The aggressive scenario, which is derived from the 95th percentile of the cost distribution of estimated extreme weather costs, is considered a worst-case scenario. Both scenarios utilise a Business-as-Usual (BAU) approach in modelling physical impacts due to lag within the climate system. The IAM selected does not impact the physical risks and opportunity results.

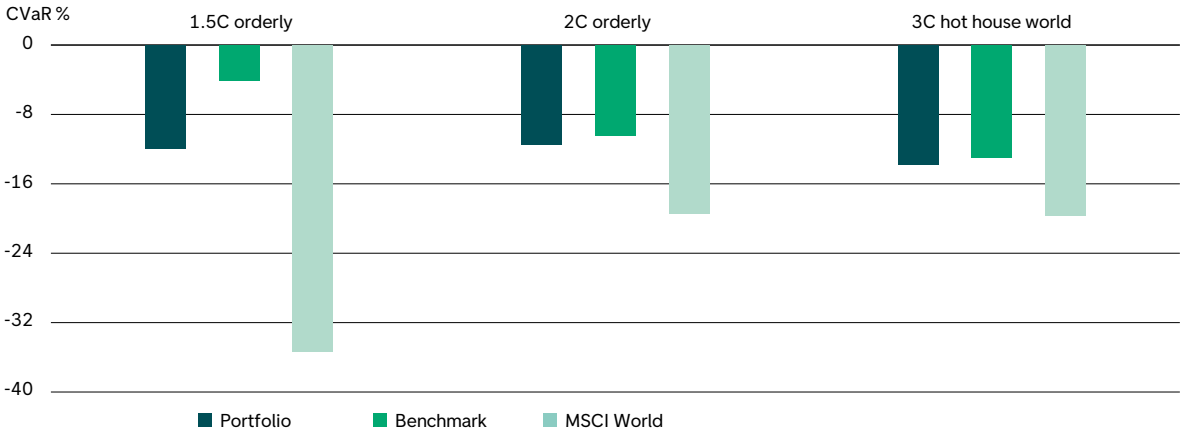
Figure 11. Description of Integrated Assessment Models (IAMs) covered by MSCI ESG

Integrated Assessment Model	Model description	Warming scenario assessed
REMIND	"An energy-economy general equilibrium model linking a macro-economic growth model with a bottom-up engineering-based energy system model. It covers twelve world regions, differentiates various energy carriers and technologies and represents the dynamics of economic growth and international trade."[1]	1.5C, 2C, 3C

[1] Integrated Assessment Model Consortium Wiki, Accessed 15 January 2022

The CVaR assessment as at 30.09.2024 reveals the following results:

Figure 12. CVaR under 1.5C, 2C and 3C scenarios using REMIND (aggressive)



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A positive CVaR implies that the overall portfolio-level impact will result in profits under the scenario, whereas a negative CVaR implies that there will be portfolio-level costs associated with the scenario. Figure 12 reveals negative CVaRs for the DNB Renewable Energy fund, its benchmark (the NEX index), and the MSCI World index in all scenarios analysed. However, both the fund and its benchmark show significantly less negative CVaR than the MSCI World across each warming scenario.

The drivers of positive or negative CVaR can be investigated further by examining the pillars that underpin the result - transition risks and opportunities and physical risks and opportunities. Looking first at transition risks and opportunities – in Figure 13, we see that technology opportunities provide significant positive CVaR for both the fund and its benchmark. By comparison, the MSCI World shows a 4.4% CVaR contribution from technology opportunities versus the fund's 26.9% in the 1.5C scenario. This aligns with our expectations, as the fund specifically invests in sustainable enables of a better environment. However, compared to its benchmark, technology opportunities are lower, and transition risks (from scope 1, 2 and 3 emissions) are higher. This leads to the benchmark receiving positive total transition CVaR in all scenarios, whereas the fund receives negative total transition CVaR in all scenarios. This was also observed in last year's assessment. Again, the relatively higher technology opportunities can be explained by the benchmark's greater exposure to "pureplay" sectors (see Figure 14), such as solar, storage/fuel cells and grid, while the fund is significantly overweight energy saving, where positive contributions to climate and the environment are perhaps more indirect and difficult to measure. MSCI ESG measures technology opportunities primarily by assessing companies' low carbon patents and linking these to future green revenue potential. This is likely easier to do for pureplay companies. The fund's relatively higher transition risks can again be explained by the differing sector exposures, which lead to the fund having a slightly higher weighted average carbon footprint compared to its benchmark (see Figure 41). We are well aware of the

risks associated with the fund's higher weighted average carbon footprint and this is the background for our work on assessing companies' net zero targets (see section on our *Commitment to engage on science-based net zero target setting*). At the same time, this is also the reason we place emphasis on avoided emissions – though carbon emissions can tell us something about transition risk, they cannot sufficiently inform us about the climate-related opportunities associated with companies' products and services. MSCI ESG's methodology does not consider avoided emissions specifically, and so these impacts are not reflected in this assessment. We believe our fund is well-placed to capitalise on these opportunities (see chapter on *Key findings of potential avoided emissions analysis for more information*).

Figure 13. CVaR transition risks and opportunities under 1.5C, 2C and 3C scenarios for the DNB Renewable Energy fund and the NEX index using REMIND (as at 30.09.2024)

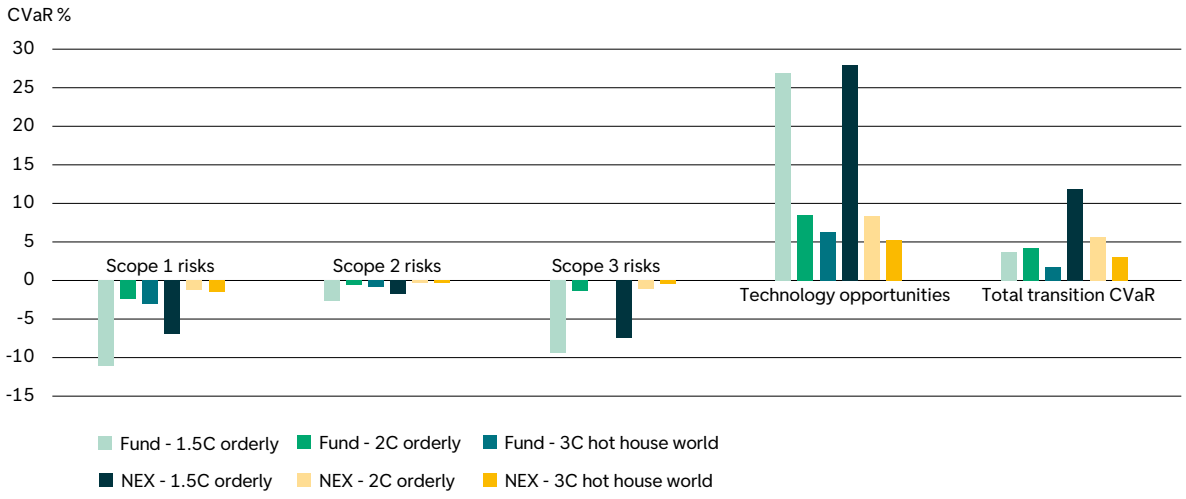

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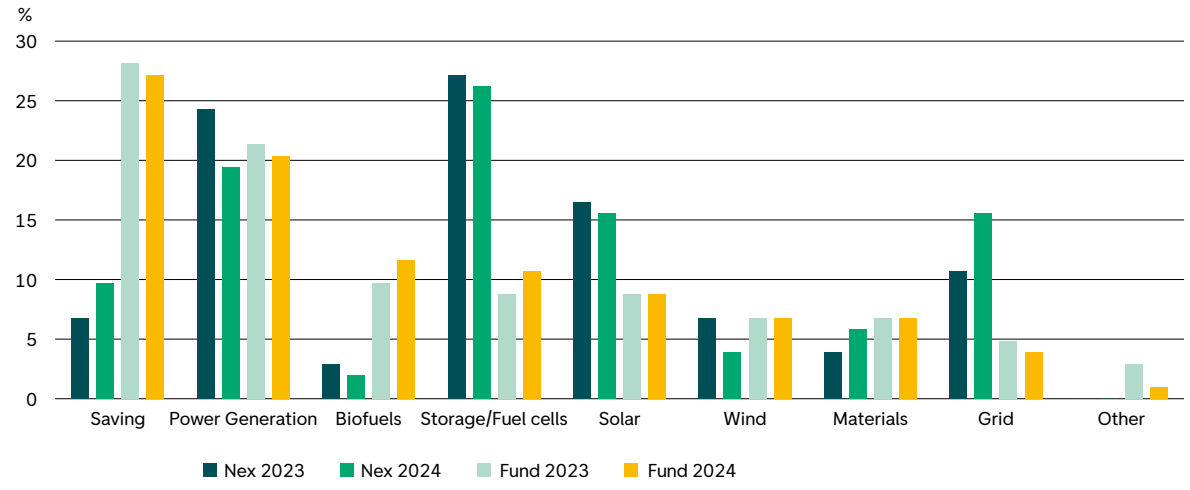
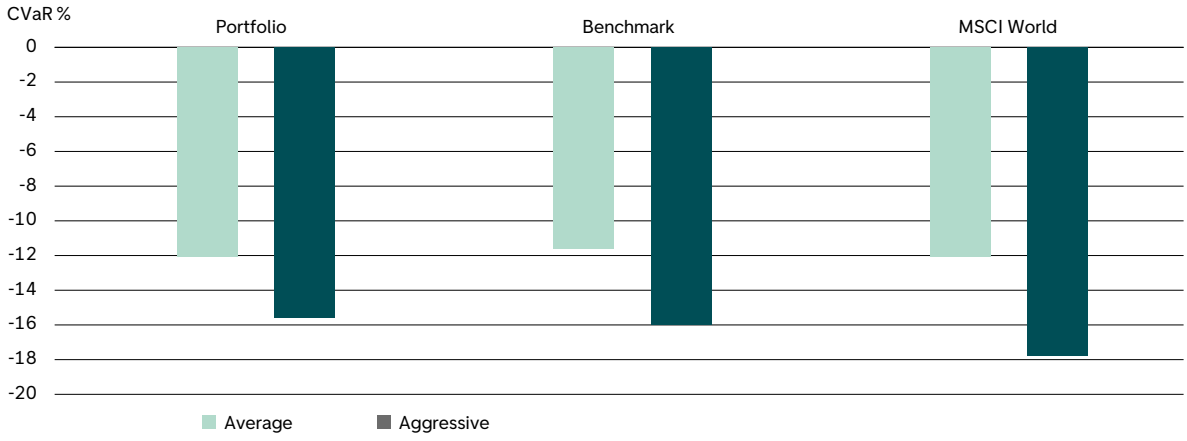
Figure 14. Sector allocation of the DNB Renewable Energy fund and the NEX index (as at 30.09.2024)



Source: DNB AM, Bloomberg

Next, we look more closely at the impact of physical risks and opportunities on portfolio CVaR. The physical risks resulting from climate change can be "event driven (acute) or longer-term (chronic) changes in climate patterns". Examples of acute physical risks can include flooding, wildfires or severe storms, while chronic risks can include sea level rises and heat waves. As demonstrated in Figure 15, the aggregated physical risks and opportunities are negative for the fund, its benchmark and the MSCI World in both the average and the aggressive REMIND scenarios. Naturally, regional exposure at the asset-level is the main driver behind differences between portfolios. For DNB Renewable Energy, coastal flooding is the greatest contributor to physical climate risk in both scenarios, closely followed by extreme heat. On the other hand, extreme cold and extreme snowfall are estimated to have a small positive contribution in both scenarios. We see these results as interesting starting points for discussion with companies, to understand how they are managing these risks at asset level.

Figure 15. Physical risks and opportunities under average and aggressive scenarios (as at 30.09.2024)



Source: ©2024 MSCI ESG Research LLC. Reproduced by permission

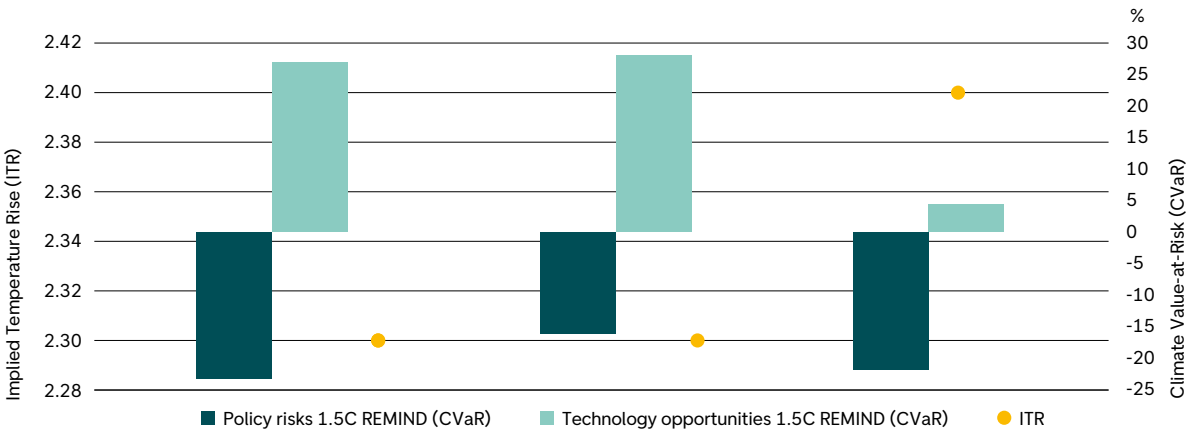
There are a number of factors which may have influenced the findings observed in the analysis, such as company weights, sector weights, estimated data and assumptions, and impacts arising from methodological changes. Therefore, these scenario analyses are only one input into our company analysis regarding climate risk and opportunity. We continually look for products and tools which can provide insight into these risks and opportunities, to ensure we are implementing a best-in-class approach.

Implied Temperature Rise

MSCI ESG's Implied Temperature Rise (ITR) metric aims to provide an indication of how companies and investment portfolios align to global targets. In recent years, there has been increased interest in demonstrating the temperature trajectory of funds. At the same time, data providers have also been scrutinised for their methodologies. Critics question the helpfulness of such scores, given their heavy reliance on assumptions and estimates, and the preciseness of the output. We believe the criticisms are warranted, given that some company-level results are often difficult to understand. However, the approach and underlying data continue to evolve, and over time the results have become more in line with our expectations. A few years ago, we highlighted that some independent power producers which develop and own solar and wind, such as Scatec, were receiving ITR scores of almost 3C, which we found difficult to understand. In recent versions of the methodology, this figure has dropped to 1.3-1.4C, aligning more closely with our expectations.

If we combine some insights from the previous section (CVaR data on policy risks and opportunities) with ITR data, we see the following:

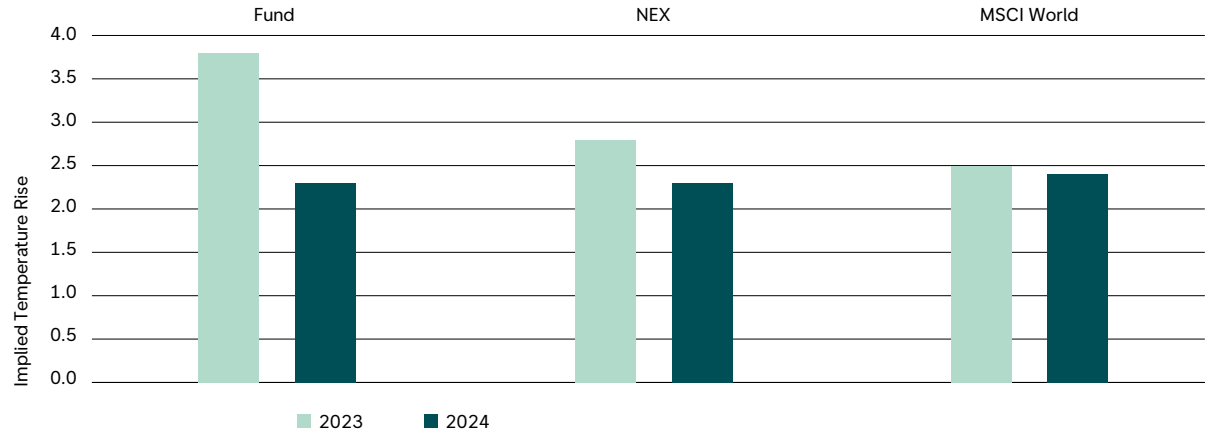
Figure 16. Implied Temperature Rise (ITR) and CVaR policy risks and technology opportunities for the DNB Renewable Energy fund, the NEX benchmark, and the MSCI World index (as at 30.09.2024)



Source: ©2024 MSCI ESG Research LLC. Reproduced by permission

With metrics relying heavily on underlying assumptions, we would typically expect results at company level that are more difficult to understand, whilst high-level results provide interesting signals which may be actionable. Last year we questioned the intuitiveness of the result, as the MSCI World received a lower ITR than the fund which specifically invests in companies providing solutions for the climate and environment. This year, we see that the MSCI World now shows a slightly higher ITR compared to the fund and its benchmark, as shown below.

Figure 17. Implied Temperature Rise (ITR) DNB Renewable Energy fund, the NEX benchmark, and the MSCI World index in 2023 and 2024 (both as of end of September in the year)



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The key modelling steps of the ITR broadly consider 1) sectoral decarbonisation per country and allocate a carbon budget per company, 2) companies' future emissions, 3) carbon budget versus future emissions, and 4) convert results of under/overshoot to ITR.

Based on this methodology, companies' carbon footprint and targets will likely have a material impact on the result. In the table below, we illustrate how the weighted average carbon footprint and weighted average share of companies with carbon reduction targets have evolved over the last few years for the fund, its benchmark and the MSCI World using MSCI ESG data as of September in the year of analysis.

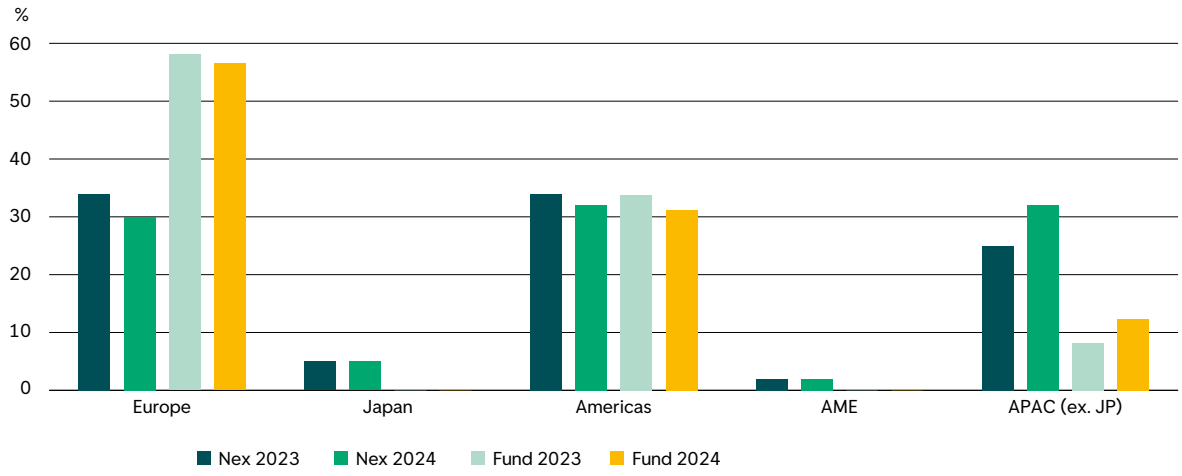
Table 1. Changes in weighted-average carbon footprint and weighted-average share of companies with carbon reduction targets over 2023–2024 for the fund, the Nex and the MSCI World

Weighted-average carbon footprint (tCO2e/USDm)	Fund	Nex	MSCI World
2024	136.1	127.8	96.6
2023	146.6	126.9	112.1
% change	-7%	1%	-14%

Weighted-average share of companies with carbon reduction targets	Fund	Nex	MSCI World
2024	80%	60%	92%
2023	61%	36%	83%
% change	31%	67%	11%

The fund's higher weighted-average carbon footprint coupled with a relatively higher weighted-average share of companies with carbon reduction targets are likely the primary explanation for why the fund's ITR is now in line with the Nex's. It also appears as though the significant increase in companies with carbon reduction targets explains why the fund's ITR has decreased more year-on-year compared to the Nex. We believe the MSCI World's ITR has remained relatively stable year-on-year as its carbon footprint has decreased approximately in line with the increase of share of carbon reduction targets. It is more difficult to understand why the Nex's ITR has not decreased significantly given the dramatic increase in share of companies with carbon reduction targets. However, the overall share of companies with carbon reduction targets remains much lower than the fund's and the MSCI World's. We also see in Figure 18 that the Nex's exposure towards APAC (ex. JP) has increased Y/Y, which may also impact the overall ITR.

Figure 18. Geographical split of fund and the Nex 2023 and 2024 (September)



Finally, the ITR methodology does not appear to account for companies' emissions-avoiding capabilities the way it is structured today. Nonetheless, this metric is interesting to keep track of and monitor changes in over time. It may also help us to prioritise company engagements, should there be any noticeable outliers. We are also hopeful that companies' emissions-avoiding capabilities will be better captured in future iterations of the methodology as it develops over time.

Avoided emissions

Though we have viewed avoided emissions as a useful metric for some time, the metric has been out of favour in recent years. We believe that concerns (some of which overlap with those mentioned in the section *Shortcomings of potential avoided emissions analysis*) have included the following:

- **No recognised standard for calculating avoided emissions:** this makes it difficult to compare figures between companies and to verify data.
- **Figures are based on a number of assumptions:** calculations are heavily reliant on assumptions. Companies are not always transparent about what the underlying assumptions are, and these have the potential to heavily impact final figures.
- **Scalability:** avoided emissions calculations are often difficult to scale, given that avoided emissions potential may differ significantly by product. As a result, this data is often offered as a bespoke service at the product level, making it a more costly exercise to perform.
- **Additionality:** cannot guarantee that the products and services lead to additional emissions avoidance that would not otherwise have taken place.
- **Misuse of avoided emissions:** there have been cases where avoided emissions have been netted against scope 1, 2 & 3 emissions to demonstrate net zero emissions. We believe this is an incorrect interpretation of the insights that can be gained from calculating avoided emissions. We do calculate net PAE in the chapter on *Results of PAE analysis*, as it is interesting to consider the high-level signals provided by this exercise, but we do not claim that our avoided emissions can be used to offset the emissions associated with our portfolio holdings.

However, it seems that attitudes towards avoided emissions are changing. Last year we flagged that an investor group spearheaded by Robeco and Mirova had been launched with the goal of establishing the first global database of avoided emissions factors and associated company-level avoided emissions[2]. This work commenced in January 2024 and will initially cover 80 specifically defined low-carbon solutions and create 9,600 avoidance factors during the first phase which will end in 4Q24[3]. The goal is to create "a standardised and transparent database of avoidance

2 About Interest in a global database of avoided emissions factors and associated company-level avoided emissions | PRI (unpri.org)
3 Work kicks off on database for standardised avoided emissions calculation | News | IPE

factors [making it] possible to quantify, compare and audit the emissions avoided by companies and projects, and thus encourage the redirection of financial flows that promote decarbonisation"[4]. We look forward to following developments in this space.

We are also seeing an increasing focus from corporates. This is evidenced by more companies calculating and reporting avoided emissions over time (see Figure 19), and the fact that ISS-ESG's assessment of our portfolio increasingly relies on self-reported avoided emissions figures. The latter indicates that ISS-ESG increasingly sees companies' self-reported avoided emissions figures as being credible, with robust methodologies and transparency on underlying assumptions. The share of self-reported avoided emissions figures utilised by ISS-ESG in this year's assessment was 34%, up from 31% in 2022 and 13% in 2021.

Regulation

ESG-related regulatory requirements have continued to develop quickly over the past year.

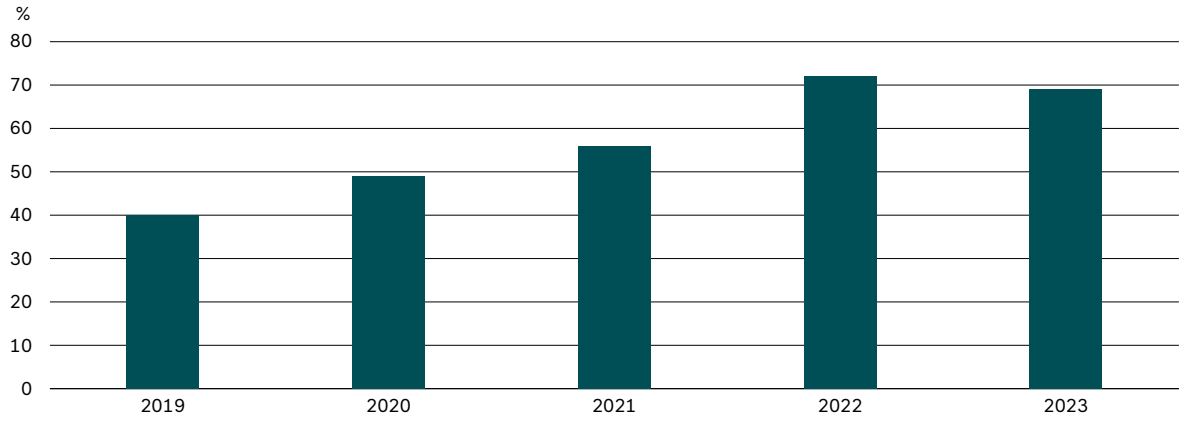
SFDR

As an Article 9 fund, we are required to demonstrate and report on sustainable investments. The regulation stipulates three steps to arrive at the conclusion that an investment is sustainable – the company must show positive contribution, it must fulfil the Do No Significant Harm (DNSH) criteria (using the Principal Adverse Impact Indicators (PAII)), and it must follow good governance practices[5]. It is up to each asset manager to determine the framework/methodology for demonstrating sustainable investments.

4 In case you missed it | Global standard for calculating emissions avoided announced by Mirova and Robeco – investESG.eu

5 In line with the SFDR Article 2(17) (Sustainable Finance Disclosure Regulation)

Figure 19. Compared-reported avoided emissions[6]

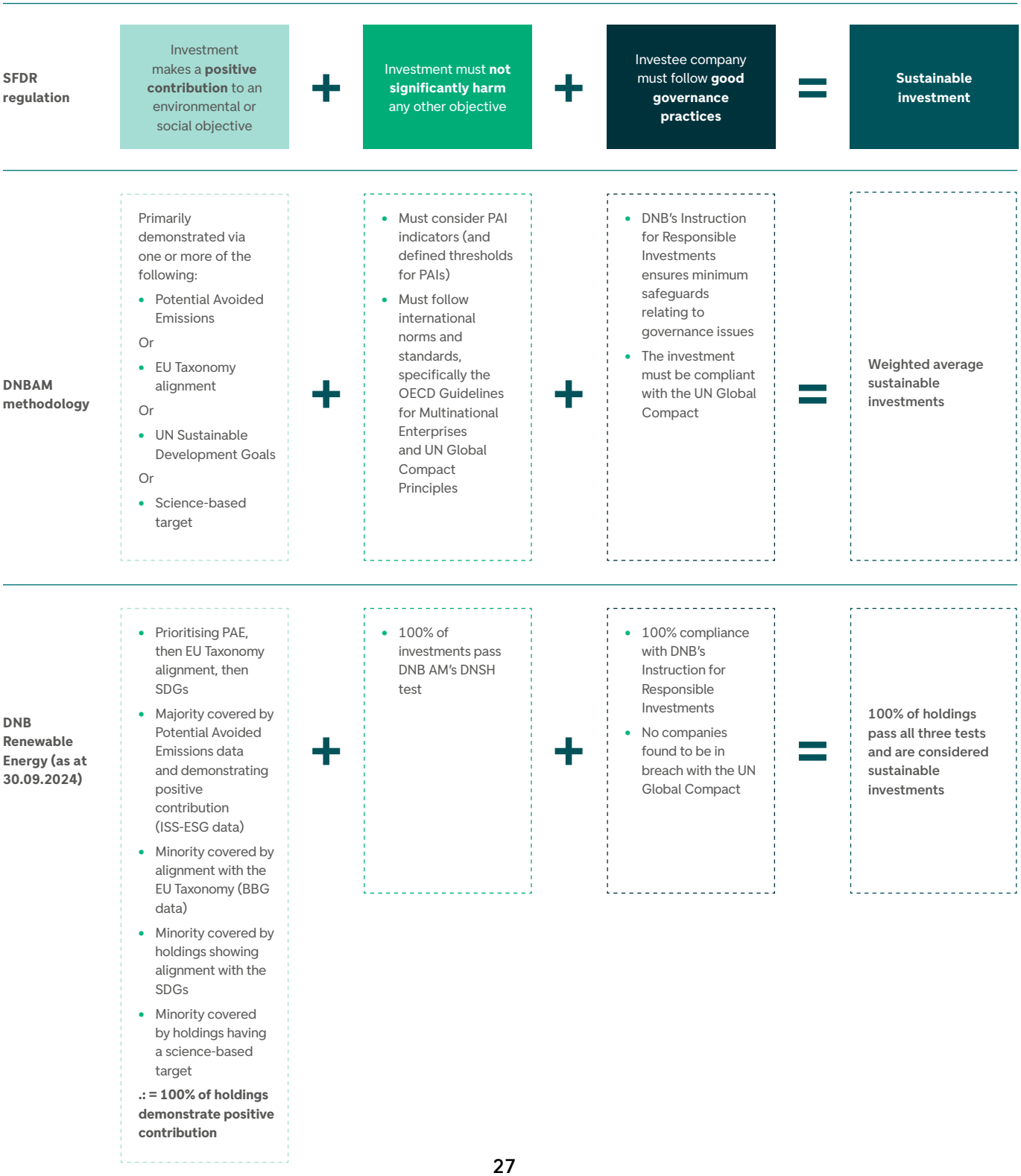


Source: CDP, DNB AM internal assessment

6 The basis of this assessment is all companies included in the PAE assessments between 2019-2022. CDP reporting and public reporting have been considered. Where CDP reporting is used for 2019 and 2020, responses to C4.5a on avoided emissions have been considered as indicative of reporting on avoided emissions.

The figure below demonstrates DNB AM's methodology for determining sustainable investments, and how this is applied for DNB Renewable Energy as an Article 9 fund.

Figure 20. Determining sustainable investments under the SFDR

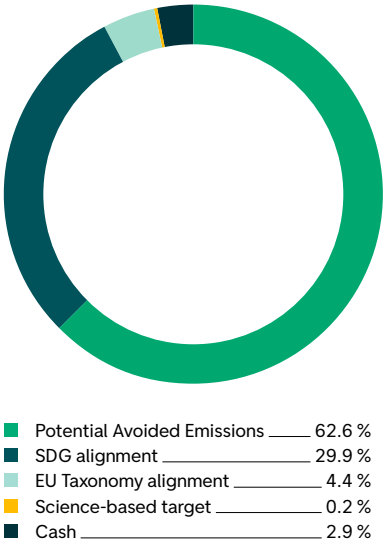


Note that the methodology outlined above will likely be subject to continuous improvement as data availability and quality increases. Additional clarifications from the EU Commission and the European Securities and Markets Authority (ESMA) regarding key concepts and legal definitions may also influence further development.

Positive contribution

The pie chart below illustrates how positive contribution was demonstrated for the fund as of the 30.09.2024:

Figure 21. Split demonstrating which metric has been used to demonstrate positive contribution for the fund as of 30.09.2024



Note that this type of aggregation is not required by SFDR reporting and is only presented here for informative purposes. For the purposes of this aggregation, we have prioritised as follows in the event of one of more positive contribution metrics being available: Potential avoided emissions, EU Taxonomy alignment, SDG alignment, and having a science-based target (SBTi).

- **Potential Avoided Emissions (PAE):** 63.9% of the portfolio demonstrates positive contribution using PAE. We prioritise using this metric to demonstrate positive contribution, as we believe that PAE best illustrates our thinking around companies' positive contributions to the climate and environment. We believe that companies that demonstrate PAE are providing real climate change solutions and will be better placed to capitalise on the world's requirement to cut emissions.
- **EU Taxonomy alignment:** We see that more companies are now reporting EU Taxonomy alignment than previously. In the above, four companies accounting for 4.4% of the portfolio weight use EU Taxonomy alignment to demonstrate positive contribution. However, 16 companies accounting for 36.3% of the portfolio weight report EU Taxonomy alignment.
- **SDG alignment:** 29.9% of the fund demonstrated positive contribution using SDG alignment. As a reminder, given DNB Renewable Energy's environmental mandate, SDG alignment only contributes toward positive contribution if alignment with environmental SDGs is shown. DNB AM defines SDG 2, 6, 7, 9, 11, 12, 13, 14, and 15 as environmental SDGs (either wholly or partially). A threshold for minimum revenue contribution from environmental SDGs is also specified internally. SDG alignment is based on data from S&P Trucost, as well as overrides by DNB AM in cases where we disagree with the methodology, or a company is not covered. Any override is subject to a robust governance process, which cumulates in approval by a committee before implementation.
- **SBTi:** Only 0.2% of the fund uses SBTi alone to demonstrate positive contribution. As SBTi is a metric focused on operational emissions, we typically expect that fund investments will show positive contribution through one of the other metrics which tells us more about positive contribution from companies' products and services.

Do No Significant Harm

Each investment must pass checks against all 18 mandatory PAIs and be compliant with the UN Global Compact to satisfy the Do No Significant Harm Test. In regard to the PAI checks, DNB AM applies internally set thresholds for each mandatory PAI. In practice, data from two providers is utilised. However, as data is still patchy, some proxies and manual inputs have been utilised to fill data gaps.

The process to ensure compliance is as follows:

Figure 22. SFDR process for an Article 9 fund

Figure 23. Company example of SFDR process for an Article 9 fund: Industrie De Nora

STEP 1	STEP 2	STEP 3	STEP 1
PM considers environmental angle of company in initial company analysis	Portfolio management team checks company for compliance in SFDR monitor, BBG, and MSCI ESG	ESG team checks against sector methodology and often engages with company	If sufficient evidence is available, overrides are implemented and portfolio management team can invest and the company is monitored for ongoing compliance
• **Electrode technologies:** production and sale of electrodes, catalytic coatings, electrolysers and related accessories intended for various electrochemical applications across several industries. • **Water technologies:** production and sale of systems and solutions for water and wastewater disinfection and filtration. • **Energy transition:** technologies (electrodes, catalytic coatings) for the energy transition market and, in particular, solutions relating to green hydrogen.	ESG team is informed about new potential investment, and also performs checks for SFDR compliance Positive contribution is demonstrated through SDG alignment and taxonomy alignment. PAI data for emissions to water, biodiversity and hazardous waste is missing.	Company engagement to discuss water, biodiversity, hazardous waste and climate change. **Water** – the company is not water intensive and has a low negative impact in terms of quantitity of water used. Activities that produce pollution are treatment of metal sulfates using acids or alkaline solutions – water is neutralised and filtered before discharge. Company provides solutions for water treatment for municipal and industrial use. **Biodiversity** – Company does not identify biodiversity as material at present. It is planning to carry out a mappy exercise during 2024 to assess the extent of its impact, and will set targets and plans. **Hazardous waste** – hazardous and non-hazardous waste is reported. Increased in 2023 is linked to expansion projects of some production plants during the year. Plans to improve collection processes and the way it collects data and sets targets. **Climate change** – the company has carbon reduction targets and initiatives for climate action include a scorecard based on LCA methodology to assess product impact.	On the back of the company engagement, it is determined that there is sufficient evidence to override PAI 3, 5 and 7. This is documented within DNB AM's internal systems. Portfolio management team invests in Industrie De Nora.

Good governance

DNB's Instruction for Responsible Investments and compliance with the UN Global Compact ensures compliance with the good governance criteria. See pgs. 22–24 in the Annual Report on Responsible Investments 2023 for more information.

Corporate Sustainability Reporting Directive

Reporting on climate is transitioning and evolving. The TCFD is being succeeded by the ISSB and the Corporate Sustainability Reporting Directive (CSRD), with the IFRS Foundation taking over the monitoring of climate-related disclosures under the new IFRS S2 which will expand the disclosure on scope 3 emissions and financed emissions. These frameworks aim to further standardise and enhance climate-related financial disclosures, with the CSRD introducing regulations to a much wider audience than its predecessor, the NFRD.

The CSRD, which entered into force in January 2023, modernises and strengthens the rules concerning the social and environmental information companies must report. As many large companies gear up to report under the CSRD for the first time in 2025 on 2024 data, our ESG team has been assessing the quality and challenges with the requirements. Although quality of reporting is expected to improve over time, companies and, in turn, EU member states, may face challenges with the new reporting requirements, which add further burden to an already substantial set of obligations.

European Securities and Markets Authority guidelines

At the end of Q2 and in Q3, Europe saw significant sustainability regulatory developments. At the end of Q2, the European Securities and Markets Authority (ESMA) released guidelines on the use of ESG or sustainability-related terms in fund names, such as establishing specific exclusion criteria related to different sustainability-related terms and a minimum threshold for investments meeting environmental or social characteristics, among other requirements that aim to align mandate requirements with fund names. No DNB funds have currently changed their names as a result of the guidelines from ESMA, though DNB AM is currently reviewing its product portfolio and will make changes, if necessary, before they come into effect.

6 Active ownership

In our view, the most important tools for implementing ESG are ESG integration and active ownership through engagement and voting. This said, exclusions remain important as a last resort – see appendix section on *Exclusion criteria* for more details. Chapter 4 on *Our investment process* describes how ESG is integrated into the investment process, and within this chapter we cover our active ownership approach.

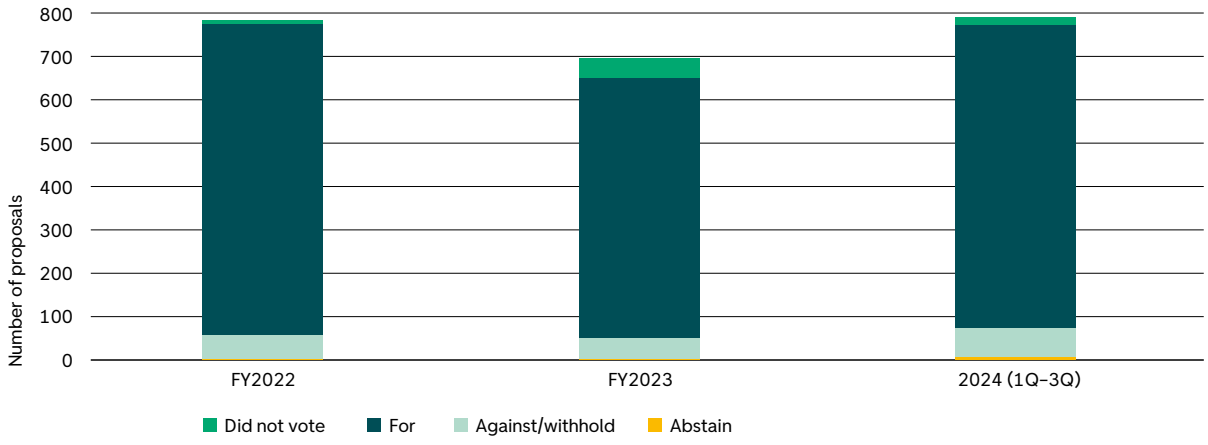
Voting

As an active owner, DNB AM exercises its voting rights as shareholders for all holdings in active portfolios and all Norwegian general meetings, as well as strategically important items and ESG-related topics. This is the case if the fund held the position at the time of the company meeting.

By the end of Q3 2024, we had voted at a total of 55 company general meetings. In 2023 we voted at 63 company general meetings, and in 2022 we voted at 62 by year end.

See the proxy voting dashboard for more detailed breakdowns and information about voting activity.

Figure 24. Number of proposals voted at during 2022 to 2024 (1Q-3Q)



Source: DNB AM and ISS Proxy Voting

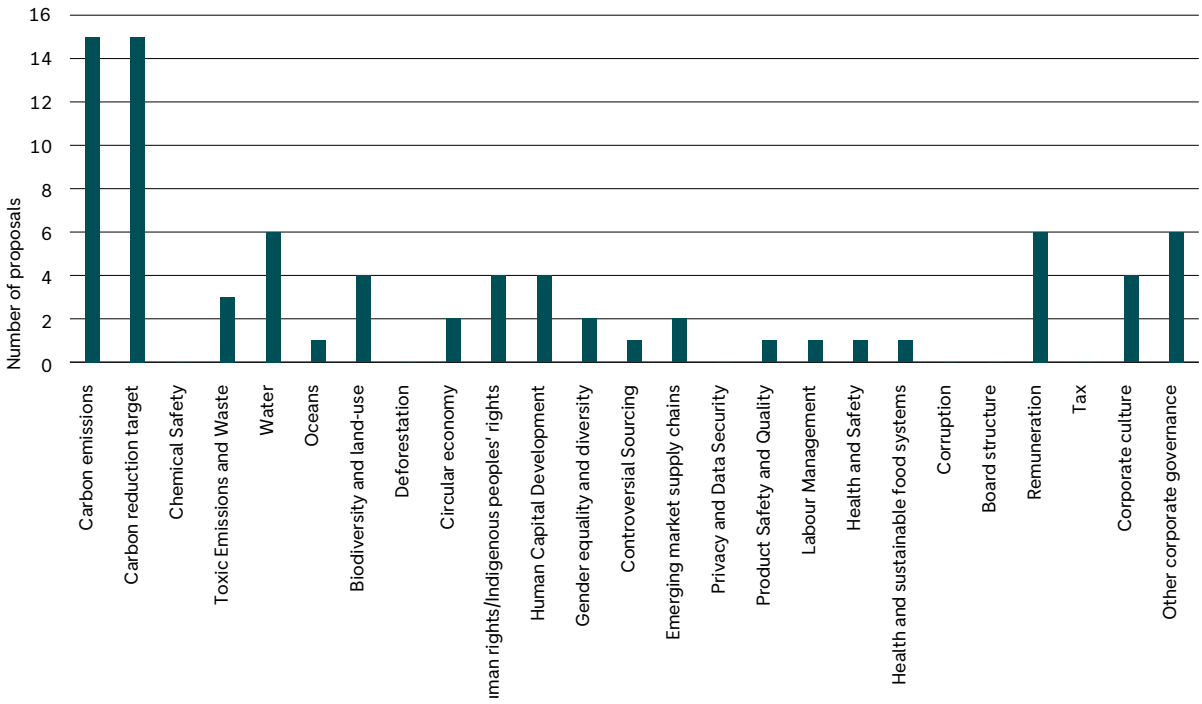
Engagements

Another key tool at our disposal as active owners is engagements with companies' management and sustainability teams. Our overarching goal is to influence companies to improve their practices, thereby securing long-term shareholder value and mitigating ESG risks in the best interest of our clients, as required as part of our fiduciary duty.

Company engagements may be conducted for several reasons. It may be to understand how companies' sustainability work drives competitive advantage, and how this may impact future earnings potential. It could also be to investigate potential ESG weaknesses highlighted in ESG scores, or to address controversies. In the case of the latter, milestones for engagement are defined and followed-up over time by our Responsible Investments team.

Dedicated ESG dialogues are conducted as a collaborative effort between the Responsible Investment team and portfolio management team. However, ESG topics are also raised in company meetings conducted solely by the portfolio management team, alongside discussions of strategy, earnings, etc. From September 2023 to September 2024, we had 26 ESG-related company engagements covering 79 topics, approximately in line with the year before. As in previous years, the focus of the meetings remains most heavily skewed towards environmental matters, as seen in Figure 25 and Figure 26.

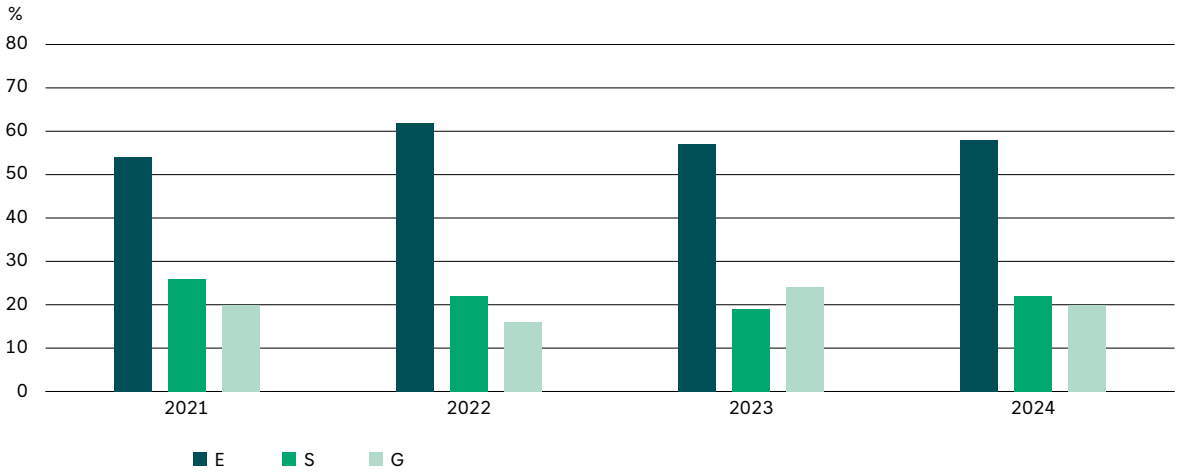
Figure 25. Number of dialogues per ESG topic between September 2023 – September 2024



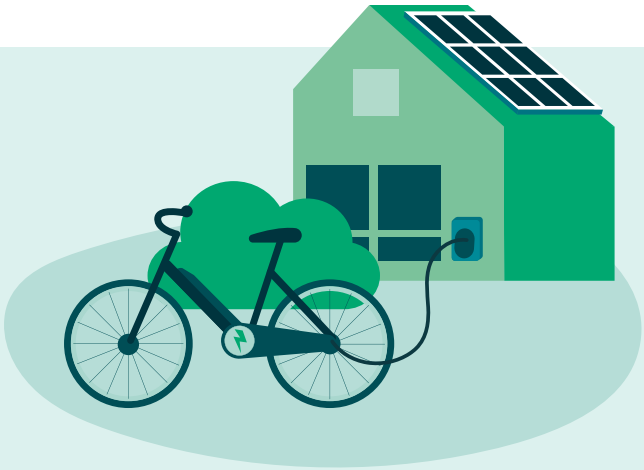
Source: DNB AM

These figures only cover direct engagement that has happened in the form of meetings with companies where DNB AM has attended. In addition to the above, additional collaborative engagements are conducted together with Sustainalytics and through investor initiatives, such as Climate Action 100+, FAIRR, and the investor engagement on forced labour risks in the solar supply chain led by Share.

Figure 26. Split of E, S and G engagements between 2021–2024



Source: DNB AM



Company engagement: Yadea Group Holdings

Yadea is the leading player in electric two-wheelers. We had an in-person meeting with the company's investor relations in April 2024. The meeting underscored that the company's focus on product development and innovation is driven by both sustainability and business objectives. Yadea outlined the various factors that must be carefully balanced in their efforts to create the most reliable electric two-wheelers, such as managing fire risk while optimising weight. Additionally, the company emphasised its commitment to localised production rather than relying on exports. Overall, the meeting has reinforced our confidence and view on the company and has played a role in our decision to increase our position between April and August 2024.

Carbon emissions/carbon reduction target/toxic emissions and waste/circular economy – The company struggles to set an emissions reductions target given that its products (bicycles, scooters, kick-bikes, etc) are already 100% electric. However, it works to reduce its footprint through innovation and targeting to offer different types of batteries to the market. For example, the lifecycle of a graphene battery is 3 years vs. lead which is 13-14 months. As graphene-based batteries take share from lead-based, this will also save emissions as fewer batteries will need to be produced. Lead-battery bikes/scooters currently use around 90% recycled lead. The company is also looking to pioneer sodium-ion batteries, as graphene currently doesn't provide high enough energy density for e-motorcycles, though it is still better than LFP. In connection with sodium-ion, a new charging solution will also need to be developed. The company is looking to develop this in house.

Product Safety and Quality/Health and safety – Lithium-ion batteries are associated with serious fire-related accidents, particularly in connection with overnight charging. Lead-acid batteries have the lowest fire risk but are heavy. The company is working on setting a science-based target and a 2035 roadmap together with a consultant and thinks this could be in place within the next few years. In the meantime, it is working to address its emissions by installing solar panels on factories, considering renewable energy sources for new factories in Indonesia and Vietnam. However, the company highlighted that it does not consume much electricity (scope 1) as its factories are for final assembly.

Gender equality and diversity – The company is taking steps to address gender equality and has recently elected two female board members.

Other corporate governance – The company works to protect minority shareholders' interests, despite the CEO and Executive Chair representing the controlling family and the board not being majority independent of management. The board/management are happy to take on board suggestions and are focused on long-term objectives, and most decisions are made by committees. The company argues that this level of control leads to more security long-term.

Company engagement: Novonesis

The merger of Novozymes (enzymes and yeast) and Chr. Hansen (microbes and cultures) make Novonesis the leading global biosolutions company. Novonesis' ingredients enable biofuel production, sustainable agriculture, cleaner labels and healthier living. The products increase functionality, boost industrial efficiency and cut waste.

We attended the company's Capital Markets Day in London in June 2024, where the company introduced its updated sustainability strategy. In addition, we had a meeting a few weeks later to discuss in more detail.

Carbon emissions/carbon reduction target – Post-merger, Novonesis has reviewed legacy Chr Hansen and Novozymes sustainability strategies/targets and have chosen to proceed with the more ambitious of the two. The company has kept Novozymes' validated SBTi and will reapply to the SBTi should it find that its baseline has changed materially as a combined company. The SBTi allows a window for companies that have merged, and Novonesis' CEO is on the SBTi's board, so it is committed to continuing to be SBTi verified. Novonesis is also undergoing a comprehensive review of its scope 3 - it has conducted 7 days workshops with different parts of the business and is approaching scope 3 with a high level of granularity. Novonesis estimates that the split of emissions between scope 3 categories was similar for Chr Hansen and Novozymes - as such, there is no material change at the new company. To deliver on its scope 1+2, its commitment to achieve 100% renewable electricity by 2025 will be important. The company estimates the combined company is >80% at the moment. RECs, guarantees of origin, PPAs, etc are all tools that are utilised to deliver on this. On questions around whether volatile energy prices may impact the company's ability to deliver on its target, Novonesis did not specifically comment on the price question, but said that it remains committed to its target. The company is also very interested in demonstrating the positive benefits of its solutions. Both companies have previously reported avoided emissions - Novozymes at company-level and then at biofuels-level, and Chr Hansen had piloted this work for three products and had had plans to roll this out to more products. The company seems committed to continue to calculate avoided emissions moving forward.

Commitment to engage on science-based net zero target setting

Though the portfolio specifically invests in companies that demonstrate a solid ability to reduce or avoid emissions for their customers or their customer's customers, we strongly believe that these companies should also be addressing their own operational and supply chain emissions. The Science-based Targets Initiative (SBTi) considers a model where "[sources] of emissions unbated for every volume of emissions avoided [are] not compatible with the global goal of reaching net-zero emissions at the global level". In the absence of a strong carbon mitigation strategy, companies' activities will continue to lead to increased level of GHG emissions in the atmosphere. Such companies therefore remain exposed to transition risk. We also believe that companies striving for leadership in this area will be able to tap into this as an additional source of competitive moat over time.

2024 shake-up at the SBTi: carbon credits in the spotlight amid gaps in scope 3 emission reduction targets

- In April, the Board of Trustees announced forthcoming updates to the SBTi's net zero standard and proposed to allow the use of Environmental Attribute Certificates (EACs), including carbon credits, towards scope 3 abatement. The announcement came as companies are falling over 1 gigaton short of their current annual scope 3 emission reduction targets, with the gap threatening to grow to over 7 GtCO2 by 2030.
- This move signalled an openness to expanding the use of carbon credits for scope 3 abatement, catalysing a staff revolt, as employees argued that the approach was not backed by science.
- This led the organisation to release a clarifying statement saying that no changes had been made and the use of offsets would be informed by science.
- In the technical publications released in July 2024, the SBTi specifies that carbon credits may be used in science-based target-setting contexts but should not be used to offset emissions – "the priority remains the direct decarbonisation of the value chain. Credits cannot be used as a substitute for this".
- Its research found that various types of carbon credits fail to achieve their intended mitigation outcomes effectively, but that further investigation is needed to make a final decision on the use of carbon credits to reduce scope 3 emissions. We will continue to follow developments in this space.

We committed to engaging with 80% of the portfolio (by weight) on science-based net zero targets starting in 2022. This engagement has included both companies that have already set net-zero targets, and those which are yet to set a target. The need for this commitment came from a realisation that many companies are now setting net zero targets, but it is necessary to investigate how these are set to determine the quality and credibility of the target setting. We also saw a need to collect standardised data, to ease comparison between companies and over time. In 2024, we continue to deliver on our commitment to engage with at least 80% of the portfolio on science-based net zero target setting. By the end September 2024, we had engaged with 95.5% of the portfolio, and we will ensure that we remain well above our 80% commitment for the remainder of the year.

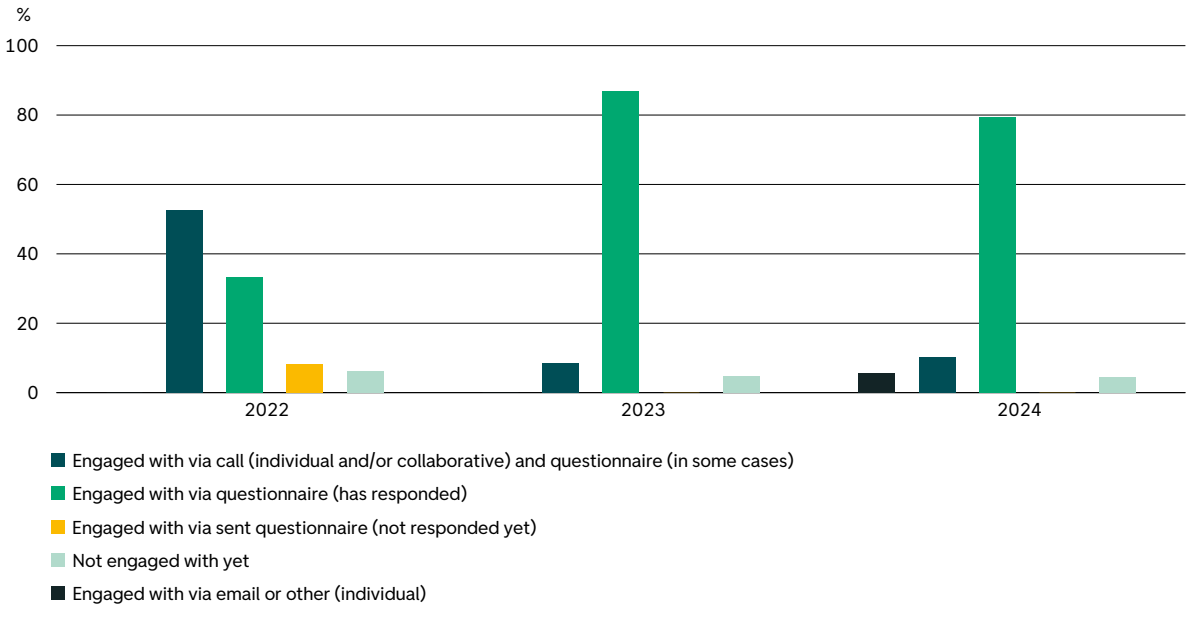
The way in which we have engaged with companies on net zero target setting has also developed over the last few years, with the 2023 and 2024 assessments relying more heavily on the utilisation of our questionnaire than 2022. We view this as a helpful tool to scale this work, given that meetings are not always necessary if companies are already considered in best in class.

Figure 27. Status of engagement on net zero science-based target setting as at 30.09.2024

- Engaged with via email or other (individual) — 5.7 %
- Engaged with via call (individual and/or collaborative) and questionnaire (in some cases) — 10.3 %
- Engaged with via questionnaire (has responded) — 79.5 %
- Engaged with via sent questionnaire (not responded yet) — 0 %
- Not engaged with yet — 4.5 %

Source: DNB AM

Figure 28. Type of engagement on net zero science-based target setting between 2022–2024



In association with this commitment, we worked closely with DNB AM's Responsible Investment team in 2022 to develop a framework (see Figure 29) for assessing the quality of net zero targets. The framework was developed based on Climate Action 100+'s (CA 100+) framework (to which DNB AM is a member), and inputs from other sources including the CDP, TCFD, and the SBTi. We see that our approach is also well-aligned with sell-side frameworks.

In October 2023, the DNB Group launched its transition plan. In this, DNB AM has set targets for share of Assets Under Management covered by science-based targets. As part of the approach DNB AM will engage the highest-emitting companies on their emission reduction targets. For more information, see pgs. 42–47 of the strategy. Our work on engaging with companies on net zero target setting was initiated before the strategy was set and aligns well with its goals.

Figure 29. Framework for understanding and tracking carbon reduction targets

The framework places emphasis on momentum/progress, and the output is a heat map.

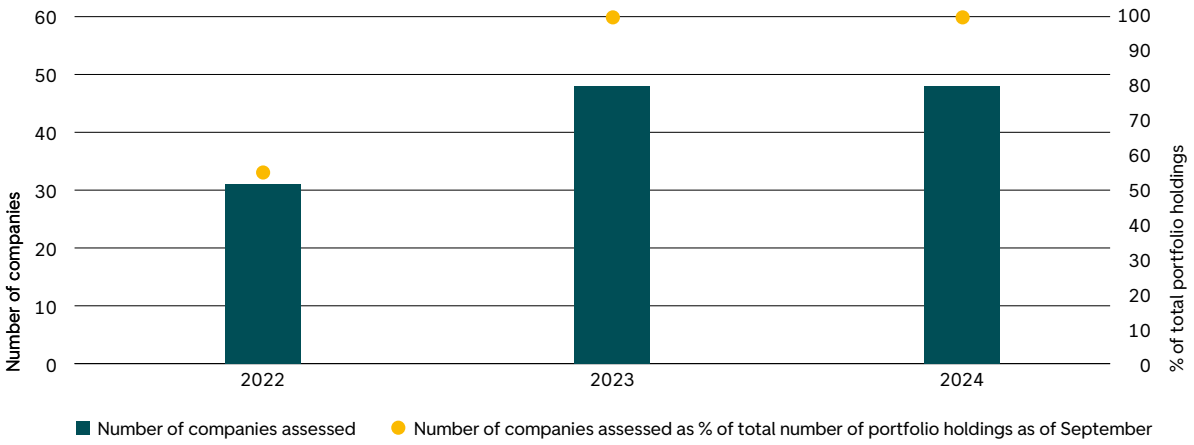
Figure 30. Heatmap of status of net zero target setting

* Arcadium Lithium is an average of Allkem and Livent's results and the results are therefore not broken down by metric

* Arcadium Lithium is an average of Allkem and Livent's results and the results are therefore not broken down by metric

The heatmap is a reflection of the information that has been provided by companies directly through the questionnaire, and the assessment of this information by DNB AM. Compared to last year, coverage in terms of number of companies has remained relatively stable in both 2024 and 2023, up from 2022.

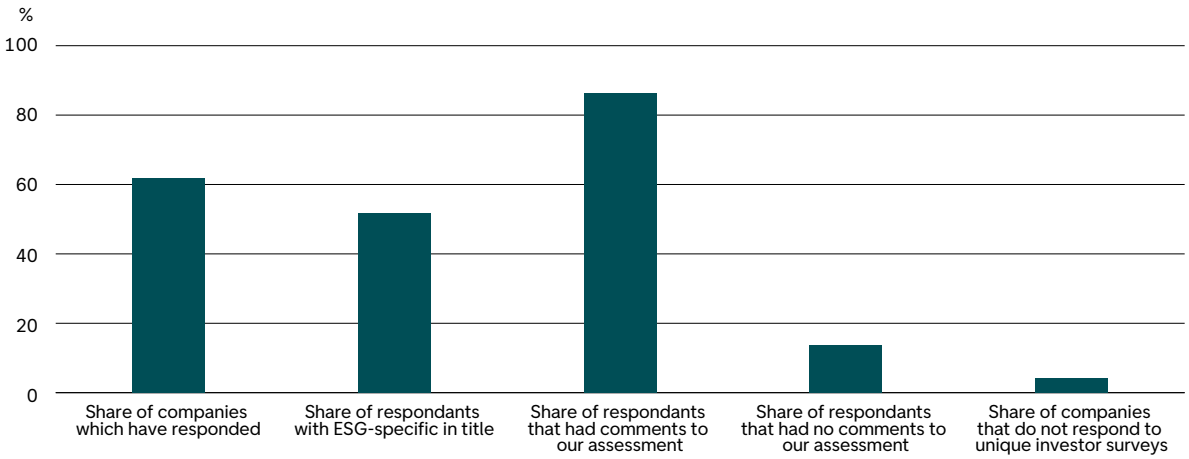
Figure 31. Number of companies assessed using net zero framework between 2022–2024



Engagements continue to be prioritised based on size of holding, carbon intensity, environmental pillar score and/or Portfolio Managers' view of a company's sustainability practices (see pgs. 35–36 of our 2021 report for more information on this process).

As in last year's analysis, all companies were analysed prior to reaching out to the companies – this meant that all companies received a pre-filled questionnaire and had the opportunity to get back to us to highlight any potential misunderstandings. In our experience, pre-filling questionnaires helps to lower the threshold for companies to respond. We believe this is reflected in the graph below, where a relatively high number of companies responded to our request (see Figure 32). All assessments have been quality checked for consistency in approach/treatment, and to ensure that claims are sufficiently evidenced. If there were any uncertainties, the company is either immediately flagged for follow-up or flagged for future follow-up. Note that these results should not be taken at face value, as they should be considered together with information obtained through other active ownership activity, such as company engagements.

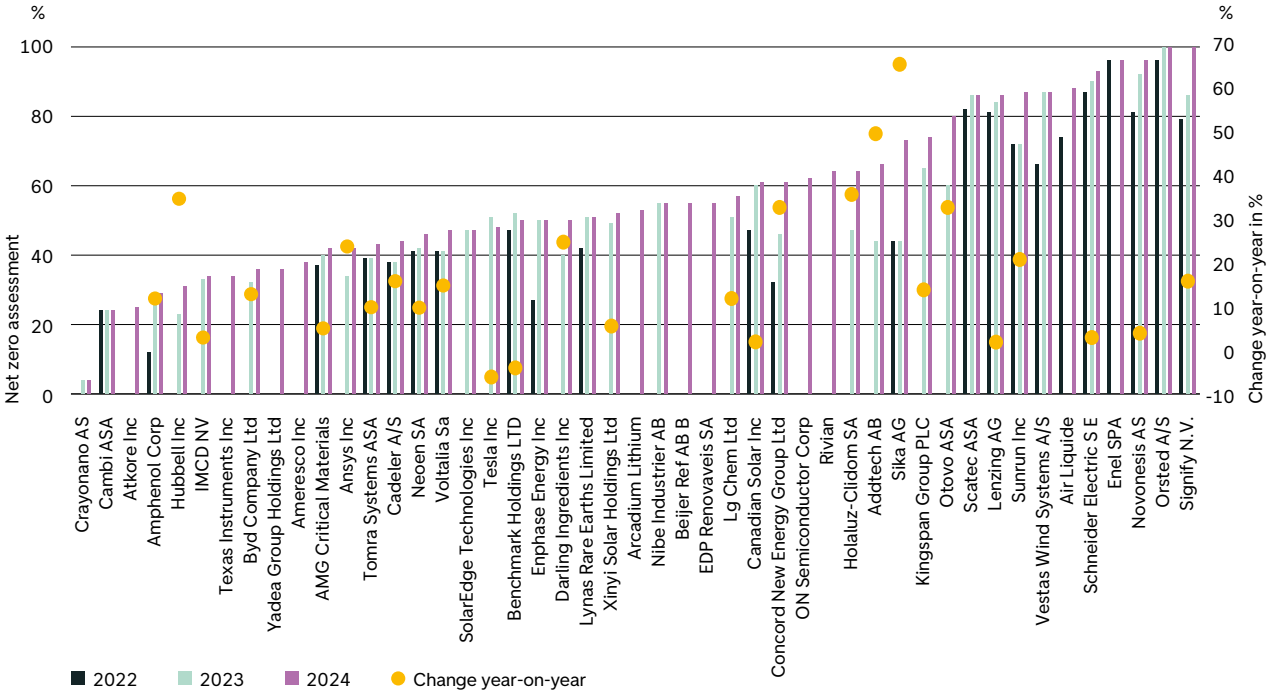
Figure 32. Response statistics summary for net zero questionnaires in 2024



As a reminder, the framework's output is not intended to be a score – our focus is on momentum. However, in colour-coding the heatmap, we assign number codes to the responses. These numbers can then be used to quantify momentum by showing percentages in terms of "completeness" against our framework from 0-100%, and to perform some analysis. In practice, this means that all questions are equally weighted when assessing momentum in the above. Furthermore, note that our approach has in some cases evolved over time and will continue to do so. Some of the results below may also differ compared to last year – this may be due to new information being discovered that should have been captured in last year's assessment, or a change in approach in assessing certain factors.

Company scores have developed as shown in Figure 33. over the past three years.

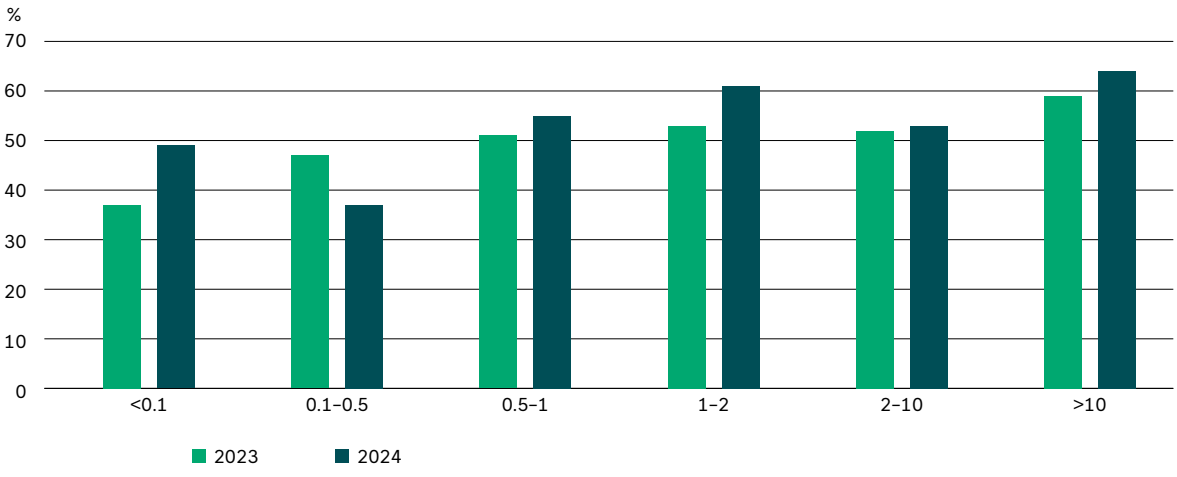
Figure 33. Net zero assessments between 2022-2024 and percentage change between 2023 and 2024



The average change in net zero assessment between 2022–2023 was 17%, whereas between 2023–2024 this figure has dropped to 12%. We do not believe that this drop is a cause for concern, given there have been a few mergers in the portfolio (Allkem and Livent are now Arcadium Lithium, and Novozymes and Chr Hansen are now Novonesis), where sustainability reporting and target setting may not be fully developed yet. If we compare 2024 to 2022, the average change is 27%. This indicates positive momentum in the three years of assessing portfolio companies' net zero targets.

Looking at results by market cap, is it clear that large cap bias is visible in our assessments, as shown in Figure 34. This speaks to the resource burden that setting and managing net zero targets incurs generally, particularly for small companies with limited resources.

Figure 34. Split of 2023 and 2024 net zero assessments by market capitalisation

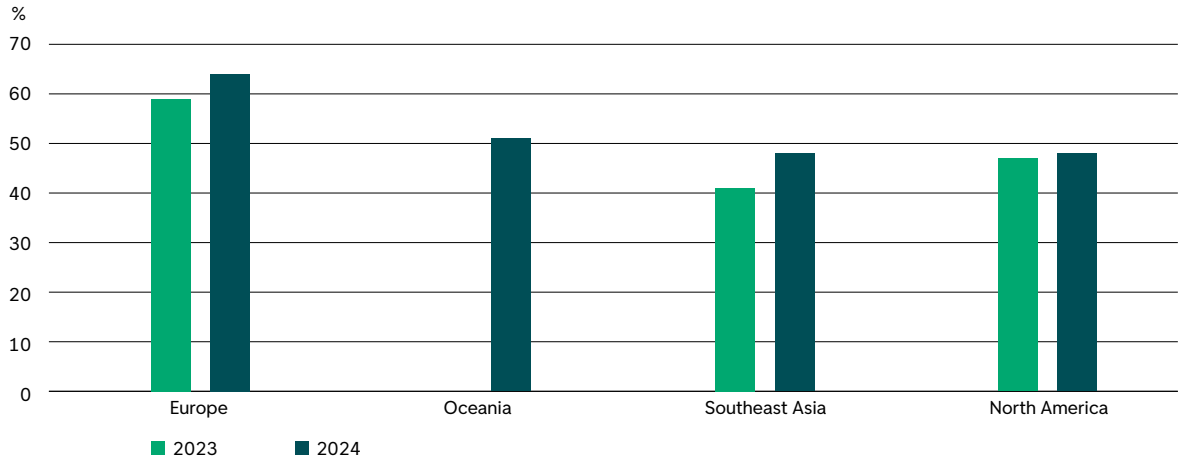


Source: DNB AM

As in last year's assessment, we also see that European companies are leading the way in terms of their work on net zero. This is not surprising given the strong regulatory push in Europe – EU Taxonomy, the SFDR, the CSRD, etc.

In the US, however, we have seen a strong anti-ESG/anti-woke sentiment over the last few years, despite historic regulatory support through the IRA.

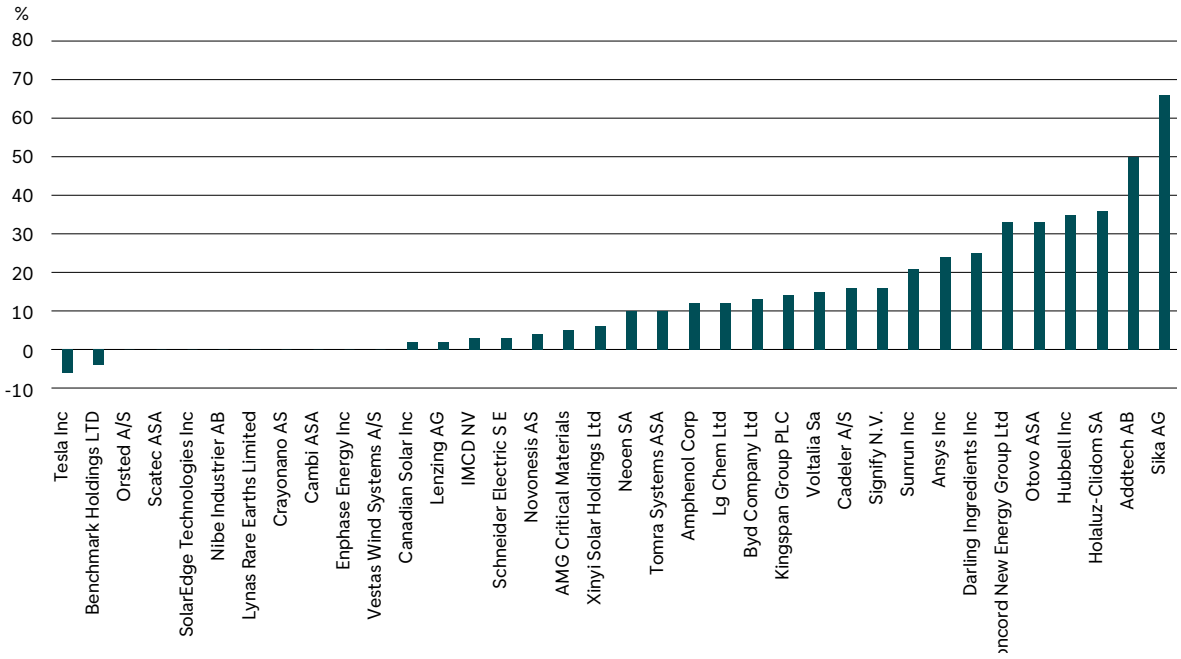
Figure 35. Split of 2023 and 2024 net zero assessments by region



Source: DNB AM

We also observe that better performance on the net zero assessment tends to be associated with higher emissions. This may indicate that higher-emitting sectors and companies tend to have better targets, strategy and reporting of how they plan to address these emissions. Comparing company results 2024 vs. 2023, we observe the following:

Figure 36. Percentage change in net zero assessment compared to last year by company



Source: DNB AM

In the above, 6% of companies show negative development, 25% show neutral development, and 69% show positive development year-on-year. In terms of positive momentum, this is in line with last year, where 70% of companies demonstrated some form of positive momentum. We discuss company-specific cases in more detail below.

Companies showing negative development

Two companies show negative development – Tesla and Benchmark Holdings.

For Tesla, the driver of this change is that we can no longer find any evidence of an emission reduction target. Last year, the company responded to our request and included information that it has a target to deliver a 30% reduction in GHG operational emissions per vehicle year-on-year. However, there was no information on baseline or target year available. In this year's assessment, we no longer find evidence of such as target within its Impact Report 2023. Instead, the company references a plan to achieve "net zero GHG emissions as soon as possible". We do not view this as a credible target. Note, however, that Tesla did not respond to our request this year, and there may be information we have missed in our assessment despite our best efforts to find all relevant information.

Tesla

	2023	2024
Targets		
– Emission reduction target		
– Reduction target in line with science		
– Net zero target covering scope 1 & 2		
– Net zero target covering material scope 3		
– Long-term target (between 2036-2050)		
– Long-term target aligned with science		
– Medium-term target (between 2026 and 2035)		
– Medium-term target aligned with science		
– Short-term target (up to 2025)		
– Short-term target aligned with science		
– Unabated emissions		
– Carbon offsets		
– Nature-based solutions		
Strategy		
– Decarbonisation strategy		
– Commitment to green revenues		
– Avoided emissions		
– Decarbonisation of future capex		
– Methodology for alignment future capex		
– Public commitment to the goals		
Governance		
– Review of its trade associations lobby		
– Board oversight of climate change?		
– Remuneration linked to climate		
– Just transition		
Reporting		
– TCFD reporting		
– Climate-scenario testing		

Benchmark Holdings

	2022	2023	2024
Targets			
– Emission reduction target			
– Reduction target in line with science			
– Net zero target covering scope 1 & 2			
– Net zero target covering material scope 3			
– Long-term target (between 2036-2050)			
– Long-term target aligned with science			
– Medium-term target (between 2026 and 2035)			
– Medium-term target aligned with science			
– Short-term target (up to 2025)			
– Short-term target aligned with science			
– Unabated emissions			
– Carbon offsets			
– Nature-based solutions			
Strategy			
– Decarbonisation strategy			
– Commitment to green revenues			
– Avoided emissions			
– Decarbonisation of future capex			
– Methodology for alignment future capex			
– Public commitment to the goals			
Governance			
– Review of its trade associations lobby			
– Board oversight of climate change?			
– Remuneration linked to climate			
– Just transition			
Reporting			
– TCFD reporting			
– Climate-scenario testing			

For Benchmark Holdings, the reduction year-on-year is the result of a technicality in our framework. In previous years, the company has responded that it intends to set a short-term target within the next 1-2 years. This year, we no longer give "credit" for this in our assessment, given that we have previously defined short-term as "up to 2025" and now consider it too late for companies to set a target to 2025. Before next year's assessment, we will need to define a new definition of "short term".

Companies showing neutral development

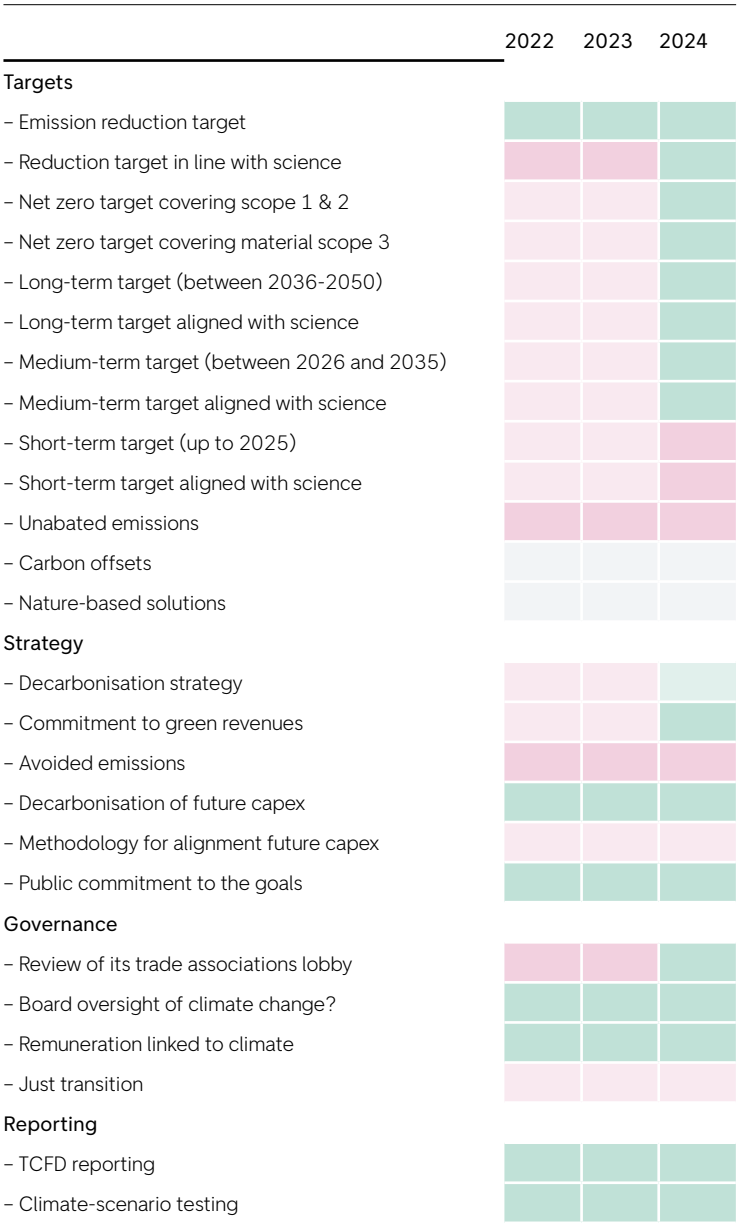
Companies showing no momentum Y/Y are Cambi, Crayonano, Enphase Energy, Lynas Rare Earths, Nibe Industrier, Ørsted, Scatec, SolarEdge Technologies and Vestas Wind Systems. Of these, Cambi is the only company that also showed no momentum last year, though it is worth mentioning that some of these companies were not assessed in previous years. The company's lack of momentum is likely primarily explained by it being a small cap company, with 0.2USDbn market capitalisation as of 08.10.2024. It is a well-known phenomenon that smaller companies have fewer resources and are therefore less likely to allocate resources to sustainability reporting, again as highlighted in Figure 34. This is also the case for Crayonano (market capitalisation as of 08.10.2024 was 0.004USDbn). When it comes to Enphase Energy and Lynas Rare Earths – these companies demonstrated noteworthy year-on-year improvement last year – 85% and 21% respectively. We can therefore not expect the same rate of change this year. Ørsted and Scatec can both be considered leaders, with 100% and 86% net zero assessments in 2023 and 2024 respectively – as such, we expect slower momentum as these are already high-performing. Finally, SolarEdge Technologies and Nibe Industrier show no momentum year-on-year and do not have particularly high assessments – 47% and 55% respectively. These companies should therefore be monitored over time, as we expect continuous improvement and positive momentum from all portfolio companies.

Companies showing positive development

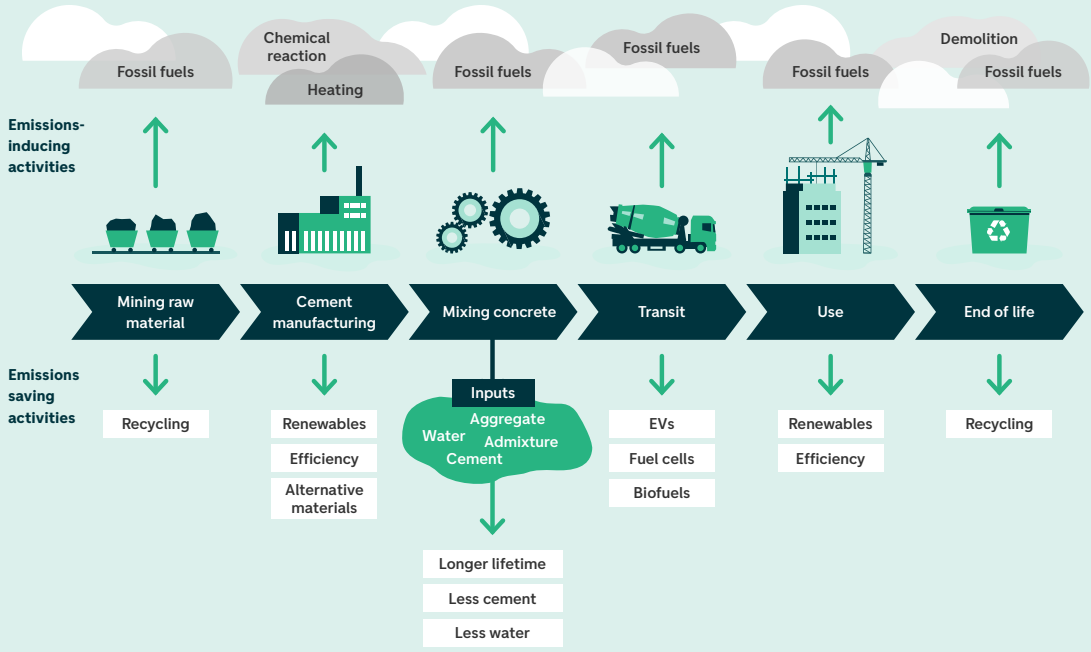
The majority of companies are demonstrating positive momentum year-on-year. In most cases, this is because these companies have now set net zero targets. We are also seeing that European companies are reporting in line with EU Taxonomy – this gives confidence to the parts of the assessment that focus on green revenues and green capex using a robust methodology. Below we discuss the three companies showing greatest overall improvement.

Sika is a speciality chemicals company delivering products with application in the building sector and automotive industry. Concrete admixture is amongst the products it delivers – this helps to strengthen concrete, requiring fewer inputs such as water and raw materials. The main driver behind the improvement in our assessment of Sika is that the SBTi has approved its net zero target in 2024. The company is targeting net zero by 2050 driven by a 90% reduction in absolute scope 1, 2 and 3 emissions. The target boundary includes land-related emissions and removals from bioenergy feedstocks. It also has a medium-term target to reduce absolute scope 1 and 2 emissions by 50.4% by 3032, and absolute scope 3 emissions by 30% within the same timeframe. Sika has published a roadmap outlining key levers to deliver on its carbon reduction targets. n its CDP reporting, we also find evidence of evaluations on whether the trade associations it is a member of are aligned with the goals of the Paris Agreement.

Sika



Company engagement with Sika



We had a meeting with the company's investor relations and sustainability team in June 2024.

Carbon emissions/carbon reduction target – 98% of the company's emissions are scope 3, of which around half of scope 3 comes from purchased goods and services. The company is therefore highly dependent on how fast suppliers are working to reduce their own emissions, and how quickly Sika is able to adapt its formulations. Sika is working with its suppliers - an important aspect of this work will be measures to improve suppliers' data collection and reporting, given that 50% of its scope 3 data is now based on estimations. Sika's supplier base is heterogenous – some are large and have their own SBTi targets, others are small and local and may not have enough resources to go through a transformation themselves. Sika has 18,000 suppliers and does not provide information about what share of suppliers/spend/emissions their supplier engagement will address. However, it will start with tier 1 suppliers and cover the largest procurement volumes first. It has not defined how supplier progress will be rewarded/incentivised (ie. contractual terms, etc), but believes in rewarding rather than punishing schemes. However, price, availability and CO_2 are important considerations. Sika uses the WBCSD product sustainability assessment to make sure its business model is aligned. This covers both sustainability and performance. This is a useful tool for sales people, and underlying metrics/themes are weighted differently dependent on end customer. For example, architects are specifiers, not paying customers - they are concerned with decarbonisation and building to certain environmental building standards, so project CO_2 footprint is important. However, for applicators, this is not a concern unless given by regulation. Health and safety is more important to this customer group, as well as speed of application.

General/other governance – the company recently published its new sustainability strategy, strategy 2028. Two important features of the new strategy is that the company has committed to the SBTi and its net zero target has been verified. It has also included further ESG targets in its compensation structure. 20% of LTI is linked to ESG, whereof 10% is related to GHGs, 5% to waste and 5% to water. The 10% linked to GHGs only includes scope 1+2 for the time being and performance on this metric is averaged three years rolling. DNBAM would like to see scope 3 included over time given that scope 3 represents the largest share of emissions.

Addtech

	2023	2024
Targets		
– Emission reduction target		
– Reduction target in line with science		
– Net zero target covering scope 1 & 2		
– Net zero target covering material scope 3		
– Long-term target (between 2036–2050)		
– Long-term target aligned with science		
– Medium-term target (between 2026 and 2035)		
– Medium-term target aligned with science		
– Short-term target (up to 2025)		
– Short-term target aligned with science		
– Unabated emissions		
– Carbon offsets		
– Nature-based solutions		
Strategy		
– Decarbonisation strategy		
– Commitment to green revenues		
– Avoided emissions		
– Decarbonisation of future capex		
– Methodology for alignment future capex		
– Public commitment to the goals		
Governance		
– Review of its trade associations lobby		
– Board oversight of climate change?		
– Remuneration linked to climate		
– Just transition		
Reporting		
– TCFD reporting		
– Climate-scenario testing		

Addtech is a Swedish technology company offering technical solutions and products for companies in the manufacturing and infrastructure sectors. It adds value by helping customers to produce their goods more efficiently and helping them to make their products more competitive. Again, the positive momentum is driven by the SBTi's approval of the company's net zero target in 2024. The company commits to deliver net zero by 2050 – this will be delivered by reducing absolute scope 1 and 2 emissions by 95% by 2050 from a 2022 base year and reducing absolute scope 3 emissions by 90%. Near term, it will reduce absolute scope 1 and 2 emissions 50% by 2030 from a 2022 base year. It further commits that 30% of its suppliers by spend covering purchased goods and services will have science-based targets by 2028. In addition, it has also received "credit" for having targets related to increasing revenues contributing to sustainable development – this is captured both by the green revenues and future capex metrics.

Holaluz-Clidom

	2023	2024
Targets		
– Emission reduction target		
– Reduction target in line with science		
– Net zero target covering scope 1 & 2		
– Net zero target covering material scope 3		
– Long-term target (between 2036–2050)		
– Long-term target aligned with science		
– Medium-term target (between 2026 and 2035)		
– Medium-term target aligned with science		
– Short-term target (up to 2025)		
– Short-term target aligned with science		
– Unabated emissions		
– Carbon offsets		
– Nature-based solutions		
Strategy		
– Decarbonisation strategy		
– Commitment to green revenues		
– Avoided emissions		
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– Methodology for alignment future capex		
– Public commitment to the goals		
Governance		
– Review of its trade associations lobby		
– Board oversight of climate change?		
– Remuneration linked to climate		
– Just transition		
Reporting		
– TCFD reporting		
– Climate-scenario testing		

Holaluz-Clidom is a Spanish player in distributed rooftop solar. It committed to set a target with the SBTi in 2022, but our assessment is that there is not yet enough information available to consider the company as having a net zero target. However, in its 2023 reporting, we see that the company has now set a medium-term target. It plans to reduce scope 1 and 2 emissions by 42% by 2030. Holaluz will also reduce natural gas commercialisation by 99%, emissions on commercialisation of electricity by 51.6%, and other indirect emissions, mainly solar equipment, on 42% (all scope 3) within the same timeframe. Moreover, it has reported in line with the TCFD for the first time, and conducted scenario analysis, though the impacts have not been quantified in EUR terms.

Carbon reduction targets explained

- **Science-based targets:** targets that are aligned with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2C above pre-industrial levels and pursuing efforts to limit warming to 1.5C. Companies that have a target approved by the Science-based Target Initiative (SBTi) have targets that have been validated by SBTi's technical experts. Those who have signed a commitment letter are recognised as "committed" and have two years to submit their target and have it validated and published by the SBTi.

- **Carbon neutral:** Carbon neutral refers to a policy of not increasing carbon emissions and achieving a carbon reduction of remaining emissions through offsets.

- **Climate neutral:** Same as the above, except all greenhouse gases are addressed, not just carbon dioxide.

- **Net-zero:** The IPCC estimates that limiting global warming to 1.5C above pre-industrial levels by 2100 will require a halving of global emissions by 2030 and reaching net-zero by 2050. By net-zero, the IPCC means that remaining emissions in 2050 would need to be balanced by removing CO_2 from the air. Companies may contribute to this by either reducing the energy intensity of their operations, or by sequestering carbon from the atmosphere, or by combing both approaches. Net zero targets focus on decarbonising as much as possible and business transformation. Unabated emissions will not be offset, rather, residual emissions will be removed (i.e., CCS or other).

Sources: How it works – Science Based Targets, FAQs – Science Based Targets, foundations-for-net-zero-full-paper.pdf (sciencebasedtargets.org)

Developing a framework for biodiversity

Biodiversity describes the variety of all life on earth, including plants, bacteria, animals, and humans - and their interaction within ecosystems. Unfortunately, due to human interference and climate change, nature is threatened. Climate change and loss of biodiversity are closely interconnected, as nature absorbs large amounts of greenhouse gases and mitigates the harmful effects of climate change. Promoting biodiversity is therefore an important part of the solution to the climate challenges we face, and relevant for the DNB Renewable Energy fund to consider when looking for companies that are sustainable enablers or a better environment.

However, investors and companies have found biodiversity challenging to address given the local nature of biodiversity challenges, a lack of good data/metrics, no broadly accepted assessment tools, and no globally accepted reporting standards. Initiatives such as the Taskforce on Nature-related Financial Disclosures (TNFD) and the Science-based Targets Network (SBTN) will be key to guiding companies and financial institutions to identify their environmental risks and opportunities. In addition to being a supporter of the TNFD, DNB AM has also signed the Finance for Biodiversity Pledge, joined the UNEP FI Sustainable Blue Economy Initiative, and the DNB Group became a partner of the Partnership for Biodiversity Accounting Financials (PBAF) in 2022. For more information about DNB AM works with biodiversity more broadly, see pages 59-63 of the Annual Report on Responsible Investments 2022.

In 2023, we worked closely with DNB AM's Responsible Investment team to develop a framework to assess the status of companies' biodiversity efforts. We see this framework as complementary to our net zero framework, given the interconnectedness of these issues. The biodiversity framework builds on recognised frameworks, such as the TNFD's LEAP framework, as well as DNB AM's expectations document on biodiversity. It seeks to identify risks and opportunities, how companies plan to report, and, ideally, collect asset level data. The latter is an important hurdle to gaining a better understanding of companies' exposures and dependencies on biodiversity, given the local nature of biodiversity. However, asset level data is not widely reported by companies today. Through this framework, we seek to collect qualitative and quantitative data, better understand the status of efforts on biodiversity, and have a better dialogue on the topic. We believe our approach will develop over time, and our expectations are low to begin with given the challenges. Last year, we expected to begin to test our framework with a few companies in 2024. However, this has not been prioritised yet.

Figure 37. Framework for understanding and tracking companies' work on biodiversity

Locations	– Locations interfacing with ecosystems of low integrity, high biodiversity importance and/or areas of water stress
Evaluate (dependencies and impact)	– Business processes and activities at priority locations – Dependency on ecosystems at priority locations – Company impacts on nature at priority locations – Incidents/media controversy
Assess	– Risks/opportunities and materiality
Respond and react	– Strategy, risk management, resource allocation – Governance – Biodiversity policy – Environmental impact assessments – Supplier code of conduct – Key targets and KPIs – Supply chain – Nature restoration – Green capex – Targets for circularity – Reporting and TNFD

In the meantime, biodiversity continues to be addressed qualitatively in company engagements where company research indicates that the topic is material and should be addressed. Expectations documents are the starting point for engagement. As part of DNB AM, the fund is also involved in a three-year engagement programme on deforestation linked to soft commodities, joined Nature Action 100+, and participates in collaborative engagements through FAIRR on sustainable proteins, meat sourcing, sustainable aquaculture and biodiversity loss from waste and pollution. Quantitatively, biodiversity is currently understood and managed using PAI 7 on activities negatively affecting biodiversity-sensitive areas. Though data on this remains patchy, our observation is that coverage and quality is increasing. We aim to increase metrics and reporting on biodiversity as data quality and availability improves.

Company engagement: Tomra

Tomra is a Norwegian company specialising in sensor-based solutions for resource efficiency and sustainability. It provides advanced systems for sorting and recycling, including reverse vending machines for deposit-return schemes, and equipment for industries such as food, mining and recycling. Tomra's solutions help optimise the use of resources, reduce waste and promote a circular economy by enabling efficient recovery, sorting and reuse of materials.

Over the past few years, we have had multiple meetings with Tomra's CEO and sustainability team. In March of 2024, we discussed the following:

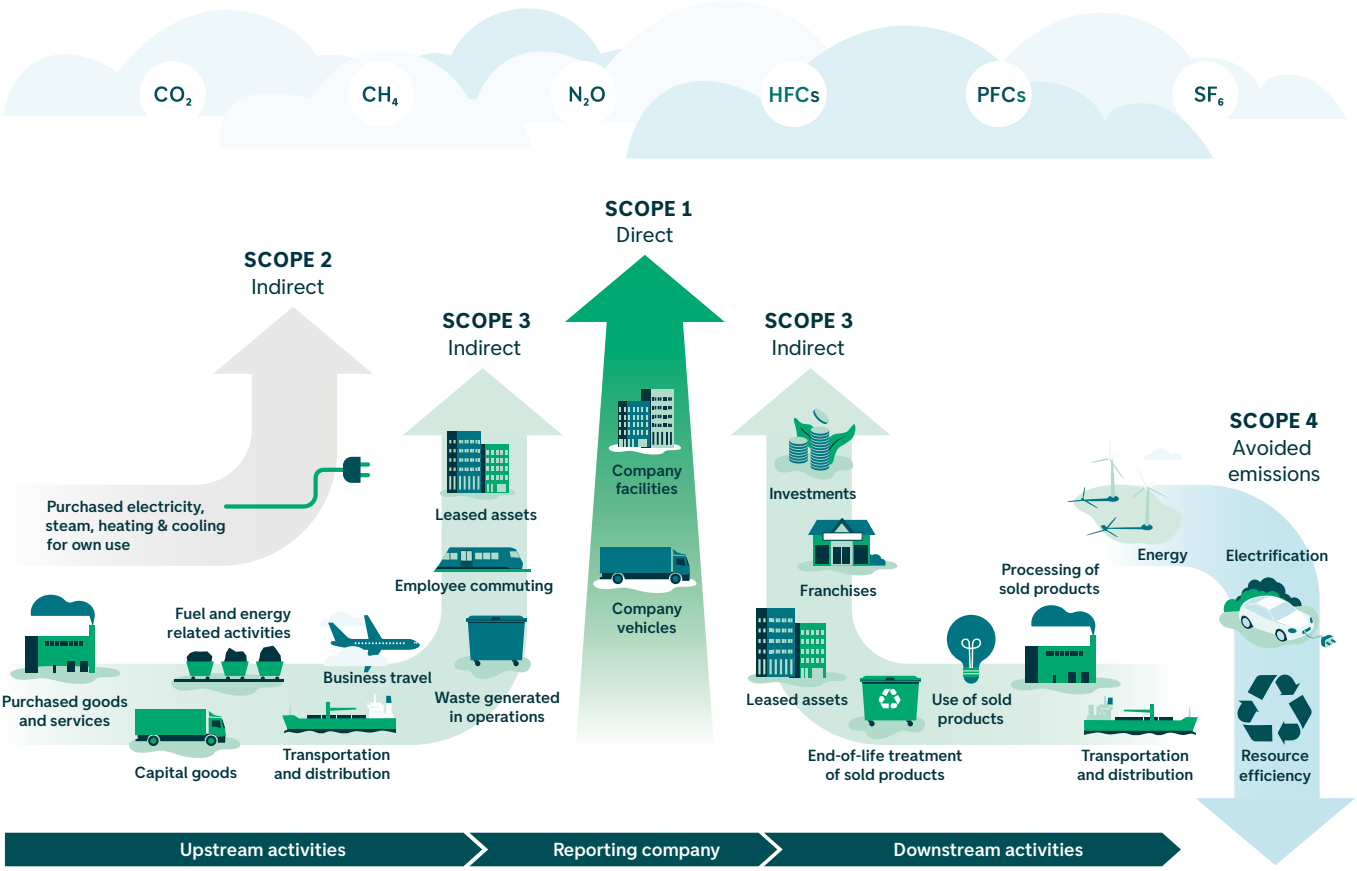
Carbon emissions/carbon reduction target – Tomra is advancing its climate efforts, with targets submitted to the SBTi for approval and a decarbonisation roadmap under development. DNB AM has urged the company to adopt a transparent 'waterfall' type chart for reporting regarding the source of emissions reductions, which Tomra will implement post-SBTi confirmation. They have refined their methodology for calculating avoided emissions, now detailed in their annual report. In 2023, Tomra's overall GHG footprint increased due to improved data capture, increased business travel emissions, and company growth. A full scope 3 inventory has been completed to support science-based target submissions to the SBTi.

Biodiversity – following a double materiality and gap analysis, Tomra now considers biodiversity partially material, driven by ESRS. The company is mapping its impact and aligning ambitions with best practices like TNFD and SBTN. As encouraged by DNB AM, the company will include the supply chain.

Human Capital – Tomra aims for 50% female representation in new hires but achieved 28% in 2023, up from 27% in 2022. Employee engagement survey participation dropped from 90% to 79%, with a slight decline in engagement scores, attributed to challenges like a cyber-attack and restructuring. DNB AM recommended more frequent surveys and detailed wage gap reporting, which Tomra plans to update in line with BUFDIR on ARP recommendations.

7 Key findings of potential avoided emissions analysis

Figure 38. Greenhouse gas emissions across the value chain



- **SCOPE 1:** All direct GHG emissions.
- **SCOPE 2:** Indirect GHG emissions from consumption of purchased electricity or steam.
- **SCOPE 3:** GHG emissions relating to up- and downstream activities in the value chain of the company's product/service.
- **SCOPE 4:** Emissions that would have been released if a particular action or intervention had not taken place (can appear throughout third parties' value chains depending on the type of product or service offered and how this product or service affects operations)

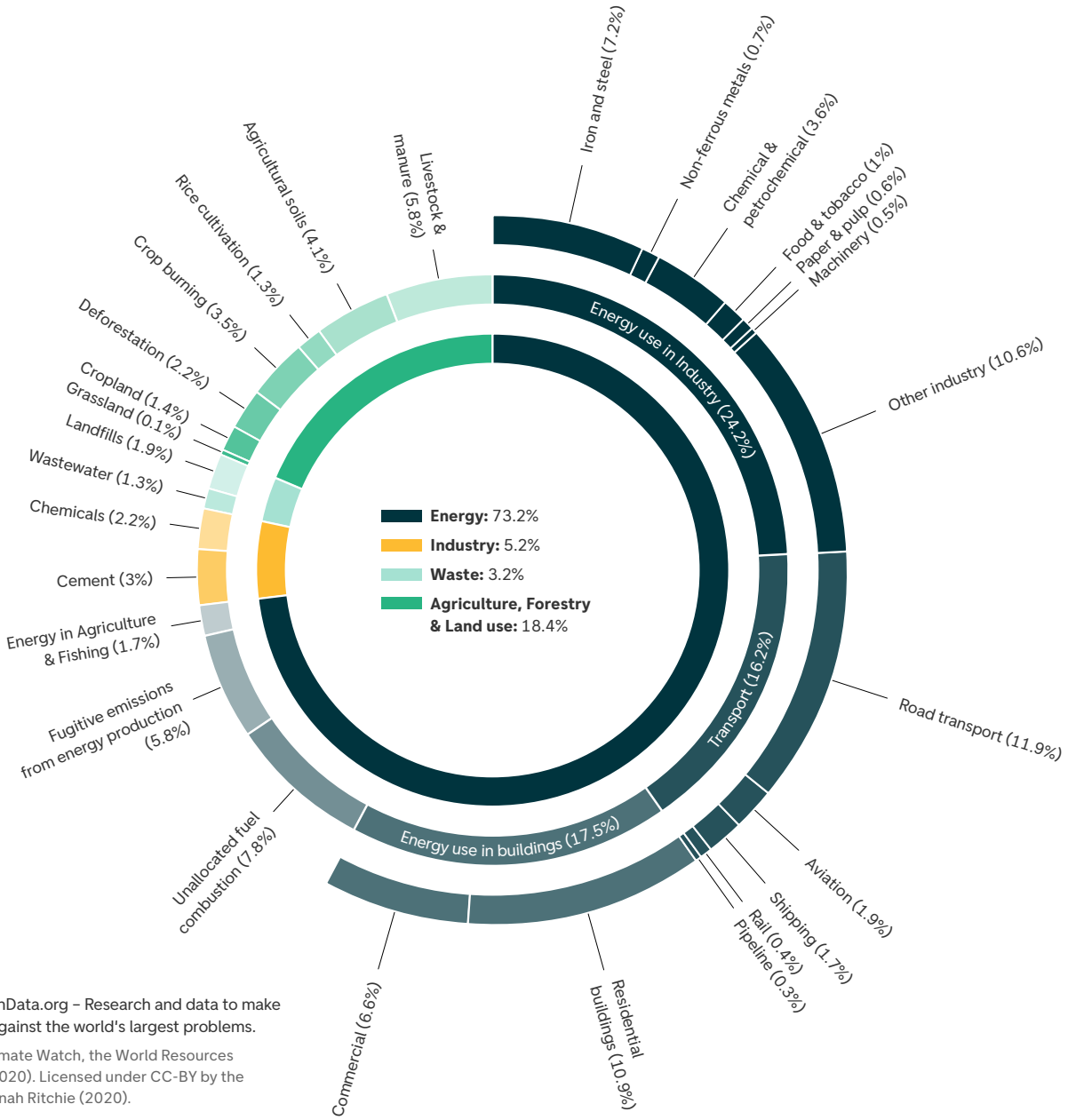
Source: GHG Protocol, Lazard

Carbon footprint versus avoided emissions

Carbon footprint, also called carbon intensity, is the measurement of a company's greenhouse gas emissions relative to a company's turnover and is one of several factors that says something about a company's climate risk and impact. Companies and investors use carbon footprint to help identify and address carbon-related risks.

Considering the contribution from various sectors to global GHG emissions may be a useful starting point for identifying how to prioritise emissions reductions.

Figure 39. Global greenhouse gas emissions by sector



OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Climate Watch, the World Resources Institute (2020). Licensed under CC-BY by the author Hannah Ritchie (2020).

Carbon footprint analysis considers a company's direct and indirect emissions to produce its product(s) and/or service(s). The GHG Protocol defines these emissions as scope 1 and scope 2 emissions (see Figure 38). These data are relatively easy to measure and are widely available. Many green investment strategies have therefore been directed into companies and sectors that are carbon efficient in terms of their scope 1 & 2 emissions.

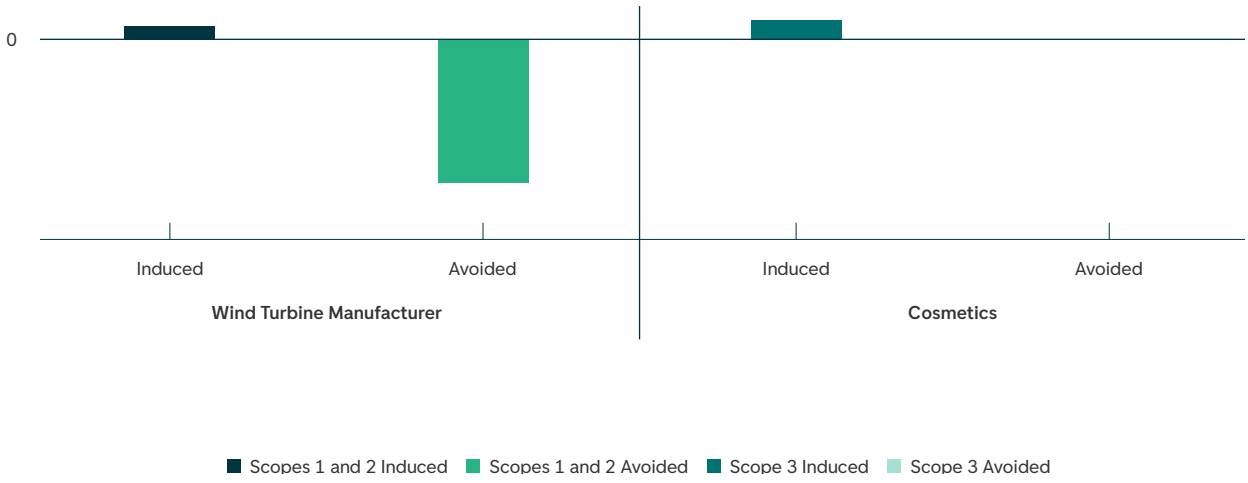
However, we see great value in looking beyond scope 1 & 2. Scope 3 emissions are emissions that happen because of a company's activities but are not owned or controlled by the company. Despite this, companies can still influence scope 3 emissions, particularly through their upstream suppliers, where best-in-class companies often act as consultants to drive improvements. We view this as a positive outcome of including scope 3 targets within broader emissions reduction goals. Nonetheless, these

emissions are complex to measure, and double counting is a concern. As a result, these are typically not reported, or are reported, but not in their entirety. Though some ESG data providers estimate these emissions, it is still not common practice for these to be included in investors' carbon footprinting. It is also important to note that these underreported scope 3 emissions often represent the largest source of emissions for some sectors, such as oil and gas (approximately 80%). See our case study on pages. 56-62 in our 2021 report for more information about challenges related to scope 3. Ignoring these emissions may therefore underestimate the transition risks faced by the underlying company and may raise questions as to the validity of its profile as a "green" company.

Due to these challenges, we believe that considering all scopes of emissions (1, 2 & 3), coupled with an assessment of a company's emissions-avoiding capabilities, represents a fairer assessment of its true climate impact and positive contribution. We therefore engaged ISS-ESG to help us measure the Potential Avoided Emissions (PAE) associated with the fund again this year, for the fifth consecutive year. PAE is a useful quantification that seeks to evidence the solutions-providing capabilities of our fund holdings. We believe that the companies providing these solutions are best positioned to capitalise on the world's requirement to cut emissions.

The example below, Figure 40, demonstrates the avoided emissions concept. The two companies have similar emissions profiles in terms of their scope 1, 2 & 3 emissions, but vary vastly regarding PAE. If we were only to focus on scope 1, 2 & 3 emissions, we would potentially be overlooking the opportunity to invest in companies providing real climate change solutions.

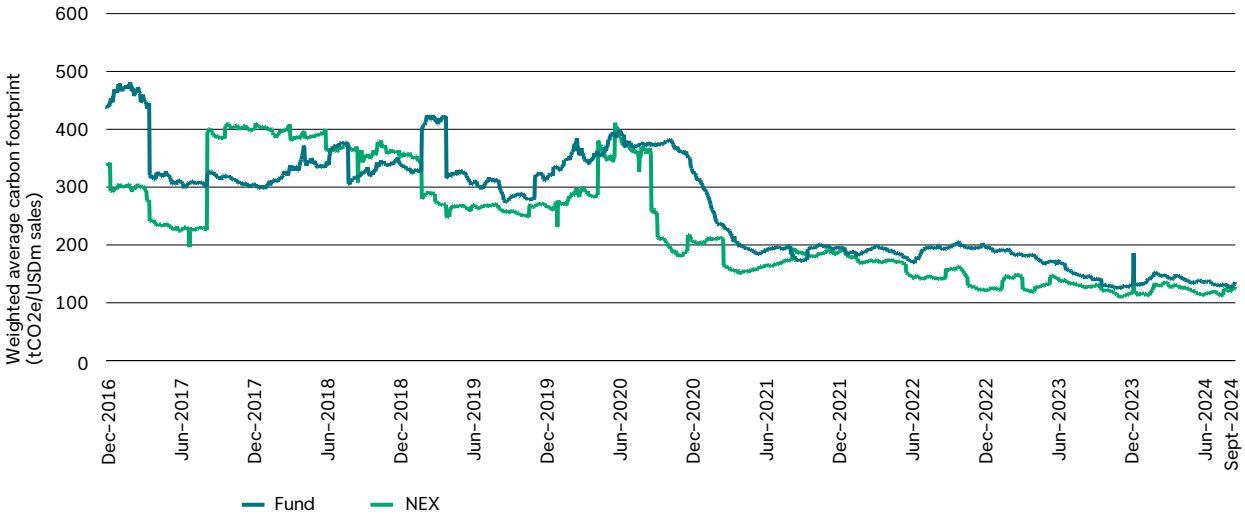
Figure 40. Emissions comparison for cosmetics company and wind turbine manufacturer



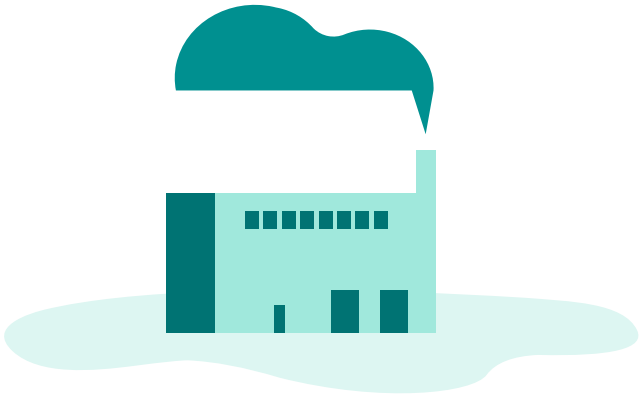
Source: Mirova/Carbon4

Though the fund does not target a weighted average carbon footprint lower than its benchmark, we monitor carbon footprint over time and changes at company and portfolio level lead to engagement.

Figure 41. Development of carbon footprint over time (as at 30.09.2024)



Source: ©2024 MSCI ESG Research LLC. Reproduced by permission



Results of PAE analysis

Figure 42. Results of 2023 PAE analysis under STEPS scenario

STEPS–2023				
Sector	Scope 1 & 2 emissions	Scope 3 emissions	PAE	Net PAE
Wind	0.3	12.5	-227.8	-215.0
Solar	23.1	28.9	-499.5	-447.4
Materials	6.1	15.3	-156.1	-134.7
Energy saving	2.3	1 213.3	-1 382.0	-166.5
Biofuels	5.2	23.5	-378.9	-350.2
Power generation	3.5	47.7	-171.8	-120.7
Other	-	-	-	-
Power storage	3.3	29.5	-194.7	-162.0
Fuel cells	0.0	0.0	-6.9	-6.9
Grid	0.0	5.4	-13.6	-8.1
Total	43.8	1 376.2	-3 031.3	-1 611.4

Source: ISS-ESG, with adjustments from DNB AM

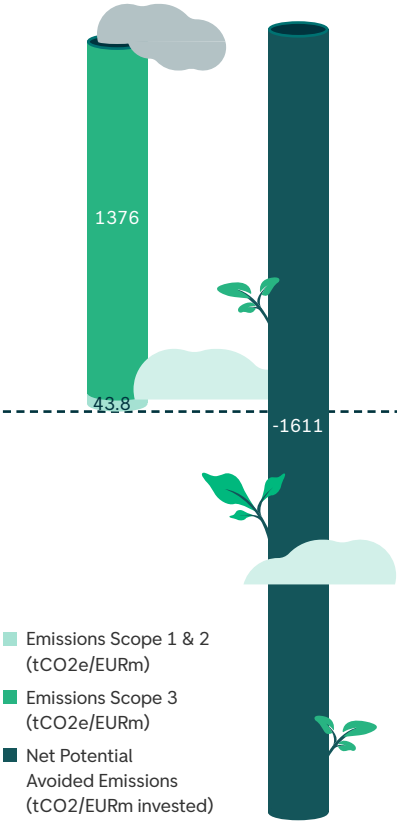


Figure 43. Results of 2022 PAE analysis under NZ scenario

NZ–2023				
Sector	Scope 1 & 2 emissions	Scope 3 emissions	PAE	Net PAE
Wind	0.3	12.5	(121.8)	(108.9)
Solar	23.1	28.9	(274.6)	(222.6)
Materials	6.1	15.3	(158.5)	(137.1)
Energy saving	2.3	1 213.3	(1 382.0)	(166.5)
Biofuels	5.2	23.5	(378.9)	(350.2)
Power generation	3.5	47.7	(167.0)	(115.9)
Other	-	-	-	-
Power storage	3.3	29.5	(203.4)	(170.6)
Fuel cells	0.0	0.0	(6.9)	(6.9)
Grid	0.0	5.4	(13.6)	(8.1)
Total	43.8	1 376.2	(2 706.7)	(1 286.7)

Source: ISS-ESG, with adjustments from DNB AM

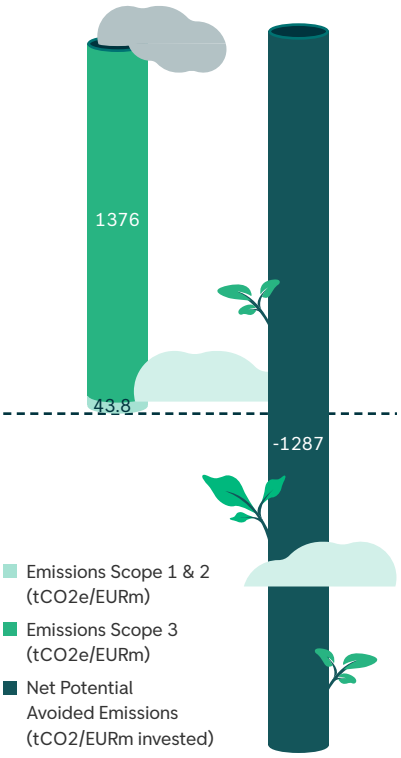


Figure 44. IEA scenarios

Net Zero Emissions by 2050	Scenario Announced Pledges	Stated Policies Scenario
Definitions		
A scenario which sets out a pathway for the global energy sector to achieve net zero CO_2 emissions by 2050. It doesn't rely on emissions reductions from outside the energy sector to achieve its goals. Universal access to electricity and clean cooking are achieved by 2030.	A scenario which assumes that all climate commitments made by governments around the world, including Nationally Determined Contributions (NDCs) and longer-term net zero targets, as well as targets for access to electricity and clean cooking, will be met in full and on time.	A scenario which reflects current policy settings based on a sector-by-sector and country by country assessment of the specific policies that are in place, as well as those that have been announced by governments around the world.
Objectives		
To show what is needed across the main sectors by various actors, and by when, for the world to achieve net zero energy related and industrial process CO_2 emissions by 2050 while meeting other energy-related sustainable development goals such as universal energy access.	To show how close do current pledges get the world towards the target of limiting global warming to 1.5 °C, it highlights the "ambition gap" that needs to be closed to achieve the goals agreed at Paris in 2015. It also shows the gap between current targets and achieving universal energy access.	To provide a benchmark to assess the potential achievements (and limitations) of recent developments in energy and climate policy.

Source: https://www.iea.org/reports/world-energy-model/understanding-weo-scenarios#abstract

As shown in Figure 42 and Figure 43, the fund's underlying holdings potentially avoid more carbon than they emit. As in last year's analysis, two scenarios have been assessed – IEA Stated Policies Scenario (STEPS) and IEA Net Zero Emissions by 2050 (NZ). See Figure 44 for more information on what these scenarios measure.

As in previous years, the PAE analysis focuses on one primary product category per company. To calculate the carbon footprint, we have scaled down the scope 1, 2 and 3 emissions provided by ISS-ESG in line with the percentage of revenues that the PAE analysis covers per company. In practice, by scaling down the carbon footprint in this way we are assuming that the remaining revenue streams have a similar emissions profile to those covered by the analysis. Note that this additional analysis we have conducted to understand net PAE is not based on an established methodology. For some companies, a change in how the percentage of revenues was calculated may change over time. This may lead to a material change in the relationship between total scope 1, 2 & 3 emissions and PAE (so-called "net PAE"). See our case study on the Impacts of scaling scope 1, 2 & 3 emissions in line with revenues covered on pgs. 61–62 in last year's report for more information about this process and the impacts it has on our analysis.

The PAE analysis covers 80.4% of the fund holdings (as of 10.05.2024). Some large holdings, such as IMCD, are not included in the analysis, explaining the coverage. See our case study on IMCD in our 2021 report for more information on why we believe this company is not suitable for this kind of assessment (pgs. 54–55). We use the portfolio composition as at the 10.05.2024 because the PAE analysis is a bespoke piece of work that begins around May each year and the companies selected for analysis were therefore selected at this point in time. The PAE estimates cover an average of 70% of the revenues of these holdings.

The calculations are based on backward-looking figures from 2022 or 2023 (based on data availability at the time of analysis). We expect that significantly better avoided emissions results would have been achieved if based on forward-looking estimates. This is because the portfolio companies have business models centred on products

and services that enable a better environment and should experience growth over the cycle.

We have now calculated fund PAE over five years and it has been interesting to see how the results have developed over time (see Figure 45). As a reminder, due to challenges associated with the sensitivity of the PAE calculation to underlying assumptions, our focus remains on the signals provided by this analysis, and less so on the actual numbers produced. Between 2019-2021, a reduction in PAE/EURm invested was observed. This was primarily determined by changes in methodology, repricing of environmental stocks and the fund and changes to the portfolio mix, driven by changes in the risk/reward assessment. However, in 2022 and again in 2023, we see increases in tCO2e PAE/EURm invested. Last year, the increase was driven by the inclusion of certain companies that we were not able to include in last year's analysis and falling share prices of environmental stocks over the past year. This year, drivers include impacts from calculating PAE over product lifetime as opposed to reporting year only, material changes in portfolio weight year-on-year of companies with a high total PAE, and increased capacity/volumes sold for certain companies.

When it comes to emissions, we have several observations over the years and specifically in this year's assessment:

1) We see a **declining trend in scope 1 & 2 emissions** between 2019-2022 followed by an **increase in 2023**. The general declining trend is also reflected in the fund's weighted average carbon footprint coming down over time. This may be driven by companies setting emissions reductions targets for scope 1 and 2 and beginning to deliver on these and/or changes in the fund strategy which has changed portfolio construction and composition. The increase in 2023 may be explained by portfolio mix, if weights towards companies with larger scope 1 & 2 emissions has increased relative to last year.

2) **Scope 3 emissions have not followed the same declining trend as scope 1 and 2** – although scope 3 emissions dropped from 2019 to 2020, they increased between 2020 and 2023. Similar factors that influenced the trends in scope 1 and 2 emissions also impact scope 3, but a major contributor to the recent increase has been the inclusion of Signify's emissions data. For more details on the drivers behind Signify's high scope 3 emissions, please refer to our case study on pgs. 56-58 in our 2021 report. Despite Signify's significant scope 3 emissions, we were able to incorporate the company into last year's assessment due to adjustments in revenue calculations and our approach to scaling scope 1, 2 and 3 emissions according to the proportion of product revenues covered (see pgs. 61–62 of our 2022 report for more details on this methodology). The year, Signify's impact on scope 3 emissions is amplified, with the company accounting for 79% of scope 3 emissions per EURm invested.

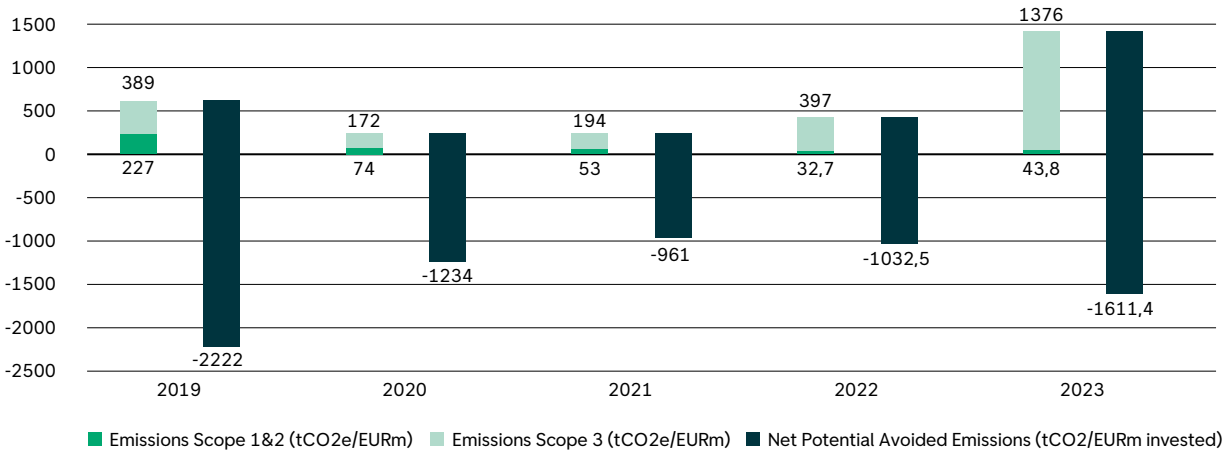
In 2023, Signify conducted a comprehensive review to enhance the accuracy of its scope 3 reporting, obtaining reasonable assurance from its auditor, EY. This effort resulted in a restatement of scope 3 emissions in its latest annual report, encompassing all 15 emission categories beginning from 2022. When comparing the company's restated 2022 scope 3 emissions of 247,653,000 tCO2e with ISS-ESG's modelled scope 3 emissions for 2021 of 317,845,000 tCO2e, we observe a reduction of 22%.

This year's observed increase in scope 3 is therefore attributed to a shift in revenue calculations. In last year's assessment, we applied the company's self-reported EU Taxonomy-aligned revenues as an estimate of product revenues – 11% for the connected lighting/smart lighting/LEDs category in 2022. For 2023, we transitioned back to using the company's LED-based revenues, accounting for 85% of revenues. This shift aligns with two key rationales:

1) Conservatism in scaling: emissions are scaled to 85% rather than the previous 11% (or 9% as reported in 2023), aligned with the percentage of revenues covered.
2) Enhanced representativeness: The divergence between LED-based revenues and EU Taxonomy alignment is due to the EU Taxonomy's stringent thresholds for substantial contribution. For certain segments, the energy efficiency requirements are so strict that the company believes there are currently no lighting products on the market that fully meet these alignment criteria. Consequently, within its LED portfolio, only the most energy-efficient light sources and luminaires, specifically those within the top two energy efficiency classes in the European Product Registry for Energy Labelling (EPREL), are included in the alignment. The company is actively investing in and developing ultra-efficient products and anticipates increased alignment in coming years. Notably, Signify reports full compliance with the EU Taxonomy's Do No Significant Harm and Minimum Social Safeguards criteria.

3) These examples underscore the sensitivity of the aggregated results to fluctuations in portfolio weights, variations in estimation methodologies and changes in company reporting.

Figure 45. PAE for DNB Renewable Energy between 2019–2023



Source: ISS-ESG (with adjustments by DNB AM)

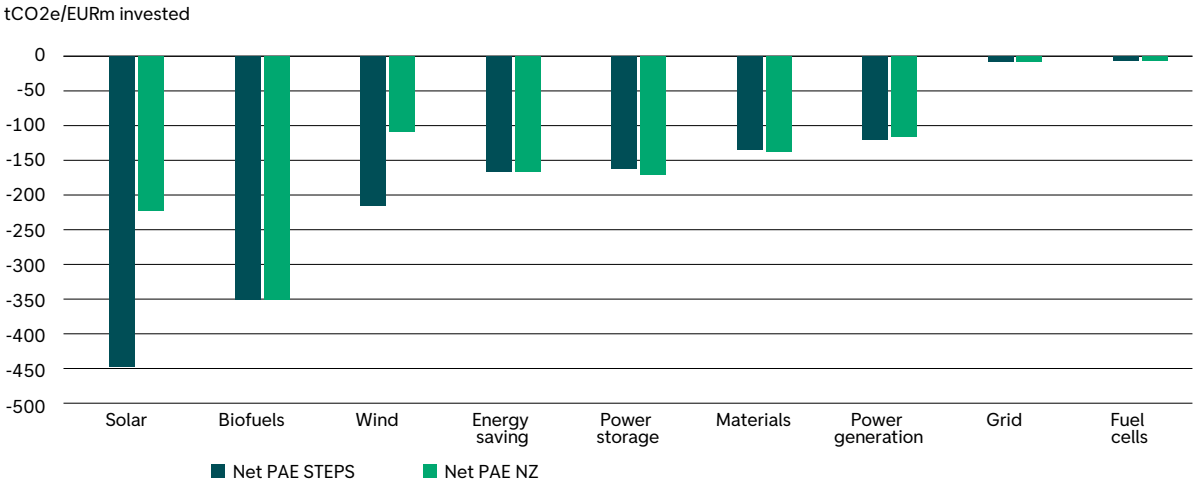
Table 2 Top ten contributors to PAE in the fund

Top ten (STEPS)	Weight (%)	Fund PAE (tCO2)	% of total portfolio	Environmental angle
Signify NV	3.2 %	240 000 000	18.1 %	Energy saving
Canadian Solar Inc.	1.1 %	129 804 328	9.8 %	Solar
Schneider Electric SE	1.4 %	112 598 127	8.5 %	Grid
Vestas Wind Systems A/S	6.4 %	108 747 451	8.2 %	Wind
Yadea Group Holdings Ltd.	0.8 %	96 028 263	7.3 %	Power Storage
Tesla, Inc.	1.1 %	92 237 631	7.0 %	Power Storage
Xinyi Solar Holdings Limited	2.3 %	81 886 449	6.2 %	Solar
Air Liquide SA	0.9 %	77 100 000	5.8 %	Fuel cells
BYD Company Limited	2.2 %	75 663 050	5.7 %	Power storage
Novonesis A/S	8.1 %	65 000 000	4.9 %	Biofuels
Total	**26.3 %**	**893 731 965**	**82.5 %**	

Source: ISS-ESG, DNB AM

It is also useful to consider how different sectors contribute to the overall PAE result. As shown in Figure 46, the net PAE per sector varies considerably. The net results show that solar delivers the strongest contribution by sector, while fuel cells show the weakest contribution. The analysis reveals net emissions avoided for all sectors in both the STEPS and NZ scenarios.

Figure 46 Net PAE breakdown by sector



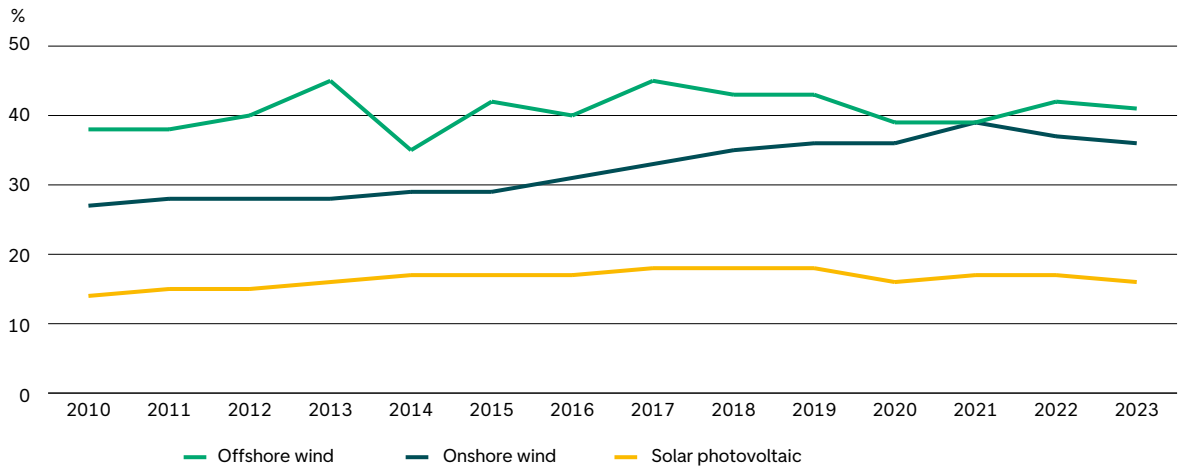
Source: ISS-ESG (with adjustments by DNB AM)

Solar and wind

Solar and wind come in first and third place respectively, similar to previous years. We discuss these here together, despite biofuels coming in second place, as both utilise a similar approach to calculating PAE. The result is in line with our expectations, as the PAE methodology favours technology manufacturers which are allocated PAE over the full lifetime of their products installed in the year of measurement. The lifetime assumption for both solar and wind is 20 years. Changes to load factors applied, installed capacity year-on-year and reduced ownership may influence results compared to previous years.

Assumptions on capacity factors have decreased compared to last year. ISS-ESG uses load factor data from IRENA's annual Renewable Power Generation Costs report in its calculations. The graph below shows how these have evolved over time. Key influences on this development include advancements in technology and geographic distribution, where the availability of wind/solar resources in regions of growth plays a role.

Figure 47. Global weighted-average capacity factors for wind and solar over time[7]



7 Global Trends (irena.org), Renewable power generation costs in 2023: Executive summary (irena.org)

Total net PAE for the solar sector shows more emissions potentially avoided than emitted, with PAE going from -176 tCO2e PAE/EURm invested in 2022 to -447 tCO2e PAE/EURm invested in 2023. Three solar companies were included in this year's assessment – **Xinyi Solar, Canadian Solar and Enphase Energy. Xinyi Solar** is the world's largest manufacturer of photovoltaic glass and has the greatest contribution to the sector's PAE with -246 tCO2e PAE/EURm invested. The company shows a substantial increase in PAE's year-on-year, driven by a ~38% increase in solar glass production/sales volume from 2022 to 2023. **Canadian Solar** also contributes considerably, with a PAE of -198 tCO2e PAE/EURm invested. Canadian Solar is one of the largest solar module manufacturers and it is also growing in the utility scale battery storage space. We see a 62% increase in PAE for Canadian Solar compared to last year, given that the number of modules shipped increased from 21,100 in 2022 to 30,700 in 2023. **Enphase Energy** is a provider of microinverters – these take solar power from DC to AC and sit on the back of each panel, giving better energy yield and insight into which panels are producing power. This enables the system to perform even if there is shade, amongst other things. Enphase Energy's total PAE has remained stable year-on-year and contributes minimally to the sector's PAE in this year's assessment with a PAE of -3 tCO2e PAE/EURm invested.

Two wind companies have been included in the PAE analysis – **Vestas Wind Systems** and **Cadeler.**

Vestas is the leading Western turbine OEM producing both onshore and offshore wind turbines. Vestas' PAE decreased slightly year-on-year in line with a reduction in installed capacity. **Cadeler** is a leading global partner in offshore wind farm construction, maintenance, and decommissioning. The company owns the industry's largest fleet of jack-up offshore wind installation vessels. Cadeler's PAE decreased due to decreased capacity due to upgrades on its jack-up vessels Wind Orca and Wind Osprey during the year, resulting in lower utilisation of its vessels. Net PAE/EURm invested also fell as our ownership in the company has decreased. As a result, total net PAE for the wind sector decreased to -215 tCO2e PAE/EURm invested in 2023 from -243 tCO2e PAE/EURm invested in 2022.

Biofuels

Biofuels comes in second place in this year's assessment, up from fourth place last year. Two companies are classified as biofuels – **Novonesis** and **Darling Ingredients**. **Novonesis** is the leading global biosolutions company after the merger of Novozymes (enzymes and yeast) and Chr Hansen (microbes and cultures). Both Novozymes and Chr Hansen were in the portfolio at the time of the merger and have been assessed in the PAE analysis in previous years. The company has the 8th highest total PAE in the portfolio, with a self-reported figure of -65,000,000 tCO2e. Compared to last year, scope 1 and 2 emissions have decreased whilst scope 3 has remained stable[8]. However, the most significant driver of the year-on-year change is the fact that the portfolio weight has increased from 3.4% on the 31.05.2023 (Novozymes) to 8.1% on the 10.05.2024 (Novonesis)[9]. As a result, the company now has the highest net PAE in the portfolio, with a net PAE of -354tCO2e/EURm invested. Nonetheless, this is likely to be a conservative estimate, as the self-reported figure covers enzymes for biofuels only. The company is also involved in other activities associated with emissions avoidance, including enzymes for washing detergents and bioprotection that helps to prevent food spoilage, thereby reducing food waste. **Darling Ingredients** collects and processes waste fats and oil. These waste products are rendered and processed into value-added products with applications in a range of industries, including animal feed, pet food, human health, and renewable diesel (through Darling Ingredients' JV with Valero, Diamond Green Diesel (DGD)). In this year's assessment, total PAE is higher year-on-year driven by increased production of renewable diesel year-on-year from 372m gallons in 2022 to 1.25bn gallons in 2023. At the same time, scope 1 and 3 emissions have increased (particularly scope 3[10]), whilst scope 2 has remained stable. The net result therefore shows more emissions emitted than avoided with a PAE of 4 tCO2e/EURm invested, in contrast to last year.

Energy saving

Energy saving ranks fourth in the analysis. Companies within this category typically have broad product portfolios. As the PAE analysis typically focuses on one primary product category, the average share of revenue coverage for this sector is lower (63%) than the average (70%). **Signify** emerges as the largest contributor to sector-wide PAE. As highlighted in the chapter introduction, Signify stands out as an outlier due to its scope 3 emissions, as explained our case study on pgs. 56–58 in our 2021 report. Similarly, product lifetime assumptions also make Signify an outlier in terms of PAE. Notably, Signify's reported avoided emissions jumped nearly 11x from 2022 to 2023 (from -21,000,000tCO2e to -240,000,000 tCO2e) as it incorporated product lifetime into its 2023 calculations, a figure that is around 5x higher than ISS-ESG's 2022 modelled estimate[11]. This significant increase likely reflects better insights and data for accurately calculating PAE. However, due to the company's high scope 3 emissions, its net PAE of

8 Last year we used MSCI ESG's emissions data for the company as the company was not included in the PAE assessment via ISS-ESG. The company was included this year and now uses ISS-ESG's estimates for scope 1, 2 and 3 data.

9 We compare Novonesis to Novozymes only, not Novozymes and Chr Hansen, as Chr Hansen was not classified as biofuels in previous years.

10 We use Darling Ingredients' restated scope 3 emissions (restated from 20,752,016 tCO2e to 10,712,000 tCO2e in its most recent reporting) as this is the most up to date figure. In its 2023 sustainability report, Darling Ingredients writes that 2022 scope 3 emissions were modified with updated emissions factors and the addition of the FLAG inventory.

11 Note that in last year's assessment, ISS-ESG accepted Signify's self-reported PAE figure, verifying that it agreed with the methodology applied. However, this approach was inconsistent with its regular approach given that lifetime avoided emissions was considered and modelled in the 2021 assessment, and the company's self-reported figure was not based on lifetime PAE. ISS-ESG has therefore updated the figure and modelled it at -47,658,810 tCO2e for 2022 versus the self-reported figure of -21,000,000 tCO2e.

-152 tCO2e PAE per EURm invested remains significant, though not an extreme outlier overall. By accounting for product lifetimes, the company now reports potentially more emissions avoided than emitted, a notable shift from last year's assessment.

Kingspan ranks as the second largest contributor to overall PAE within this sector, with the assessment focusing on its insulation panels. ISS-ESG has considered energy savings over the life of insulation solutions sold in 2023 but adjusted lifetime assumptions from 60 years to 20 for a more conservative estimate. Positively, Kingspan reduced its scope 1 and 2 emissions from 387,581 tCO2e in 2022 to 178,682 tCO2e in 2023, while scope 3 has remained stable, aiding its net PAE calculation.

While the sector's total net PAE remains positive, three companies are estimated to emit more emissions than they potentially avoid – **Ameresco, Beijer Ref** and **Nibe Industrier**. **Nibe Industrier**, the weakest performer, previously had scope 3 emissions estimated top-down by ISS-ESG, which this year were calculated bottom-up and closely align with the company's self-reported data. In 2022, Nibe Industrier completed a thorough mapping of all 15 scope 3 categories, categorising emissions from purchased foods, use of sold products and other sources. However, ISS-ESG's estimate may differ from the company's own due to limited transparency regarding the "other" category. In addition to having high scope 3 emissions, Nibe Industrier's portfolio weight increased from 0.8% in 2023 to 3.9% in 2024. At the same time, its total PAE is also substantially higher than in last year's assessment – -360,000 tCO2e in 2022 vs. -6,959,415 tCO2e in 2023. This is because the calculation now takes into account the lifetime of heat pumps sold and the type of energy system they replace in each market, whereas the reported value last year was annual. Nevertheless, the net PAE ratio remains unfavourable, given the substantial rise in scope 3 emissions, resulting in net PAE of 71 tCO2e PAE/EURm invested.

Power storage

Power storage holds the fifth position in terms of largest contribution to PAE. The methodology of applying avoided emissions over the lifetime of EVs and other forms of electrified transportation helps to explain the sector's high net PAE. This year, in addition to **BYD** and **Tesla**, ISS-ESG has also analysed **LG Chem** and **Yadea Group Holdings**. **Yadea** is the leading player in electric two-wheelers and is the largest contributor to net PAE within the power storage sector. PAE is calculated over the lifetime of e-bikes and e-scooters sold by the company in 2023. Yadea sold 16,520,000 e-bikes and e-scooters in 2023, resulting in a total PAE comparable to Tesla. However, it has low scope 1, 2 and 3 emissions relative to Tesla and BYD. The net result is therefore -147 tCO2e PAE/EURm invested, accounting for 91% of the sector's net PAE. **LG Chem**, the South Korean conglomerate, is the second largest contributor within the sector. Its main asset is its 82% ownership in LG Energy Solutions making it the third largest battery manufacturer in the world after BYD and CATL, and the largest player outside of China. PAE is calculated for emissions avoided through battery materials and Polyolefin Elastomer (POE) offerings, where attribution is based on the weight of cathode battery materials in an EV and the weight of POE in a solar module. The net PAE for the company is calculated to be -20 tCO2e PAE/EURm invested. For both **BYD** and **Tesla**, the PAE assessment has focused on EVs. PAE are calculated for the lifetime of the EVs sold during the year. **BYD** sold 3,024,417 vehicles in 2023, up 61.9% year-on-year. However, its emissions also increased during the same period, leading to a net PAE showing more emissions emitted than avoided. **Tesla's** total PAE increased dramatically year-on-year from -11,800,000 tCO2e in 2022 to -92,237,631 tCO2e in 2023. The increase is explained by the growth of number of vehicles sold, from 1.3m in 2022 to 1.8m in 2023, coupled with Tesla's vehicle lifetime assumption of 17 years. At the same time, scope 3 emissions also increased substantially between 2021 to 2022. The net result shows that the company avoids more than it emits, but by a very small margin – 1 tCO2e PAE/EURm invested.

Materials

The materials sector is the sixth strongest contributor to PAE by sector. As in previous years, this is primarily driven by **AMG Critical Materials**. The company has a portfolio of CO2-reducing business areas, but for this exercise we focused on the product category thermal barrier coating machines. Thermal barrier coatings refer to proprietary AMG technology enables aircraft engine manufacturers to increase operating temperatures beyond the physical limitations of the base materials by coating nickel-based superalloy blades in the high-pressure combustion section of the engine. This dramatically increases aerospace fuel efficiency. ISS-ESG had adjusted AMG's self-reported PAE figure to account for the lifetime of the coated blades and their weight compared to the total engine. The PAE calculated for 2023 is approximately in line with last year's calculation – 32,262,000 tCO2e in 2022 and 31,779,000 tCO2e in 2023. In terms of net PAE/EURm invested, AMG accounts for 95% of net PAE for the sector.

Power generation

Power generation ranks seventh. As there have not been any methodological changes, differences in total PAE are driven by amount the of renewable energy produced for utilities, number of solar modules sold for **Sunrun** (distributed solar), and number of thermal hydrolysis pre-treatment technology (THP) units sold for **Cambi**. **Concord New Energy** is the largest contributor to the sector's net PAE – the company is a renewable energy developer and supplier that specialises in integrating wind and solar energy projects. The company now uses ISS-ESG's primary model, whereas last year it was the only company within the power generation sector still utilising the secondary model to apply emissions factors (read more about this on pg. 50 of our 2021 report). The company's power generation increased from 6,673GWh in 2022 to 7,824GWh in 2023, explaining the subsequent increase in PAE. At the same time, scope 1 emissions were reduced materially (-83%), whilst scope 2 and 3 increased by 24% and 22% respectively. In sum, the company is estimated to potentially avoid more emissions in 2023 than in 2022, with net PAE having gone from -20 tCO2e PAE/EURm invested to -47 tCO2e PAE/EURm invested. Last year **Cambi**, a world-leading supplier of technology and solutions for converting wastewater solids and organic wastes into valuable bioresources, was the greatest contributor to net PAE for the sector. Its net PAE has now dropped from -81 tCO2e PAE/EURm invested last year to -25 tCO2e PAE/EURm invested this year as a result of significantly lower THP units sold in 2023 compared to the previous year. Positively, there are no detractors to net PAE for the category for the first time since we started analysing portfolio PAE, as **Enel** is no longer in the portfolio. Despite this, we still view Enel as one of the greatest contributors to the energy transition, as one of the world's largest renewables developers.

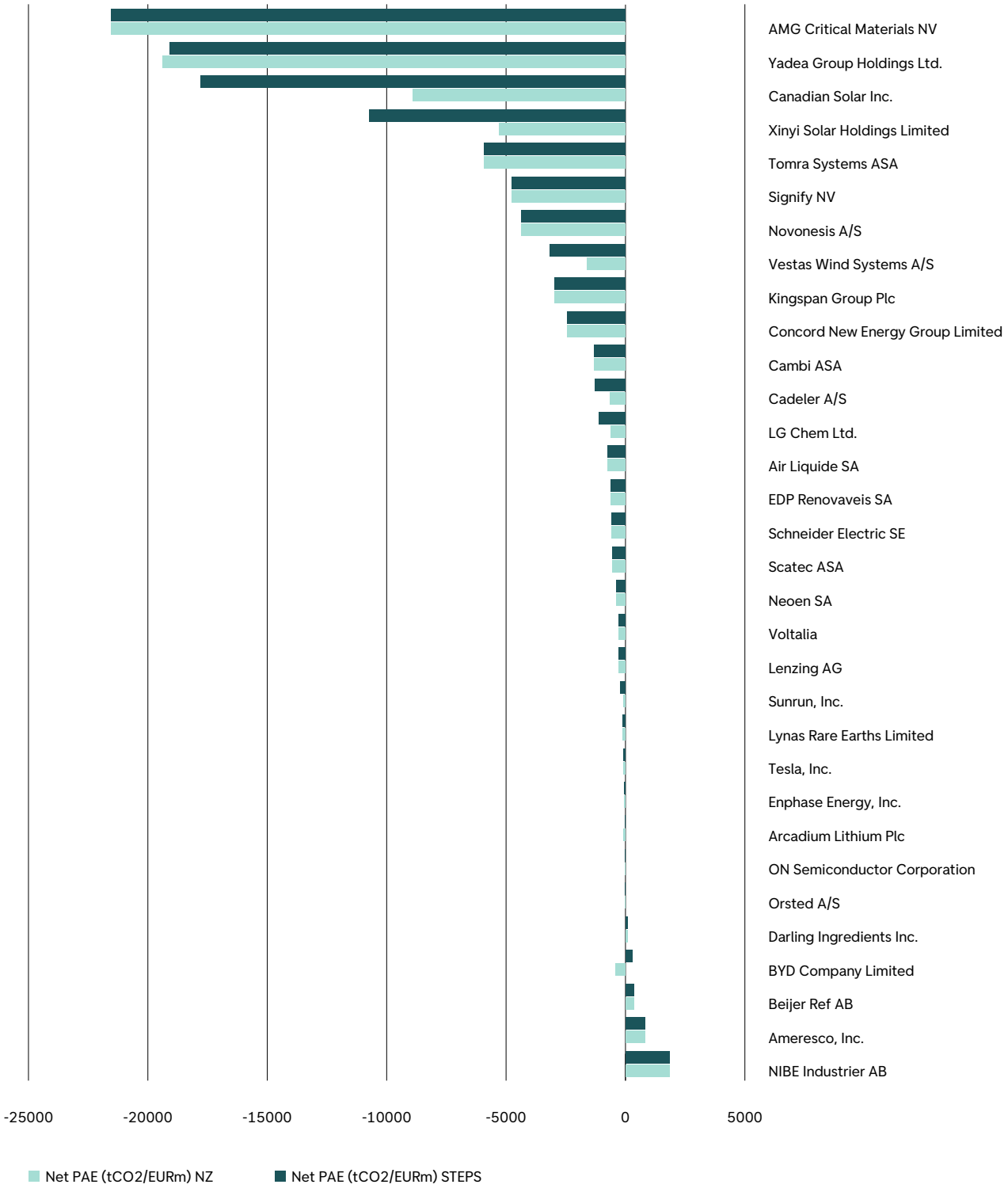
Grid

As in last year's assessment, the result for grid is based on one company – **Schneider Electric**. **Schneider Electric** plays a key role in electrification. Its entire product portfolio is covered by the analysis, as self-reported avoided emissions have been used by ISS-ESG as a starting point. Again, the result for Schneider Electric shows potentially more emissions avoided than emitted. Total PAE has increased year-on-year to -112,598,127 tCO2e in 2023, and scopes 1, 2 and 3 emissions were reduced, leading to net PAE of -8 tCO2e PAE/EURm invested in 2023 versus -11 tCO2e PAE/EURm invested in 2022. The minor difference is explained by a reduction in ownership year-on-year.

Fuel cells

Fuel cells show the smallest contribution to net PAE in this year's analysis. This year, there is only one company within this sector – **Air Liquide**. **Air Liquide** is an established company with potential to transfer existing know-how to drive growth from emerging hydrogen and carbon capture technologies. The company's net PAE is now -7 tCO2e PAE/EURm invested compared to -24 tCO2e/EURm invested last year. Total PAE and the sum of scope 1, 2 and 3 emissions are relatively similar year-on-year, and market capitalisation has increased. The change in result can therefore be explained by a decreased in ownership versus last year.

Figure 48. Net PAE per company (tCO2e/EURm)



Source: ISS-ESG (with adjustments by DNB AM)

Methodology

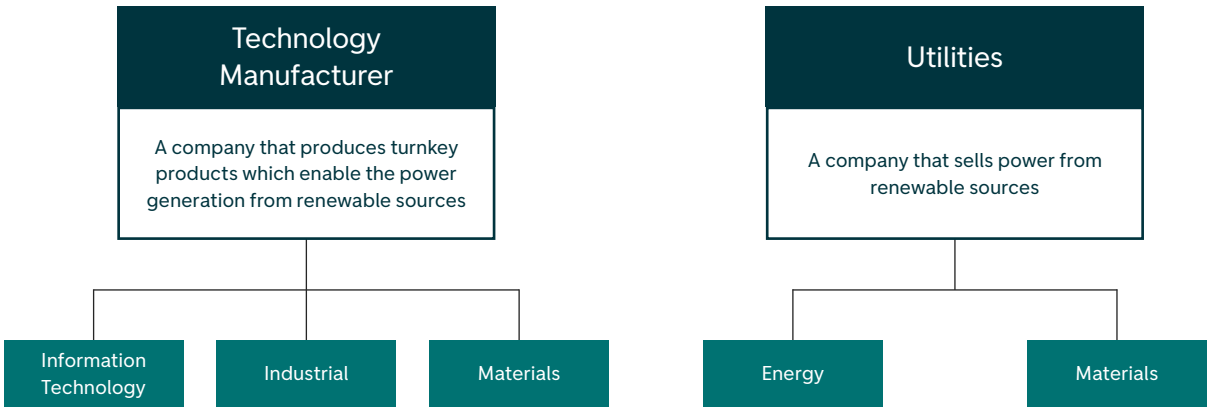
Avoided emissions are "emissions that would have been released if a particular action or intervention had not taken place". Avoided emissions can appear throughout third parties' value chains depending on the type of product or service offered and how this product or service affects operations.

To quantify an amount of PAE, a baseline must be established. The baseline describes what would have occurred if the product or service had not been made available. The PAE are obtained from the difference in GHG emissions between the baseline level and the scenario where the product or service is made available[12]. The emissions avoided by using a more efficient product or service are often conditional to either consumer or market behaviour, although this analysis does not make absolute predictions about behaviour or market developments. Consequently, ISS-ESG has chosen to use the expression potential avoided emissions to underline that the avoided emissions presented in this report are not assured or verified by a third party and are dependent on certain behaviours. Furthermore, the companies included in this analysis provide popular services with a proven market demand, sometimes using infrastructure that has been in place for over a century. It is therefore difficult to establish additionality. For instance, if one company were to cease operation; it is likely that a company with a similar offering would take its place in the market. Further, the source of finance is arguably primarily driven by market demand and financial opportunity rather than a motivation to support activities with proven climate change mitigating effects. Most stakeholders therefore agree that climate mitigating contributions from products and services that are financed through traditional financial markets may not be additional in that they are already taking place in a business-as-usual scenario.

Nonetheless, this should not discourage investors from assessing positive impact. The products and services that are financed via investments, such as renewable energy or LED lights, are vital to transitioning away from carbon intensive activities. The private sector and investors are therefore expected to play a crucial role in the implementation of the Paris Agreement. The policy environments created by Nationally Determined Contributions (NDCs) are making low-carbon technologies attractive for investors, for example through renewable energy auctions. This encourages the private sector to contribute to reaching climate targets. Evaluating the climate change mitigating effects of an investment is a complex exercise. The methodology provides a simplified approach that can be applied at portfolio level. The methodology focuses on investments involved in the production and/or distribution of renewable energy. With a wide array of actors ranging from component manufacturers and material suppliers to wholly integrated manufacturers, project developers and operators to utility providers, the renewable energy sector is highly diverse. ISS-ESG defines two primary groups within this (see Figure 51): renewable energy technology manufacturers and utilities.

12 CDP, Technical note: Glossary terms.

Figure 51 ISS-ESG defines two primary products within the renewable energy sector



Shortcomings of potential avoided emissions analysis

Our assessment of the shortcomings of the PAE analysis can be found in their entirety in our 2020 report. Here we summarise the main points:

- **Double counting:** in an interlinked society with complex value chains, it is nearly impossible to completely exclude double counting.
- PAE assessment only considers a **single product category per company:** Sometimes as little as ~1% of company revenues have been covered by the assessment. Though this approach is considered best-practice today, we believe that the final result is highly conservative.
- The results rely on the **quality of available data:** we note a substantial difference in the quality and volume in company responses. For companies that were not able to provide data but whose offering enables PAEs, generic data has been used. In some cases, the calculations are based on generic estimates.
- **Calculations are based on backward-looking data:** Investors invest based on the prospect of what companies will deliver in the future.
- **Conservative assumptions:** For instance, the lifetime assumption of an asset is a key consideration. If we change the assumption around the number of years a solar park will be in operation in our discounted cash flow analysis, it will yield different results. For many of the products we have used conservative lifetime assumptions while, in reality, they will be in operation longer, thereby saving more emissions.
- **Determining the baseline:** The baseline itself introduces uncertainty. For instance, for the power generation sector, the local grid emission factor can vary substantially between regions. In practice, it is also difficult to obtain accurate data. The calculation for the baseline comparison is therefore based more on high-level and readily available data.
- **Additionality:** It is difficult to establish additionality.

8 Appendix

Exclusion criteria

The fund applies several layers of exclusion criteria:

Excludes	Based on
Companies found to be in breach of: – Production-based criteria (tobacco, pornography, cannabis for recreational use, and/or controversial weapons) – International norms and standards	DNB's Instruction for Responsible Investments
Companies with >5% of revenues from: – Alcohol production – Gambling – Conventional weapons	Additional exclusion criteria defined by DNB AM
In addition to some of the above, companies with >5% of revenues from: – Manufacturers that mine uranium – Companies that base their electricity generation on nuclear energy – Operators of nuclear power plants and manufacturers of essential components for nuclear power plants – Companies which use and/or produce hydraulic fracking technologies – Manufacturers of conventional weapons – Coal mining companies* – Companies which base their power production on coal energy* – Companies which exploit and/or concentrate oil sands* * Stricter threshold that in DNB's Instruction for Responsible Investments	FNG Label

Disclaimers

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FNG Label

The FNG-Label is the quality standard for sustainable investments on the German-speaking financial market. It was launched in 2015 after a three-year development process involving key stakeholders. The sustainability certification must be renewed annually.

The FNG-Label gives the German-speaking countries a quality standard for sustainable mutual funds. The holistic methodology of the FNG-Label is based on a minimum standard. This includes transparency criteria and the consideration of labour & human rights, environmental protection and anti-corruption as summarised in the globally recognised UN Global Compact. In addition, all companies in the respective fund must be explicitly analysed in terms of sustainability criteria. Investments in nuclear power, coal mining, significant coal-fired power generation, fracking, oil sands, weapons and armaments are taboo.

High-quality sustainability funds that excel in the areas of "institutional credibility", "product standards" and "impact" (title selection, engagement and KPIs) are awarded up to three stars. The FNG-Label goes far beyond a mere portfolio assessment and is holistic and meaningful. With more than 80 questions, the Label analyses and evaluates, for example, the sustainable investment style, the associated investment process, the associated ESG research capacities and a possibly accompanying engagement process. In addition, elements such as reporting, the investment company as such, an external sustainability advisory board and issues of good corporate governance play an important role.

The auditor of the FNG-Label is the University of Hamburg. The Qualitätssicherungsgesellschaft Nachhaltiger Geldanlagen (QNG) bears overall responsibility, especially for coordination, awarding and marketing. An independent committee with interdisciplinary expertise also accompanies the audit process. The FNG-Label has been awarded the title "highly recommended" by the consumer portal www.label-online.de and has been added to the shopping basket of the German Council for Sustainable Development. The EU, together with the other national, governmental label systems, has also invited it to join a working group within the framework of the EU Action Plan for financing sustainable growth.

Detailed information on the methodology can be found in the rules of procedure.

Further information on the FNG-Label: www.fng-siegel.org.

Photo: Claudio Beduschi / Getty Images

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