

ESG from A to Z

EU & US Transition CAPEX investment opportunities

Thematic Investing

EU and ESMA focus on transition financing/investing

EU environmental objectives, including the Net-Zero Industrial Act, need additional annual investment of €700bn till 2030. To facilitate finance for the planned transition, the EU Commission adopted a sustainable finance package in June 2023, which includes recommendations on transition finance for companies, financial intermediaries, and investors.

Carbon prices will accelerate transition investing

The potential generalisation of Emission Trading System (ETS) and making the polluters pay for their GHG emission may become the rule to combat climate change. The EU ETS is a cornerstone of the EU's strategy and California in the US goes with the flow. The market could be approaching a floor for European carbon as California carbon allowance prices continue to rise. In our view, the European project cannot be dissociated from decarbonization at this point. Thus, we believe any EUA dips into the €50-60/t range will likely be temporary until the Carbon Border Adjustment Mechanism forces a reset higher for global CO₂e allowance prices.

12% higher green bond issuance relates to transition

2023 labeled bond issuance of \$828bn beats every year except 2021; it comes in about 7% higher than 2022. 59% of total issuance came in the form of green bonds, which increased by 12% YoY. The proportion of green bonds has risen each year since 2020, when they were about half of the total labeled issuance by volume. 2023 saw a \$22bn increase in sovereign green bonds. Our view is that this is a combination of increasing focus on transition-related projects.

Identifying green capex stocks with strong fundamentals

We focus our stock-specific analysis on sectors with high carbon intensity: utilities, oil and gas, chemicals, metal, mining & building material are the sectors for which capex investments towards transition, adaptation or net-zero strategy are meaningful and required. But it also means that the stocks could become more ESG compatible going forward. We highlight 14 stocks across EU and US, with Net-Zero targets, lower carbon emissions over the last four years, strong fundamentals, underweighted by ESG funds and green capex projects.

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Acronyms:

ESG – Environmental, Social Governance
ESMA – European Securities and Markets
Authority
EUA - European Union Allowances

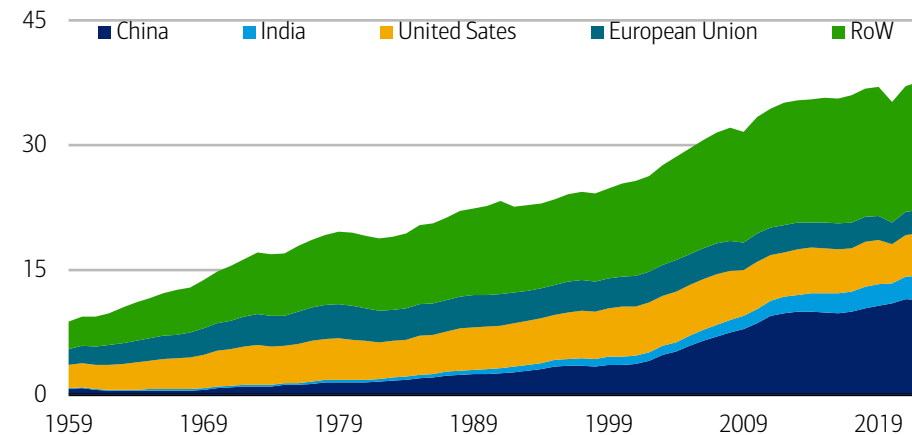
More capex for the green transition

Carbon emissions not showing significant inflexion yet

The need to reduce overall carbon emission is an evidence and urgency as flagged during the recent COP 28. Carbon emission from fossil fuel have been consistently and irremediably growing over the last century, thus despite an increasing commitment from governments, corporates, and citizens to keep temperature from rising above 1.5°C. But the clock is ticking, and more drastic and significant reduction are required.

Exhibit 1: Global CO₂ emissions from fossil fuel by region (GtCO₂)

Man-made carbon emissions have significantly increase during the past century



Source: Global Carbon Project

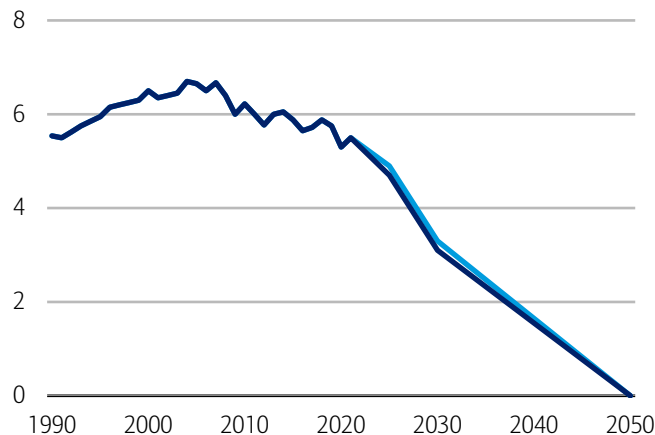
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Ambitious target but lack of investment so far

Both the US and EU-27 committed to be Net-Zero by 2050 with intermediate target of 50% to 52% GHG emission reduction by 2030 (below 2005 level) and 55% reduction by 2030 (versus 1990) respectively.

Exhibit 2: US Net-Zero target

26-28% reduction by 2025 (from 2005), and 50-52% by 2030

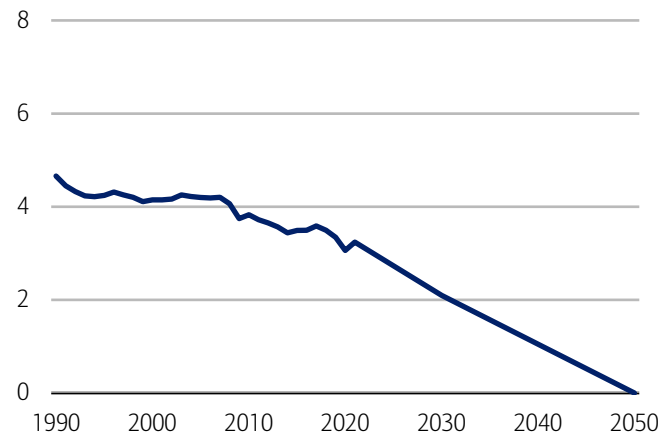


Source: United States Department of State and the United States Executive Office of the President

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Exhibit 3: EU-27 Net-Zero target text

55% CO₂ emission reduction by 2030 (from 1990) and Net Zero by 2050



Source: European Environment agency and EU Commission

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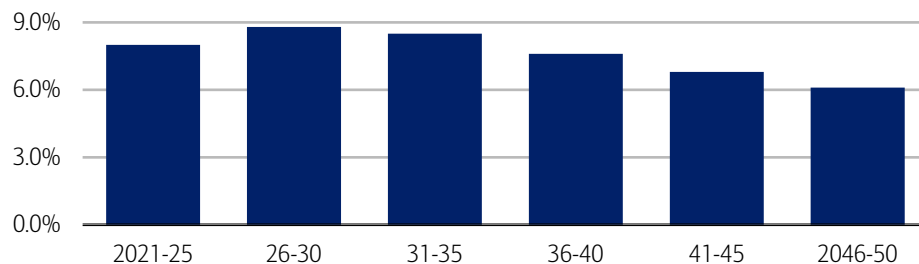
Be it "Fit for 55" plan in the EU, the European Green Deal or the US IRA, governments and commissions expect 30 years of investment in clean energy, electrification of transportation, green and efficient buildings, industrial transformation and reductions of non-carbon dioxide climate pollutants to deliver Net-Zero.

More than \$200tr investment required by 2050

The need to step-up investment to deliver a Net-Zero transition is consensual. Estimates however vary on the global amount required to deliver 1.5°C target by 2050. Estimates range from \$200tr to \$275tr. McKinsey estimated in a report that, on average, 7.5% of the global GDP needs be invested every year for the next 27 years with a peak in 2026-2031, in order to meet net-zero by 2050.

Exhibit 4: Percentage of global GDP required to deliver Net-Zero by 2050

Cumulative spending of 7.5% of global GDP p.a., an overall \$275tr investment over the next 30 years



Source: Network for Greening the Financial System 2021 (Net Zero 2050 scenarios) REMIND-MAGPIE model; Vivid Economics; McKinsey Center for Future Mobility Electrification Model (2020); McKinsey Hydrogen Insights; McKinsey Power Solutions; McKinsey–Mission Possible Partnership collaboration; McKinsey Sustainability Insights; McKinsey Agriculture Practice; McKinsey Nature Analytics; McKinsey Global Institute analysis

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Europe historical investments are also too low. 2030 climate goals (and 2050 subsequently) require a significant step-up in investment over the coming years to deliver the targets. The EU Commission estimates a €93bn step-up is required per year in the supply chain to reach Fit-for-55 targets and close to €500bn incremental per year for the next seven years for the energy and transport sectors. It also raises the question of supplying and securing materials in the mid to long term and reducing Europe's strategic dependency, an issue that arise post Ukraine war on energy supplies and that resulted in the REPowerEU plan.

Exhibit 5: Average annual investment needs in the energy system and for transport, historical trend 2011-2020, and Fit-for-55 policy scenario 2021-2030

€93bn investment step-up per year required in supply to deliver Fit-for-55 targets

Sector	2011-2020 (annual)	Fit-for-55 policy scenario 2021-30 (annual)	Gap (annual)
Supply side	55	148	93
Power grid	15	55	40
Power plants, including boilers and new fuels	40	93	53
Demand side	160	339	179
Industrial sector	12	34	22
Residential	102	202	100
Tertiary	46	103	57
Total (Energy System)	215	487	272
Transport sector	549	754	205
Total (energy + transport)	764	1,241	477

Source: EU Commission

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EU and ESMA focus on transition

Defining transition

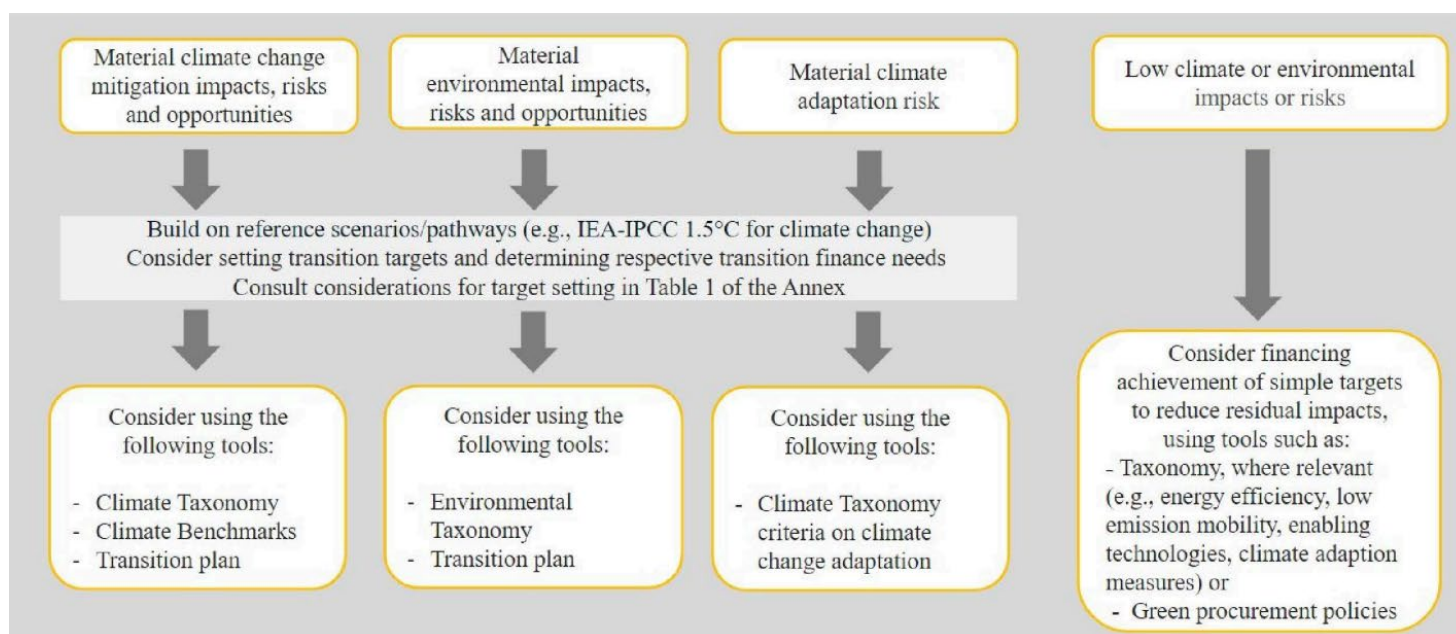
EU environmental objectives, including the Net-Zero Industrial Act, need additional annual investment of €700bn till 2030. To facilitate finance for the planned transition, the EU Commission adopted a sustainable finance package in June 2023, which includes recommendations on transition finance for companies, financial intermediaries, and investors.

The EU Commission defines transition finance as the financing of investments compatible with and contributing to the transition, and which avoid lock-ins, including investments in:

- portfolios tracking 'EU climate benchmarks';
- Taxonomy-aligned activities, including (1) transitional economic activities as defined by Taxonomy for the climate mitigation objective, and (2) Taxonomy-eligible economic activities becoming Taxonomy aligned in accordance with regulation over a period of five years (or exceptionally 10);
- undertakings or economic activities with a credible transition plan at the level of the undertaking or at activity level;
- undertakings or economic activities with credible science-based targets, where proportionate, that are supported by information ensuring integrity, transparency, and accountability.

Exhibit 6: Overview of the tools to define transition finance needs in the case of material impacts, or low or residual impacts

Different types of impacts, risks and opportunities could be reflected in individual transition targets and subsequently transition finance needs



Source: EU Commission

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Transition finance for companies

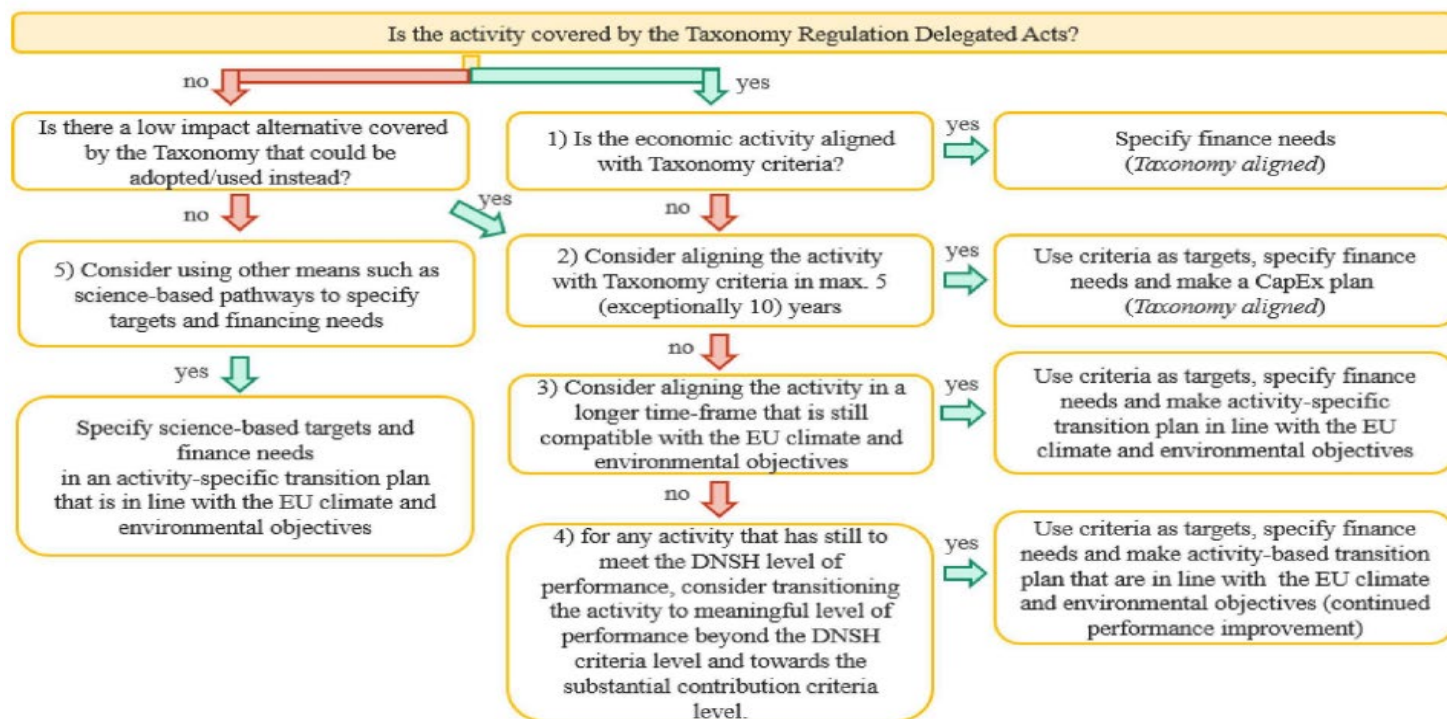
Recommendations for companies seeking transition finance are the following:

- Identify need using a materiality assessment based on sustainability impacts, risks, and opportunities;
- Determine the need by setting transition targets and defining individual transition pathways based on science-based scenarios and pathways;
- Use existing tools to set transition targets: the Taxonomy or EU climate benchmarks as well as credible transition plans can be used to support the definition of transition targets and articulate specific transition finance needs at the level of the undertaking and at the level of economic activities;

- Specify needs via planned capital expenditure and, when appropriate, operating expenditure relating to achieving climate and environmental targets as well as current or targeted revenue related to the transition.

Exhibit 7: Using EU Taxonomy to specify transition needs

EU Taxonomy does not prescribe the timeline to align its activities with any of its criteria. It leaves flexibility to their own science-based transition paths



Source: EU Commission

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Investing in transitioning companies: engagement is key

The EU Commission also recommends that investors consider engagement as an important part of their transition finance strategy. When engaging with the undertakings on transition, the following aspects could be discussed:

- material sustainability impacts, risks and opportunities, and how climate and environmental impacts and risks are addressed;
- how the contribution to a climate or environmental objective is determined and what the time horizons for the lending or investment are;
- the underlying transition pathways, to ensure that the lending or investment strategy is compatible with the transition;
- whether or how the principle of 'do no significant harm' as defined in Taxonomy is applied and how adverse impacts are dealt with;
- how sustainability performance and the transition targets and plans of undertakings will be considered, including in assessing the risk of stranded assets, and transition risks and physical risks more broadly.

Other recommendations

Other recommendations for financial intermediaries and investors include:

- using EU climate benchmark decarbonization methodologies to set portfolio transition targets and identify relevant companies;

- using the Taxonomy to set portfolio level targets and identify relevant undertakings: track the proportion of investments eligible, and progress towards aligning with Taxonomy criteria;
- using common metrics in transition plans, for example:
 - GHG emission reduction targets, for scope 1, scope 2 emissions, and to the extent possible also material scope 3 emissions;
 - Taxonomy alignment and plans to align for economic activities in high impact sectors;
 - CapEx to finance the transition steps with references to the key sustainability metrics used (e.g., taxonomy-based capital expenditure);
 - Credibility of the transition targets based on the actions and levers undertakings plan to use to achieve the targets, and their dependency on external factors (16), expected costs of transition;
 - Transition risks and how potential transition targets can reduce such risks over time;
 - Exposure to climate-related financial opportunities (e.g., as % overall portfolio/underwriting activity);
 - Current and planned financed emissions across sectors, geographical areas and time frames;
 - Portfolio alignment metrics (e.g. weighted average carbon intensity, implied temperature rise, financed emissions relative to a commonly used science based benchmark).
- using information provided by issuers of green bonds, sustainability-linked bonds or other bonds with transition finance features to select investments with environmental integrity and the level of ambition an investor is looking for.

Economics to be challenged with carbon prices

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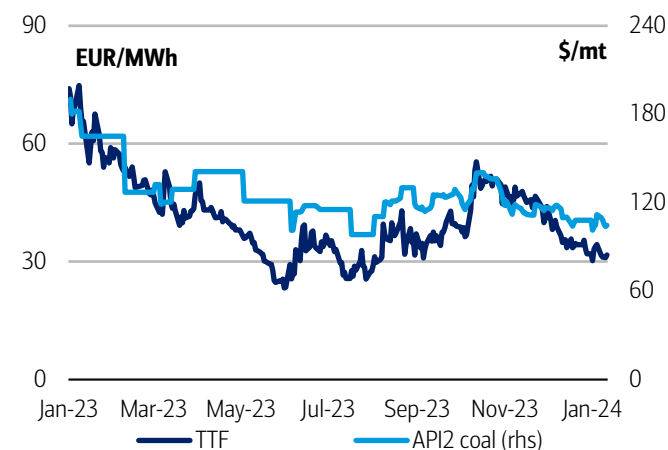
Lower gas & coal prices and rising supply of allowances...

Unlike most commodities, the price of carbon is an entelechy constructed by regulators to simultaneously reduce the release of carbon into the atmosphere while minimizing the negative impact this clean-up process has on the economy. In the medium term, it tracks closely electoral pressures and political cycles, as it is the public that demands decarbonization in a free-market democracy.

In the short-run, however, it often trades as a reflection of what is happening in other markets, including energy and interest rates. Falling European natural gas and thermal coal prices (Exhibit 8), coupled with declining spark and dark spreads, have come together to push European Union Allowances (EUA) from a high point of €97/t last year to €64/t in recent weeks. Europe is simply burning a lot less thermal energy (Exhibit 9), and carbon prices are starting to reflect this reality.

Exhibit 8: TTF and API2 coal prices

Falling EU natural gas and thermal coal prices have helped push EUAs from a high point of €97/t last year to €64/t in recent weeks

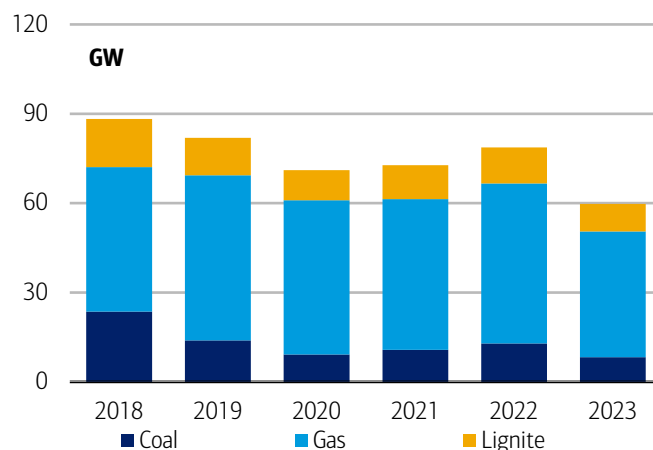


Source: Bloomberg

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Exhibit 9: NWE coal, gas, and lignite power generation

At heart, Europe is simply burning a lot less thermal energy, and carbon prices are starting to reflect this reality



Source: Platts

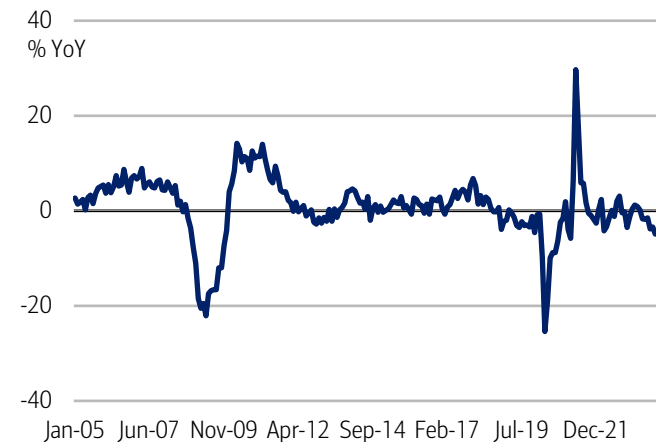
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...coupled with high rates and a weak German economy...

While fundamentals are important in day-to-day trading moves and warm winter weather has recently played against carbon, it is not just relative fuel prices that have sunk EUAs during the past 12 months. A softer power market has been in the works for a while due to a weakening industrial backdrop in Germany, Europe's economic powerhouse (Exhibit 10). The gap left by the collapse of Russian natural gas supplies led to a 20% or so permanent reduction in European industrial gas demand, and power markets have not been immune to the rapid de-industrialization of Europe. On top of that, high interest rates, driven up aggressively in the European Central Bank deposit facility from -0.5% to 4% in a bid to contain inflation (Exhibit 11), and a steep contango in the curve have also further reduced demand for permits by increasing the cost of carry of this commodity, pressuring prices lower.

Exhibit 10: Germany industrial production growth YoY

A softer power market has been in the works for a while due to a weakening industrial backdrop in Germany, Europe's economic powerhouse

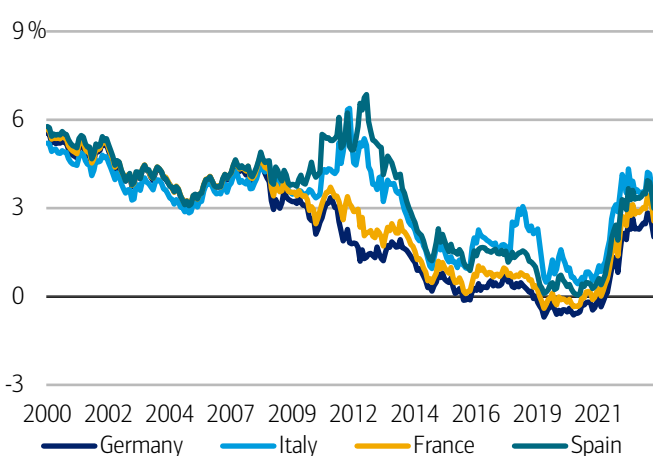


Source: Bloomberg

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Exhibit 11: 10 year government bond yields

High interest rates, driven up aggressively in the ECB deposit facility from -0.5% to 4%, have also further reduced demand for permits



Source: Bloomberg

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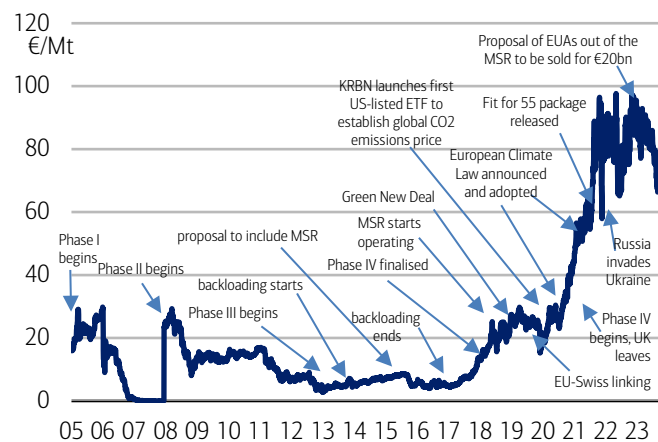
...have sunk EUAs below €65/t, but the floor may be near

Beyond the demand factors at work, it is important not to dismiss the role of rising supplies and the perception that €100/t carbon has been further negatively impacting the European economy at a very challenging time. The proposal that €20bn worth of

allowances be sold from the Market Stability Reserve (MRS) as prices approached €100/t (Exhibit 12) has signaled that European governments are not prepared to decarbonize at any cost, likely resulting in some speculative selling and a temporary cap on carbon. Plus RePowerEU is set to keep pulling more auction volumes forward at a time EUR cash returns are finally attractive. Still, the market could be approaching a floor for European carbon as California carbon allowance prices continue to rise (Exhibit 13). In our view, the European project cannot be dissociated from decarbonization at this point. Thus, we believe any EUA dips into the €50-60/t range will likely be temporary until the Carbon Border Adjustment Mechanism forces a reset higher for global CO₂e allowance prices.

Exhibit 12: European CO₂ emission prices

EUAs have historically traded between 0 and 100 EUR/t with prices significantly picking up since 2020 and now hovering in the 80 to 100 EUR/t range

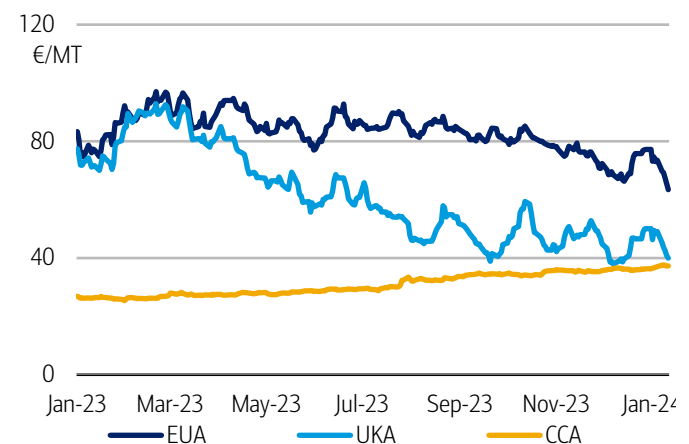


Source: Bloomberg

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Exhibit 13: EUA, UKA, and CCA prices in EUR

Still, the market could be approaching a floor for European carbon as California carbon allowance prices continue to rise



Source: Bloomberg

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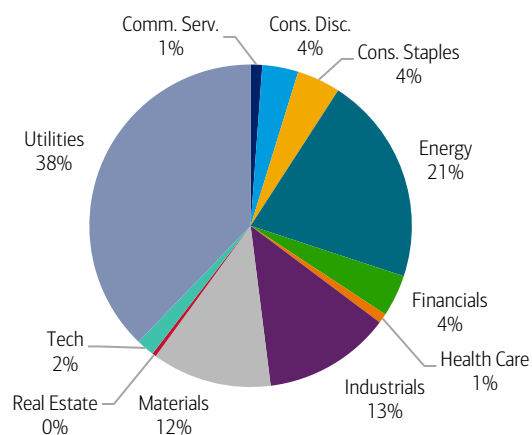
Energy, utility, and material = biggest CO₂ emitters

The potential generalisation of Emission Trading System (ETS) and making the polluters pay for their GHG emission may become the rule to combat climate change. Most ETS works on a 'cap and trade' principle, with companies getting free and/or buying CO₂ equivalent allowance for their scope 1 and 2 emissions. The aim by governments is to reduce the cap allowance over time, forcing companies to deliver Net-Zero. Revenues from ETS goes to governments to fund and support investment in renewable energy, low carbon technology and energy efficiency improvements. Carbon price will be part of the economic model for corporates alongside with CO₂ equivalent allowances. It means that the fiscal cost of Greenhouse Gas (GHG) emission may become a significant incentive for companies to accelerate their decarbonisation process and transition to greener energies and manufacturing processes, implying, in our view, an acceleration of green capex in (a very) the near future.

Looking at sectors and industries (excluding Financials), Material, Utilities and Energy contribute to 81% of scope 1&2 emissions globally. This is where we expect most of the capital expenditure toward decarbonisation should happen.

Exhibit 14: S&P500 scope 1&2 GHG emission per industry (2022)

More than 70% GHG for energy, utilities and material

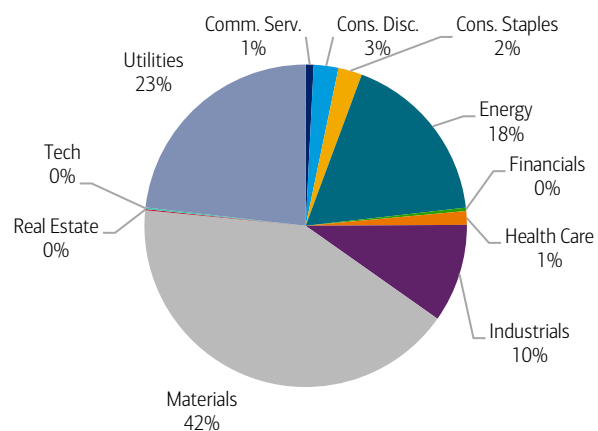


Source: BofA Global Research, Bloomberg

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Exhibit 15: Euro Stoxx 600 scope 1&2 GHG emission per industry (2022)

More than 80% GHG for energy, utilities and material



Source: BofA Global Research, Bloomberg

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Identifying green capex stocks with strong fundamentals

We focus our stock-specific analysis on sectors with high carbon intensity previously identified above. Utilities, oil and gas, chemicals and metal, mining & building material are the sectors for which capex investments towards transition, adaptation or net-zero strategy are required and will be meaningful. We may also highlight the importance of some of these sectors in the development of green industries as they contribute to manufacturing components and sub-components of net-zero technologies and are as such enablers of the green transition and eligible under the US IRA or European Net-Zero Industry Act (see ESG from A to Z: Year Ahead: Five ESG investment trends for 2024 04 December 2023).

Overall, it means that the stocks could become more ESG compatible going forward. We identify some companies in sectors disliked by ESG funds that could adapt faster than their peers, resulting in a potential re-weighting by ESG funds.

More specifically, we screen companies on the following criteria:

- BofA companies under coverage in the S&P600 and the Stoxx 600 indices
- Stocks that have adopted a Net-Zero target as reported in their annual or sustainability report;
- Stocks for which we have seen Greenhouse gases (GHG) intensity progress over the last four years. We used company reported data collected by Bloomberg, from 2019 to 2022;
- Stocks which are Buy rated by BofA equity analysts;
- Stocks that are underweighted by ESG funds (see Methodology on page 42);
- Stocks for which we were able to identify clear green capex projects, as reported by the company in its latest annual and/or sustainability report and press releases.

Note however that the list of companies for the four industry categories listed below are screens and not recommended lists either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions. The screens are intended to be indicative metrics only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. These screens were not created to act as a benchmark.

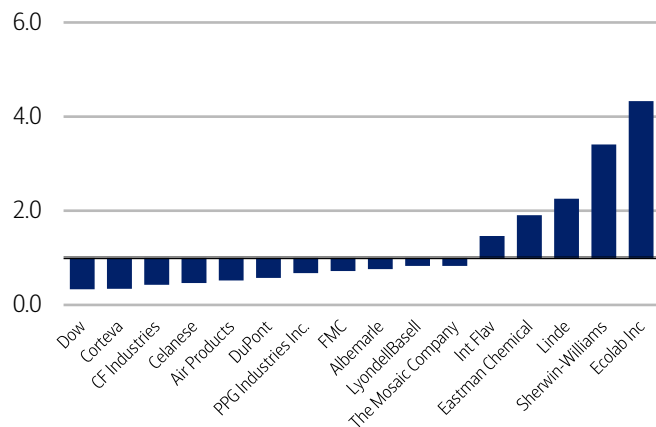
Chemicals: still some under-estimated stocks

Chemical overweighted by ESG funds in the US and Europe

The chemicals industry remains a significant CO₂ emitter although the sector is overweighted in the US (1.78, market cap. weighted) and in Europe (1.35) by ESG funds. The latter have however been very selective and if Croda in Europe or Ecolab in the US are significantly overweighted, their respective involvement in being Climate, Land and People Positive by 2030 or reduce GHG emission by 50% by 2030 (and net-zero by 2050) respectively are seen as strong commitment by ESG funds.

Exhibit 16: Chemicals - ESG funds positioning vs. S&P 500

Very selective investment in US chemical for ESG funds

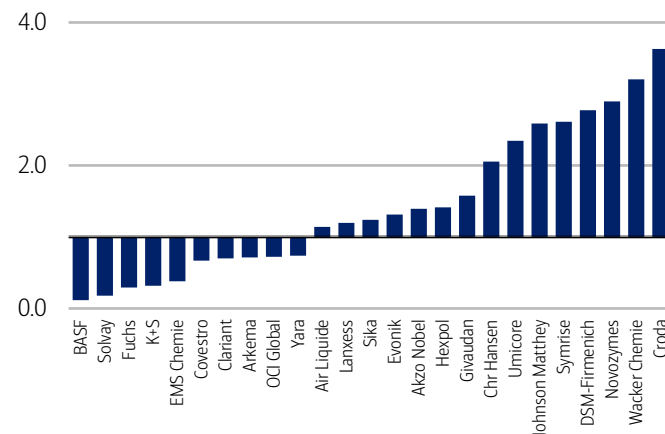


Source: EPFR Informa Financial Intelligence, BofA Global Research

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Exhibit 17: Chemicals - ESG funds positioning vs. Euro Stoxx600

European ESG funds investing in chemicals



Source: EPFR Informa Financial Intelligence, BofA Global Research

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Green capex still relatively low for chemicals

Green capex is still a small part of the overall capex for the chemical industry. BofA analysts believe that chemical companies may have to step-up investment to deliver their net zero target and potentially accelerate their transition, but changes may take time and be relatively slow over 2024-2026. Meanwhile, chemicals companies are providers of some of the components of green technologies including photovoltaic panels and batteries.

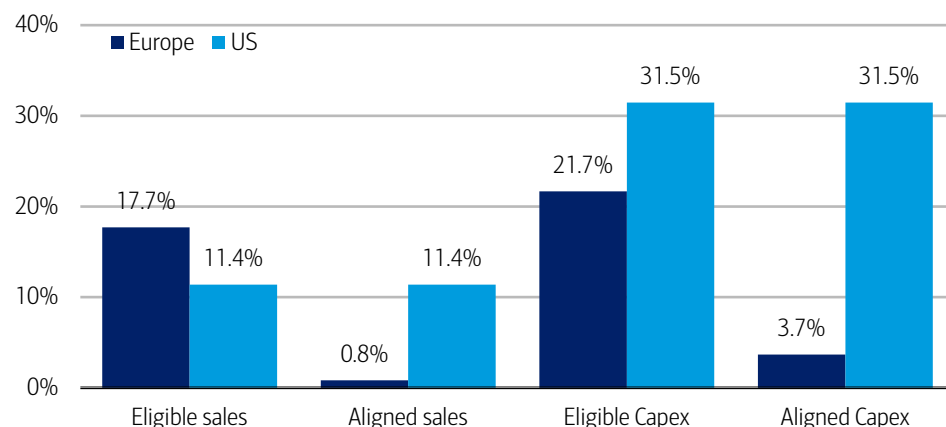
The chemicals industry is nonetheless exploring new initiatives to deliver Net-Zero targets and constantly working on:

- Improving production processes to lower carbon footprints;
- Transitioning to decarbonisation. Some have been working on hydrogen production facilities to optimise performance, reduce carbon emissions and develop carbon capture storage (CCS) projects. Others have been developing polymer polyvinylidene fluoride (PVDF) used in lithium-ion batteries and the Electrical Vehicle industry;
- Investing in new breakthrough technology. BASF, Sabic and Linde have joined forces to build large-scale electrically heated steam cracker furnaces, powered by renewable electricity with the aim to reduce CO₂e emissions by 90% compared to existing gas technology.

Taxonomy aligned capital expenditure for European companies remains relatively low though we are inclined to believe that alignment could progressively tend to eligibility level. In many production processes, the share of renewable materials does not meet some threshold, or some plant exceed EU benchmarks such as EU ETS but it may be a matter of time before companies accelerate their decarbonization. In the example of BASF for which 18.6% of the capex is Taxonomy eligible, but only 0.5% is aligned today, the company committed to €4.0bn investment by 2030 to reach its climate protection target. It compares with €28.8bn capex in total, meaning c14% of what we would qualify as green capex.

Exhibit 18: Chemicals 'Green' sales and capex

Chemicals have a low exposure to 'green' sales



Eligibility and alignment follow the EU Taxonomy classification in the case of Europe

Source: BofA Global Research estimates, company report, Bloomberg

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Companies to consider in Chemicals

By crossing a) Net-Zero commitment, b) GHG intensity progresses over the last four years, c) fundamental views (ie BofA Buy rating), d) underweighted by ESG funds and e) green capex projects, we highlight OCI, BASF and CF Industries with solid decarbonisation plans, increase usage of renewable energy, or commitment to carbon capture. On the other hand, K+S has a low percentage of taxonomy eligible capex today and we see limited prospects for the company to change its profile in the shorter-term. Fuchs's eligible capex is linked to real estate and the use of electric vehicles more than changes in the production process, which explain why we are not selecting the stock today.

Exhibit 19: Chemicals companies investing in their green transition

OCI, BASF and CF Industries

**Bloomberg
ticker****Region Company ESGMeter Green projects**

OCI NA	EU	OCI Global	High	<p>Greenfield Texas blue ammonia project (1.1mn tonnes capacity at a capex of c.US\$1bn) expected to start up in early 2025. Piling for the ammonia plant completed, foundation and civil work under way.</p> <p>Rotterdam ammonia import terminal's throughput capacity to increase to 1.2mn tonnes from 0.4mn tonnes by Q1 2024 at a capex of US\$20mn.</p> <p>Production of DEF/AdBlue expected in the Netherlands in Q1 2024, a non-hazardous aqueous urea solution consisting of c.67.5% deionized water and c.32.5% urea.</p> <p>IFCo CCS (carbon-capture and storage) Phase 1 to be completed in 2025. Carbon capture and storage site of a 450KTA of CO₂ in Iowa.</p> <p>Gasification at BioMCN in the Netherlands to produce sustainable methanol.</p> <p>#1 green methanol producer globally and fuelling the first-ever green methanol powered container ship from Korea to Europe in partnership with A.P. Moller - Maersk.</p>
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BAS GY	EU	BASF	High	<p>€4.0bn investment by 2030 to achieve climate protection targets (c10% of total Capex). Investments in new technologies and in the transformation of energy supply.</p> <p>Planned electrification of the steam generation and switch from natural gas-based to electricity-based, low-carbon production processes. Investment in the creation and optimization of Verbund structures (carbon-optimized energy supply).</p> <p>Investment in battery materials business in Schwarzheide, Germany, and Harjavalta, Finland</p>
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BofA investment Thesis

BofA analysts have a Buy rating and view the steep discount at which OCI trades as unwarranted. First, they believe the market is underestimating the intrinsic value of OCI. Second, they see a healthy outlook for nitrogen and methanol. Third, EBITDA CAGR of 40% from 2023E-25E is attractive. Fourth, its cash cost-curve position is attractive, with its MENA and US assets in the 1st quartile.

BofA analysts think the market is overlooking the partial energy hedge BASF possesses in its portfolio through its 73% ownership of Wintershall - the upstream oil and gas business. While high energy prices (or physical gas shortages) could severely squeeze the profitability of the chemicals business, the upstream oil & gas assets are generating record cash flows. If BASF is able to upstream dividends from Wintershall (in view of sanctioned partners), then its own dividend becomes a lot more secure.

Exhibit 19: Chemicals companies investing in their green transition

OCI, BASF and CF Industries

Bloomberg

Bloomberg ticker	Region	Company	ESGMeter	Green projects	BofA investment Thesis
				Construction of recycling facility for precious metal in China, construction of a cathode active materials plant in Germany, construction of a battery recycling prototype plant in Germany	
				Development of new technologies for Carbon-free and low-carbon production, focusing on basic chemicals	
				Test of electric heating system for cracking process, using renewable energy and replacing gas	
				Construction of a commercial-scale green ammonia production capability in Louisiana with US\$100mn investment to install 20MW electrolyzer.	The Buy rating on CF is driven by very tight global nitrogen supplies, which could continue from shuttered production in the EU, lower exports out of China, and strong Ag fundamentals globally. BofA analysts see limited new supplies for nitrogen globally. The Ag cycle could readily continue into 2023, which would keep nitrogen prices from falling back to 2020 lows. The long term risk is bacterial-sourced ammonia.
				Construction of a carbon dioxide dehydration and compression facility enabling CO ₂ capture. US\$200mn investment.	
				Carbon capture and sequestration (CCS) project with ExxonMobil to capture up to 2mn mt CO ₂ emissions per year (from 2025).	
CF US	US	CF Industries	High		

Source: BofA Global Research, Bloomberg

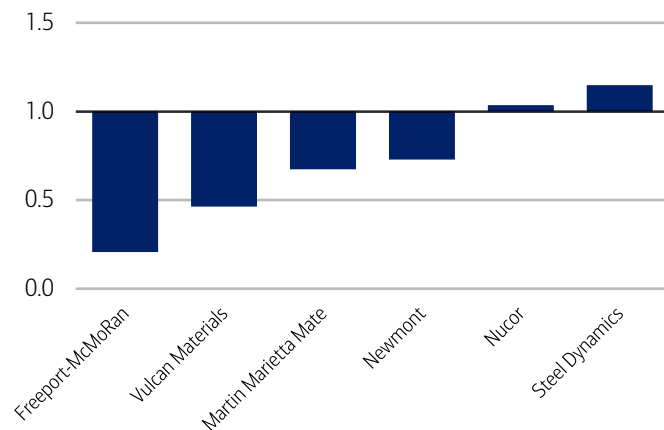
BofA GLOBAL RESEARCH

Metal, mining and building material: significantly underweighted by ESG funds**Underweighted by ESG funds in the US and Europe**

Metals, mining, and construction materials, like chemicals, are heavy CO₂ emitters. But unlike chemicals, most of the companies are underweighted by ESG funds, both in the US and in Europe. Only two stocks in the US and six in Europe are overweighted by ESG funds.

Exhibit 20: Metals, mining, and construction materials – ESG funds positioning vs. S&P500

US sector significantly underweighted

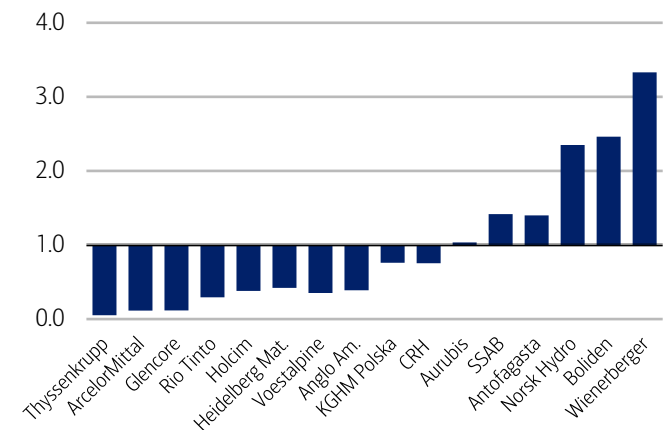


Source: Global Research, Factset Ownership, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 21: Metals, mining, and construction materials – ESG funds positioning vs. Euro Stoxx 600

Aluminium over steel and building material



Source: Global Research, Factset Ownership, Bloomberg

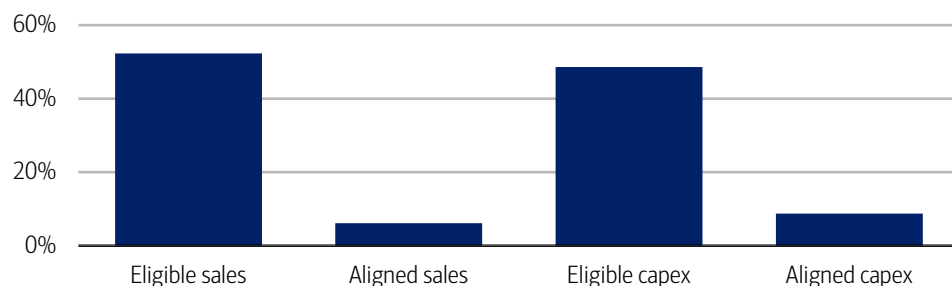
BofA GLOBAL RESEARCH

Green capex still relatively low with room for improvement

The metals, mining, and construction materials sector in Europe is, under European Taxonomy, eligible for a quite substantial part of its sales and capex (EuroStoxx600, excluding UK names). But the alignment levels remain low for both sales and capital expenditure. We would see the glass half full and highlight the potential for improvement. In the US where we lag data, BofA equity analysts estimate that only 5% of total capex is directed to green investments. The projects are mostly investment in renewable energy, and more specifically solar farms.

Exhibit 22: Europe taxonomy sales/capex – Metals, mining, and construction materials sector

Significant gap between eligibility and alignment in Europe. Should the two converge over-time?



Source: BofA Global Research estimates, company report, Bloomberg

BofA GLOBAL RESEARCH

Companies to consider in Metals, mining, and construction materials

By crossing a) Net-Zero commitment, b) GHG intensity progresses over the last four years, c) fundamental views (ie BofA Buy rating), d) underweighted by ESG funds and e) green capex projects, we identify nine Metals, mining, and construction materials companies arguably well positioned on both ESG and fundamental prospective. But UK companies are not disclosing equivalent of EU Taxonomy details on their capital expenditure (eligibility and alignment), Norsk Hydro and Nucor are already overweighted by ESG funds while the cement companies (Buzzy and CHR) are underweighted. Though the capex is not aligned, some of the companies are dedicating a meaningful part of their capex to their green transition and roadmap to reach net-zero by 2050. Initiatives are around sourcing renewable energy, carbon capture or use of water. We retained four companies.

Exhibit 23: Metals, mining, and construction materials companies investing in their green transition

Four companies in metals, mining and construction material sector

Bloomberg ticker**Region Company****ESGMeter****Green projects**

RIO LN	EU	Rio Tinto	High	<p>\$7.5bn in capital expenditure between 2022-2030 to deliver 2030 decarbonisation target, implying 1.2% green capex per year with an acceleration over 2023-2025 with \$1.5bn over three years.</p> <p>Six carbon abatement programmes to focus on decarbonisation:</p> <ul style="list-style-type: none"> - repowering Pacific Aluminium Operations with wind and solar projects, - renewables energy, - ELYSISTM and cell smelting zero-carbon aluminium - alumina process heat to decarbonise refineries and study for hydrogen calcination project - minerals processing testing ilmenite pre-reduction process, and, - diesel transition for trolleys and trucks <p>Decarbonisation of the Pilbara electricity system using solar technology, storage and transmission (2023-26)</p>
AAL LN	EU	Anglo American	High	<p>Capex of \$0.1bn to \$0.3bn p.a (1.7% to 5.2% of total capex) spent in technology and innovation to drive improvements in efficiency and the sustainability of the business. Projects includes "hydraulic dewatered stacking", renewable energy ecosystem or hydrogen truck technology.</p> <p>Step-up of Investment on power generation infrastructure to fund the target of > 60% of renewable electricity supply sourced from 2025.</p> <p>Project to enhance water supply in Chile with the construction of a desalination plant. Target of more than 45% water needs supplied for Los Bronce copper site.</p>
CRH LN	EU	CRH	High	<p>Plan to reduce carbon emissions during cement and lime manufacturing, using minerals to absorb CO₂ and enhance climate resilience.</p> <p>\$150m of incremental capex per year to deliver its 2030 decarbonisation roadmap (5% of total capex)</p> <p>Investment in Carbon Capture and Usage and Storage (CCUS) projects.</p>

BofA investment Thesis

RIO is positioning itself as the diversified miner with the highest ROCE and cash distributions to shareholders, pointing to its record to date and a strategy that demands limited incremental capital to drive modest production growth. BofA analysts see RIO broadly as a 'Blue Chip' and steward of capital as it has solid cash flows from T1 assets and a dependable dividend yield. They are less negative iron ore on lower Brazilian supply and higher Chinese steel production, hence our Buy rating.

Anglo American's earnings are a function of the prices of its main products, platinum, copper, coal, iron ore and nickel. Shares tend to trade based on expectations for earnings. BofA analysts think Anglo's combination of price, volume and self-help are compelling. Post the recent correction, they think shares present compelling value.

BofA analysts see a positive outlook for the group's US operations as the underlying market lead indicators trend positively, in particular in the infrastructure space. The balance sheet is very solid and offers substantial upside potential in term of M&A activity and share buybacks.

Exhibit 23: Metals, mining, and construction materials companies investing in their green transition

Four companies in metals, mining and construction material sector

Bloomberg ticker**Region Company****ESGMeter****Green projects****BofA investment Thesis**

Investment in new abatement equipment.

They believe that the valuation is attractive, with the stock trading at a discount to its own historical average and to several of its building materials peers.

Creation of a \$250m venturing and innovation fund to invest in new technologies and accelerate the reduction of carbon emissions.

25% of total capex dedicated to the decarbonization of production process and performance improvements with 29% in Italy, 16% in the US. And 18% in Germany.

Projects includes the production of cement with lower clinked content, use of alternative fuels and in-house production of electricity.

Carbon capture test using Calcium Looping plant integrated in a cement plant.

BofA analysts expect Buzzi to deliver solid earnings growth on the back of strong cement prices, lower energy costs, and the roll-out of higher-margin products. Their net cash position also allows for bolt-on acquisitions, expansion/consolidation in already profitable emerging markets, increased shareholders returns and acceleration of its decarbonisation program. Buzzi currently trades on a 12m forward PE of c6x, c50% below its historical average and c40% below peers.

BZU IM EU Buzzi n/a

Source: BofA Global Research, Bloomberg

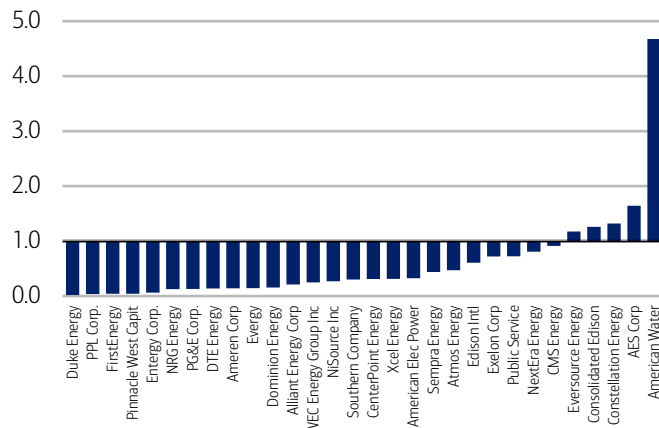
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Utilities: Europe significantly ahead of the US**Darling in Europe but unliked in the US**

As seen in Exhibit 24 and Exhibit 25, the utility sector is significantly overweighted by ESG funds in Europe but underweighted in the US. While only one Utility company is more than 100% overweighted in the US (and only five overweighted overall), we count 14 of them in Europe.

Exhibit 24: Utility – ESG funds positioning vs. S&P 500

Five consensual names in the US by ESG funds

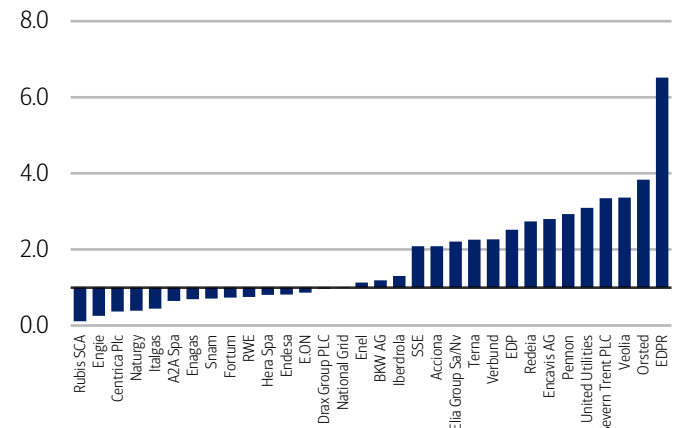


Source: EPFR Informa Financial Intelligence, BofA Global Research

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Exhibit 25: Utility – ESG funds positioning vs. Euro Stoxx 600

17 European utility companies overweighted by ESG funds



Source: EPFR Informa Financial Intelligence, BofA Global Research

BofA GLOBAL RESEARCH

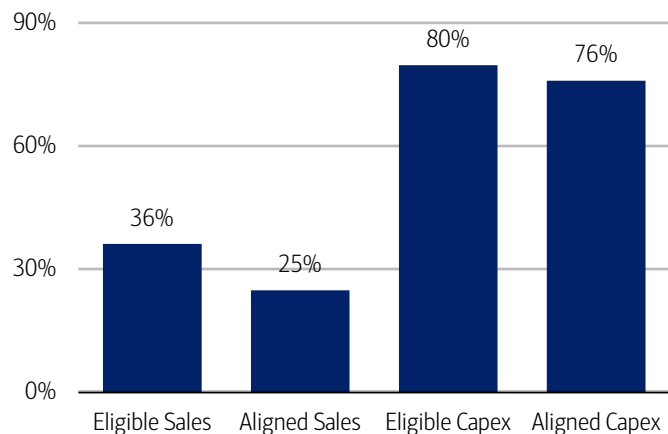
Green capex still low in the US and a key priority in Europe

The stock positioning is a good reflection of the commitment and investment of utility companies in their green transition, in our view. Investment in renewable energy, electricity networks and water facilities make it a key sector to leverage the net zero transition theme in Europe. The picture differs in the US where investment in the green transition lags compared to Europe:

- In Europe, more than 75% of the capex spent is Taxonomy aligned, making the utility sector the best in class across all European sectors. Though eligible (35%) and aligned (25%) sales are still significantly lower than capital expenditure, we believe that capex should be seen as an early indicator of higher 'green' sales over time for the European sector;

Exhibit 26: European utility – taxonomy sales/capex

More than 75% of the capex is taxonomy aligned



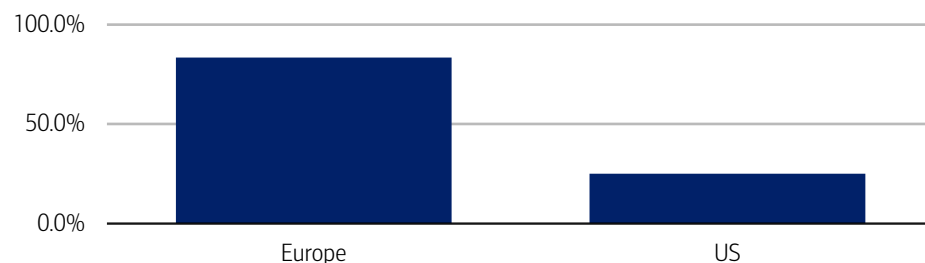
Source: BofA Global Research, company report, Bloomberg

BofA GLOBAL RESEARCH

- In the US, BofA equity analysts estimate that Electric Utility companies have 25% of their capex qualified as 'green', which compares with more than 85% in Europe for this sub-category. We unfortunately lag details for other sub-categories in US utilities.

Exhibit 28: 'green' capex for Electric Utilities

US significantly behind Europe



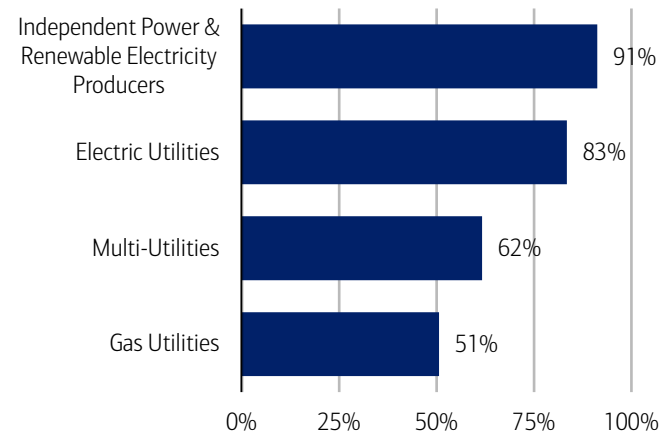
Source: BofA Global Research, company report, Bloomberg, EEl

BofA GLOBAL RESEARCH

Prospectively, we may believe that the US companies will follow the same path than European utilities, with an increasing share of capex addressing the green transition. It may however remain dependent on the US regulator and its willingness to accelerate the net-zero/climate-neutral transition. A potential change in administration post US election, late 2024, may be determinant here.

Exhibit 27: European utility – taxonomy aligned capex per sub-sector

Gas utilities lagging

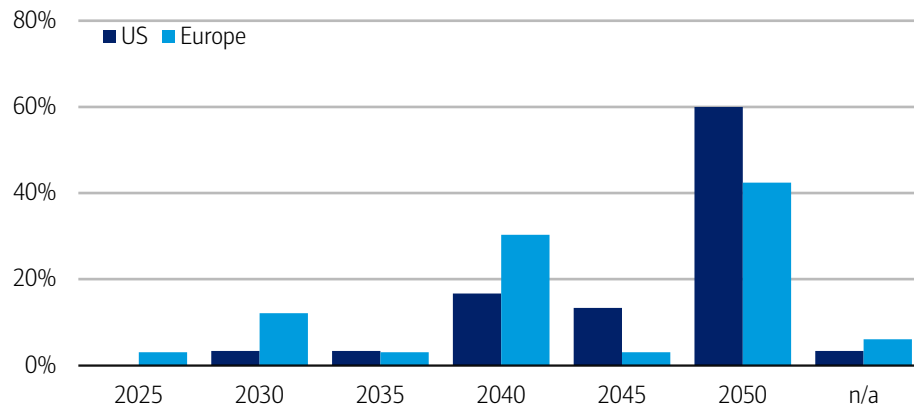


Source: BofA Global Research, company report, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 29: Net-zero target year for Utility companies

European utility companies more ambitious than their US peers



Source: BofA Global Research estimates, company report, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 30: Net-Zero target

European utilities more ambitious than US companies

	2025	2030	2035	2040	2045	2050	n/a
US		Eversource Energy	CenterPoint Energy	AES Corp CMS Energy Consolidated Edison Constellation Energy NiSource Inc	Edison Intl Eversource NextEra Energy PG&E Corp.	Alliant Energy Corp Ameren Corp American Elec Power American Water Dominion Energy DTE Energy Duke Energy Entergy Corp. Exelon Corp	FirstEnergy NRG Energy Pinnacle West Capital PPL Corp. Public Service Sempra Energy Southern Company WEC Energy Group Inc Xcel Energy
Europe	SSE	EDP Encavis AG Pennon Severn Trent PLC	Fortum	A2A Spa Acciona EDPR Elia Group Sa/Nv Enagas Endesa Enel Orsted	RWE Snam Engie	Acciona Energia BKW AG Centrica Plc Drax Group PLC E.ON Iberdrola Italgas National Grid	Naturgy Redeia Terna United Utilities Veolia Verbund Hera Spa Rubis SCA

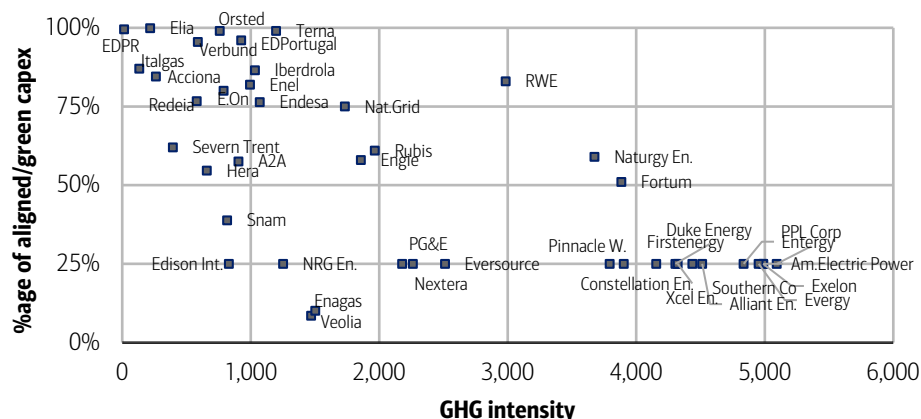
Source: BofA Global Research, company report, Bloomberg

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As already highlighted, the European utility companies spend more in their green transition than their US peers, with a significant level of taxonomy aligned capex. We may also highlight the significant lower level of GHG emission intensity that may result from their efforts to decarbonized and adapt their activities compared to US companies.

Exhibit 31: Utilities - Crossing GHG emission intensity and aligned/green capex

Heavy polluters in the US investing less in green capex than their European peers



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Companies to consider in Utilities

By crossing a) Net-Zero commitment, b) GHG intensity progresses over the last four years, c) fundamental views (ie BofA Buy rating), d) underweighted by ESG funds and e) green capex projects, we highlight E.On, RWE, and Italgas as potential improvers. We understand that RWE coal business or Italgas focus on gas are reasons why the stocks are yet non-investable by many ESG funds but we would expect the high level of green capex (>75%) and acceleration of their decarbonisation to help a re-weighting of these names.

Exhibit 32: Utility companies investing in their green transition

Some companies still underweighted because of some small and reducing legacy businesses

Bloomberg ticker**Region Company ESGMeter Green projects****BofA investment Thesis**

EOAN GY	EU	E.ON	High	<p>Target of >95% of capex to be EU Taxonomy aligned</p> <p>Upgrading boilers in the heating business</p> <p>Expansion in district heating distribution and for biofuel-fired electricity and heat cogeneration</p> <p>Investment in gas network (taxonomy aligned): expansion of hydrogen infrastructure in Germany or enabling hydrogen to be admixed to existing gas network.</p> <p>Expansion of fiber-optics and broadband technology</p>	<p>BofA analysts believe E.On's regulated networks and non-regulated energy services activities have significant long-term upside potential to growth, driven by the energy transition and policy support in both Germany and Europe. E.On also offers a relatively stable risk profile given its high share of CPI-indexed infrastructure, and potential for up to 5% dividend CAGR over the long term.</p>
IG IM	EU	Italgas	High	<p>€4.5bn investment over 2022-28 to upgrade and repurpose Italian distribution networks, accelerate digitisation of assets/processes, develop low-carbon gas integration initiatives, and complete the methanisation process in Sardinia.</p> <p>A third of the €4.5bn to be dedicated to digitisation. It includes remote control, transportation of renewable gases with the ongoing replacement of traditional reduction units (GRF); the installation of solenoid valves, sensors, actuators, digital gas chromatographs, and the gradual replacement of existing GPRS-based smart meters with NB-IOT meters.</p> <p>€100mn investments related to new biomethane connections: Power-to-Gas pilot project in Sardinia, near Cagliari, the very first application in the UE, the design and development of a new generation hydrogen smart meter, the development of bi-REMI cabins.</p>	<p>Italgas benefits from a respected and coherent Italian regulatory framework that affords multi-year visibility, inflation indexation of RAB and allowed opex and potential for a positive revision to allowed return in 2024E, all of which are supportive for regulated earnings. Links to Italian GDP are minimal. Delayed gas distribution tenders are well known and still represent a latent domestic growth opportunity, in BofA analysts' view.</p>
RWE GY	EU	RWE	Medium	<p>€55bn net investment 2024-30 in wind farms, photovoltaic assets, battery storage, gas fired power plants and electrolyzers the hydrogen economy. Target to exceed 65GW green energy capacity by 2030.</p> <p>Offshore wind: from 3.3 GW pro-rata capacity at the end of 2022 to 10GW by 2030 with advanced projects in the UK, US and Europe with</p>	<p>BofA analysts believe that RWE is one of the most undervalued companies among the pure and hybrid renewables developers. They see potential for an underlying 14% 2021-30E Core EBITDA CAGR and 8% 2023-30E DPS CAGR, yet they believe the stock is trading below the NAV of its existing assets. It also has significant near-term</p>

Exhibit 32: Utility companies investing in their green transition

Some companies still underweighted because of some small and reducing legacy businesses

Bloomberg**ticker Region Company ESGMeter Green projects**

associated seabed rights secured. Longer-term options to develop floating wind turbine projects operated in deep waters.

Offshore wind: from 3.3 GW pro-rata capacity at the end of 2022 to 10GW by 2030 with advanced projects in the UK, US and Europe with associated seabed rights secured. Longer-term options to develop floating wind turbine projects operated in deep waters.

Onshore wind/solar capacity to increase from 8.0 GW to 30GW by 2030, mostly driven by solar since the acquisition of Con Edison Clean energy Businesses.

Battery storage to increase to 6GW capacity (from 0.3 GW) by 2030 coupling renewable energy production with energy storage.

Investment in gas-fired power station to facilitate the coal phaseout and the aim to operate gas-fired power station using green hydrogen longer term. Plan to develop carbon capture when need be.

BofA investment Thesis

earnings upside from higher power prices. They believe potential permanent separation or at least the accelerated closure of its coal business could support longer-term rerating.

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Energy

The energy sector, mostly oil & gas, and equipment & services companies, is still significantly behind on its green investment, compared to other heavy polluting sectors. The recent announcement at the COP28 of the “transition away from fossil fuels” may however challenge the sector and forces for rapid changes.

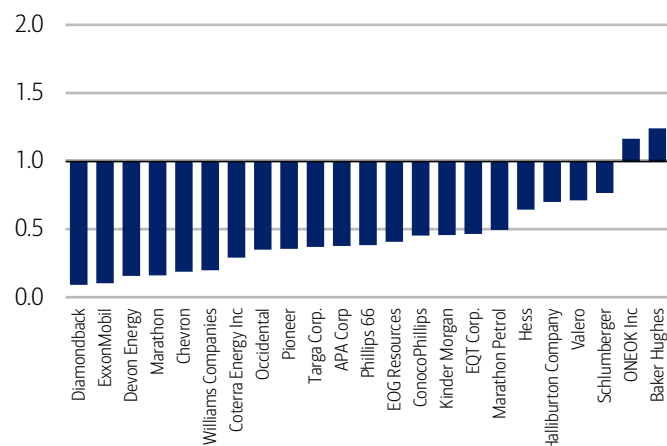
BofA analyst believes that within Big Oils 'decarbonisation toolbox', Renewables is the top tool to a longer-term re-rating (see: [The Oil Gusher #573: COP28: \(Du\)bai-bye to fossil fuels? 15 December 2023](#)), with upside for those companies leading the energy transition and successfully shifting from Big Oil to Big Energy.

Underweighted by ESG funds in the US and Europe

The energy sector is a heavy CO₂ emitter and both, European and US ESG funds, have a very low exposure to it.

Exhibit 33: Energy – ESG funds positioning vs. S&P 500

Only two US energy companies overweighted by ESG funds

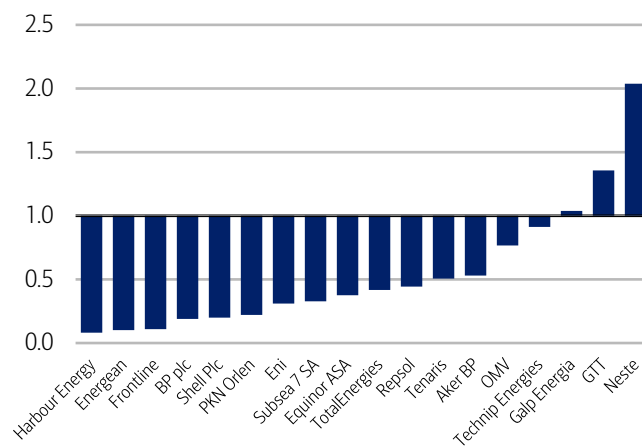


Source: EPFR Informa Financial Intelligence, BofA Global Research

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Exhibit 34: Energy – ESG funds positioning vs. Euro Stoxx 600

Only three European energy companies overweighted by ESG funds



Source: EPFR Informa Financial Intelligence, BofA Global Research

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Green capex still relatively low

Energy companies have been progressively and increasingly spending capex on renewable energy. But green capex remains a small share of the overall capex, despite companies adopting 2050 net-zero target. European companies are ahead of their US peers with 88% of Euro Stoxx 600 energy companies targeting Net-Zero by latest 2050, versus 65% for US stocks (S&P 500). Within the US, some of the companies have no plan to engage in transition or adaptation.

Exhibit 35: Net-Zero target

Most Energy companies targeting 2050; and still some lack of commitment from US companies

	2025	2030	2035	2040	2050	n/a
US	EQT Corp.		Valero	EOG Resources	Baker Hughes Chevron ConocoPhillips Devon Energy ExxonMobil Hess Kinder Morgan Occidental Phillips 66 Pioneer Schlumberger Williams Companies	APA Corp Coterra Energy Inc Diamondback Halliburton Company
Europe	GTT	Equinor ASA Harbour Energy Technip Energies	Neste	Aker BP BP plc Energean Eni Galp Energia OMV	PKN Orlen Repsol Shell Plc Subsea 7 SA TotalEnergies	Tenaris Frontline plc
						Marathon Marathon Petrol ONEOK Inc Targa Corp.

Source: BofA Global Research, company report

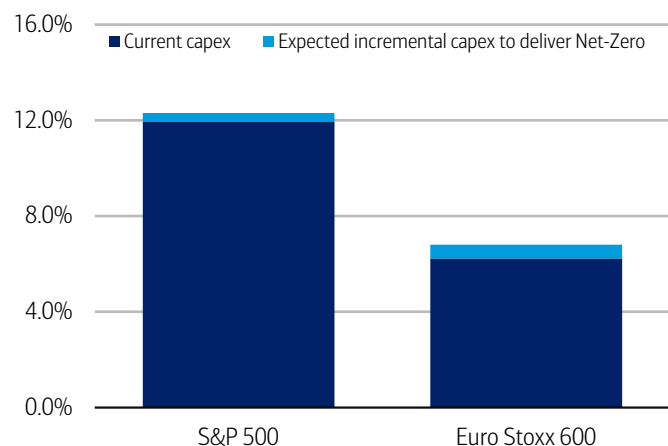
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Investment in carbon capture and renewable fuels are the main investments from energy companies. And most decarbonization plans for oil & gas companies will be through carbon offset, buying carbon credit and investing in natural carbon sinks (ocean, plant, and forest).

When being asked about capex required to deliver net-zero target, BofA equity analyst see limited incremental requirements. As such, energy companies are already spending enough to adapt, for the one who are committed to a net-zero target.

Exhibit 36: Capex spent in percentage of sales

Net-Zero target does not seem to drive incremental capex for the energy sector

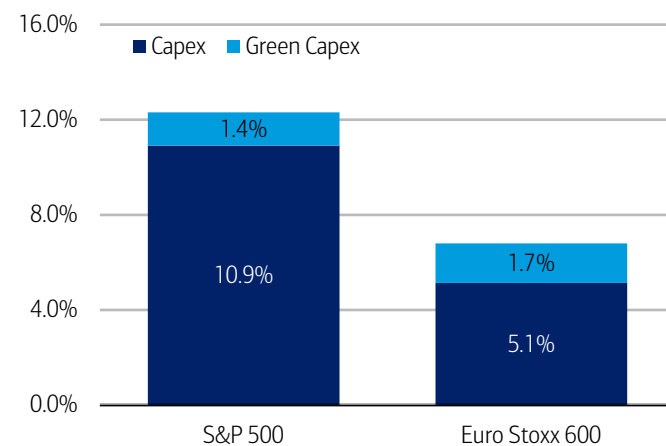


Source: BofA Global Research estimates, Bloomberg

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Exhibit 37: Capex breakdown, green versus non-green

Green capex in energy sector to remain relatively low



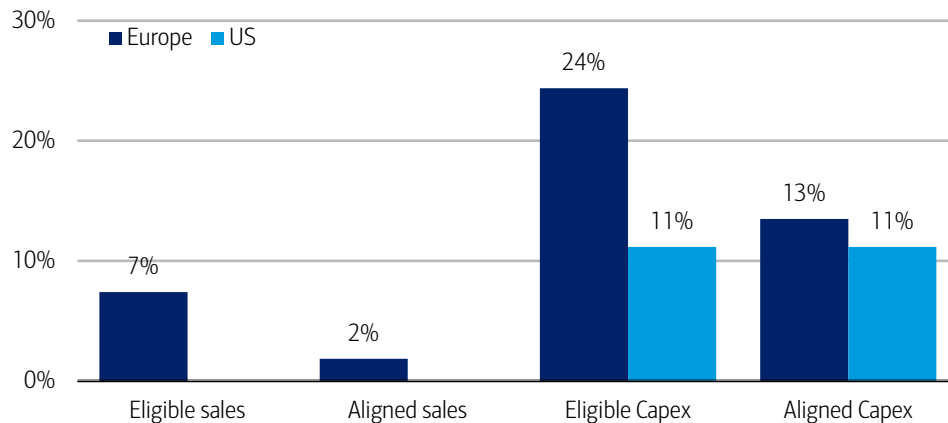
Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Though US companies are spending almost twice as much capex as European companies (in percentage of sales), European companies spend on average 13% of their capex in the green transition (aligned capex) compared to 11% for US stocks (BofA est.).

Exhibit 38: Energy 'Green' sales and capex

Small positive advantage for European companies



Source: BofA Global Research estimates, company report, Bloomberg

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GHG intensity (scope 1&2) is not a determinant factor for oil & gas companies in defining green capex. Energy Equipment & Services companies are above the Energy sector average while most oil & gas companies are below a 30% green capex threshold.

Exhibit 39: Energy - Crossing GHG emission intensity and aligned/green capex

Energy Equipment & Services companies spending more for their transition than Energy companies

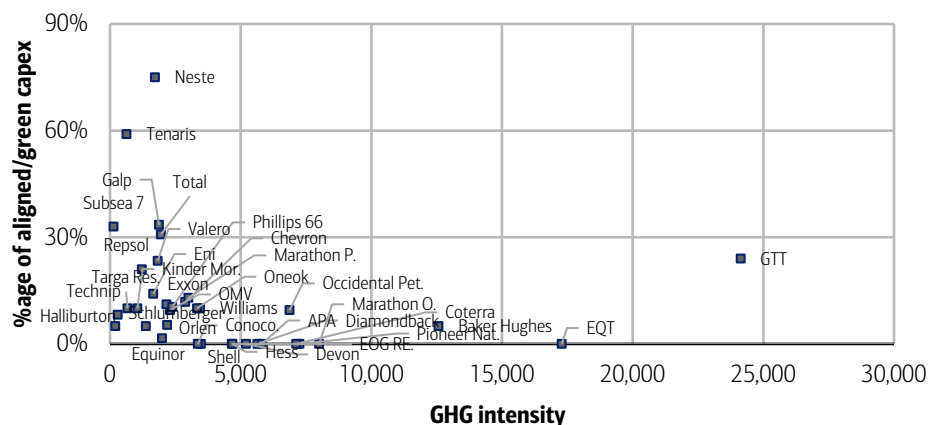


Exhibit 40: Energy companies investing in their green transition

More investment in low carbon solution and carbon capture

**Bloomberg
ticker****Region Company****ESGMeter Green projects****BofA investment Thesis**

				<p>Plan to increase Integrated Power production from >35TWh today to >110TWh by 2030</p> <ul style="list-style-type: none"> Renewables growth via investments around the world (including the US, Germany, France, UK, Taiwan, India), helped by the recent \$1.5bn buyout at Total Eren Employ industrial activities of fully owned Saft subsidiary to drive investment in battery energy storage capacity with a target of 5GW by 2030 <p>Development of more than 10 Mt/y CCS capacity by 2030 with US\$300m investment p.a. from 2023 onward</p> <ul style="list-style-type: none"> One of three partners in Europe's first commercial-scale CCS project (Northern Lights in Norway) Cooperation in the Netherlands with Yara to capture, compress and liquify CO₂ before storage Plan to supply combined-cycle gas turbine with bio-methane or low-carbon hydrogen or to sequester emission through carbon capture and storage (CCS) 	<p>BofA analysts like TotalEnergies's more defensive profile, thanks to a higher-quality portfolio (lower breakeven oil price, coupled with longer-cycle Upstream portfolio) and TotalEnergies's well-funded balance sheet (21% gearing by year-end 2022 even after treating hybrid bonds as debt).</p> <p>They see attractive upside potential on both an absolute basis and compared to peers on our preferred metric of FCF yields.</p>
TTE FP	EU	TotalEnergies	High	<p>Development of biomethane production units: BioBéarn unit with 160 GWh capacity in France, project under construction in the US with Clean Energy</p> <p>Transform service stations into multi-energy hubs with high-power EV charge points and hydrogen</p> <p>Launch in September 2022 of a two-year US\$1bn plan to accelerate energy efficiency initiatives with the target of c.2 Mt CO₂e savings across oil and gas operations</p> <p>Investments to decarbonize hydrogen used in European refineries, e.g. green hydrogen project at La Mède biorefinery in France, in partnership with Engie</p> <p>Building with Air Liquide a system using circular integration of production and valorisation of renewable hydrogen in France</p> <p>Investment of US\$100m p.a. to develop a natural carbon sink capacity of 5-10 Mt/y by 2030.</p> <p>Projects include large-scales inclusive forestry and agricultural management projects in the Republic of Congo and Gabon, and a participation in the Tropical Asia Forest Fund 2 (TAFF2).</p>	
XOM US	US	Exxon Mobil Corp		<p>Worldwide environmental expenditures to increase to approximately \$8.2bn for 2024, with c51% for Capex, ie 17% of total group capex (American Petroleum Institute definitions and guidelines).</p> <p>Focus on three low carbon solutions: carbon capture and storage, hydrogen, and lower-emission fuels.</p> <p>Target of >10% return on investment for low carbon solutions.</p> <p>Goal of supplying 200,000 barrels per day of lower-emission biofuels by 2030.</p> <p>Strathcona renewable diesel project using low-carbon hydrogen produced with carbon capture and storage technology reached final investment decision in January 2023.</p> <p>Project in Louisiana to capture, transport, and permanently store up to 2mn metric tons of third-party CO₂ per year to begin in 2025 (equivalent of replacing 700,000 gasoline-powered cars with electric vehicles).</p> <p>Commercial agreement with CF Industries in Carbon Capture and Storage. Project in Baytown (Texas) to produce 1bn cubic feet of low-carbon hydrogen per day by 2027/2028 using carbon storage with more than 98% of the associated CO₂ produced by the facility to be captured and permanently stored.</p>	<p>BofA analysts believe ExxonMobil is poised for a relative recovery after several years of lagging performance.</p> <p>The starting point is a step change in upstream portfolio leverage that they believe has been masked by the collapse in oil prices.</p> <p>Since 2013, XOM has started over 30 major projects with improved cash margins versus the legacy base business, and enabled by higher oil leverage that was masked by the coincident drop in oil prices.</p>
CVX US	US	Chevron Corp		<p>\$510bn capex over 2021-28 in low carbon energy with 20% in lowering carbon intensity of traditional oil and gas operations, and 80% in renewable fuels, hydrogen and carbon capture and offsets.</p> <p>\$2.0bn lower carbon capex target in 2023 across all segments totals of which \$0.5bn to reduce carbon intensity of traditional operations and \$1.0bn to increase renewable fuels production capacity; c.14% of capex planned for 2023.</p> <p>Project in Australia to assess carbon storage.</p> <p>Investment in Aurora Hydrogen, a company developing emission-free hydrogen production technology.</p>	<p>BofA analysts see CVX as having de-risked its portfolio via its most recent acquisition of a best in class asset in Guyana.</p> <p>With growth, oil leverage and dividend capacity restored we see a floor under CVX's relative underperformance positioning the company to perform well in the future.</p>

Exhibit 40: Energy companies investing in their green transition
More investment in low carbon solution and carbon capture

Bloomberg ticker	Region	Company	ESGMeter Green projects	BofA investment Thesis
			<p>Project to develop the Bayou Bend Carbon Capture and Sequestration (CCS) hub in the US through a JV. Target of being the first offshore CCS projects in the US.</p> <p>JV in the US with Bunge North America to develop renewable fuel feedstocks, with Baseload Capital to develop geothermal projects, with California Bioenergy to build infrastructure for the company’s dairy biomethane projects in California</p> <p>Project with Raven SR Inc. and Hyzon Motors to produce hydrogen from green waste in the US.</p> <p>Agreements or investments in companies to access and possibly develop lower carbon technologies.</p>	
OXY US	US	Occidental Petroleum Corp	<p>c. 12% of capex in low-carbon businesses, technologies, and net-zero pathway advancements, including pore space.</p> <p>Agreement with NET Power to build its first utility-scale natural gas power plant with near-zero emissions. Target be online by 2026.</p> <p>Construction on the first Direct Air Capture (DAC) plant in Texas with a planned capacity of 500,000 metric tons. To begin commercial operations in 2025.</p> <p>Securing pore space and land for carbon sequestration hubs to store captured CO₂ from DAC and industrial facilities.</p>	<p>Our Buy rating on OXY reflects a preference for defensive oil where unhedged revenue can transfer value from debt to equity holders</p>

Source: BofA Global Research

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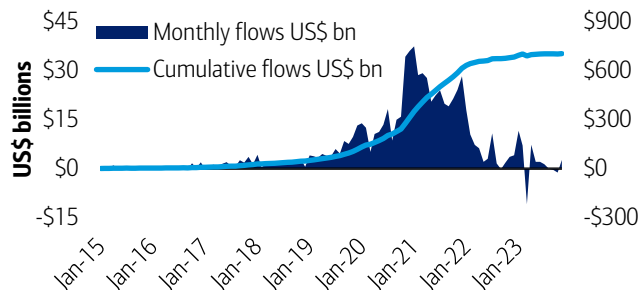
Where money is going: ESG flows/AUM

Global ESG funds

Equity fund flows

Exhibit 41: In November, Global ESG funds saw inflows of \$2.6bn, while non-ESG funds saw inflows of \$15.5bn

Global ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), 1/2015-11/2023

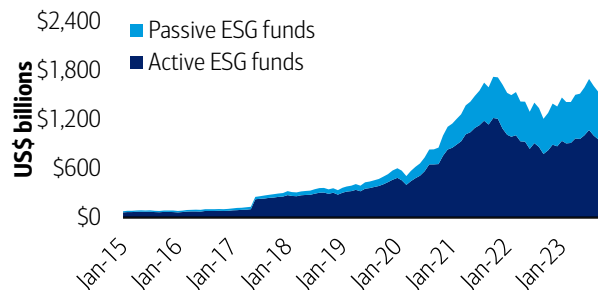


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 42: In November, global active ESG funds AUM grew 8.9% MoM, while passive ESG funds AUM grew 10.5% MoM

Assets under management in Global ESG equity funds, US\$ billions (1/2015-11/2023)

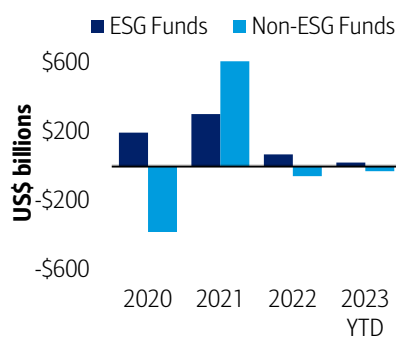


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 43: Fund flows have been positive for ESG but negative for non-ESG YTD

Global equity ESG and non-ESG fund flows (US\$ bn), 1/2015-11/2023

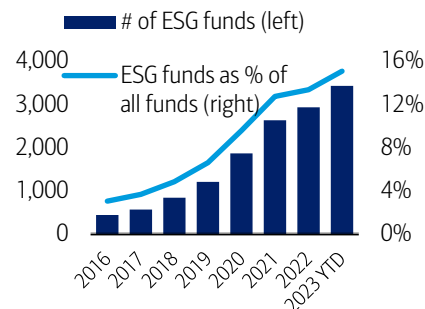


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

BofA GLOBAL RESEARCH

Exhibit 44: 1 in 7 funds is an ESG fund

Count of Global equity ESG funds, percent ESG funds of total Global equity funds (right), 1/2015-11/2023

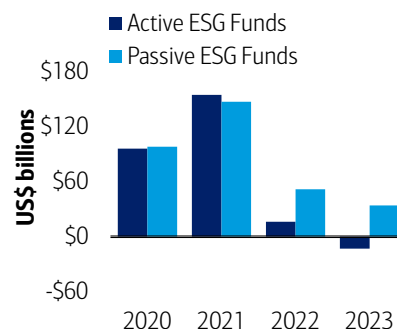


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

BofA GLOBAL RESEARCH

Exhibit 45: Globally, passive ESG funds continue to see inflows, but active ESG funds have seen net outflows YTD

Global equity ESG fund flows, 1/2015-11/2023



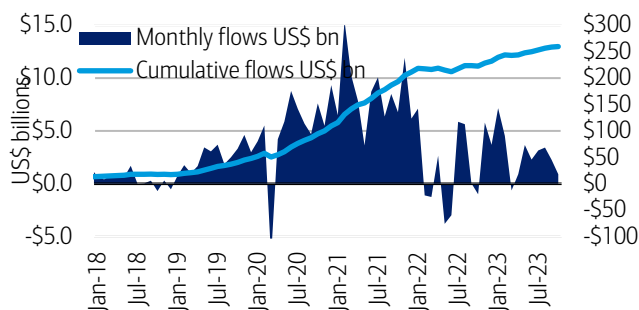
Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Bond fund flows

Exhibit 46: Global ESG bond funds recorded \$27.6bn in inflows YTD

Cumulative inflows to Global ESG bond funds reached \$260bn

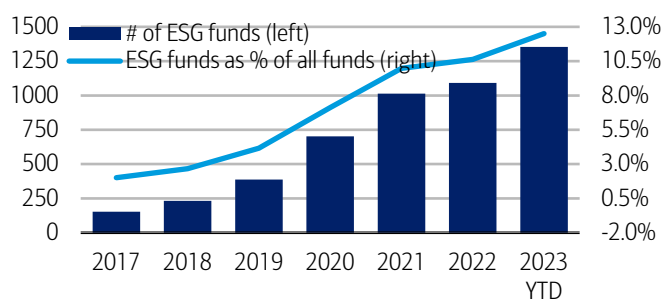


Source: EPFR Global, BofA Global Research

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Exhibit 47: 12.5% of global bond funds is an ESG fund in Oct 2023

The total number of ESG bond funds was 1,354 as of Oct 2023



Source: EPFR Global, BofA Global Research

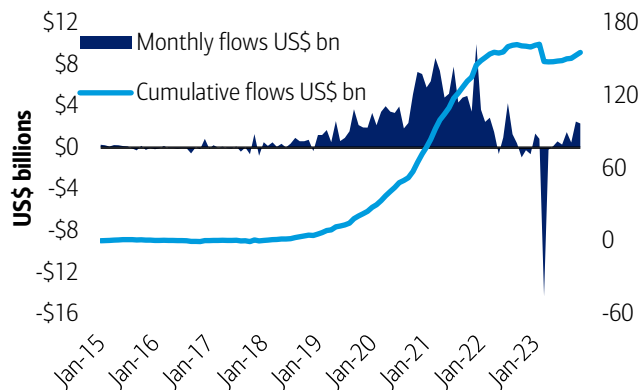
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North America-focused ESG funds

Equity fund flows

Exhibit 48: In November, both US ESG and non-ESG funds saw inflows (\$2.3bn and \$22.3bn, respectively)

US ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), 1/2015-11/2023

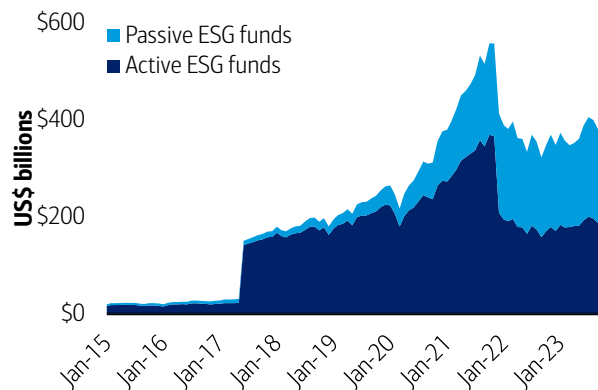


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 49: In November, US active ESG funds AUM grew 9.1% MoM while passive ESG funds AUM grew 11.5% MoM

Assets under management in US ESG equity funds, US\$ billions (1/2015-11/2023)



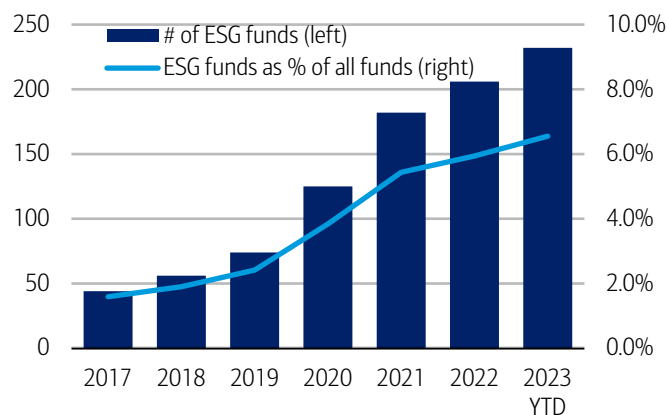
Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Bond fund flows

Exhibit 50: Today 6.6% of N America bond funds are ESG funds

The number of N America ESG funds grew by 26 YTD

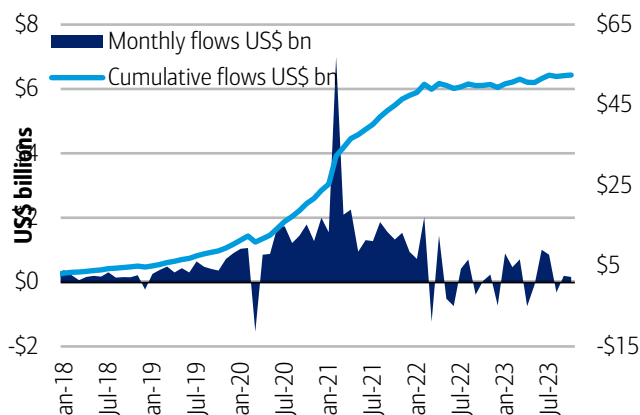


Source: EPFR Global, BofA Global Research

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Exhibit 51: Just \$3.1bn inflows to N American ESG bond funds YTD

N America ESG bond funds flows were mixed in 2023, but net positive



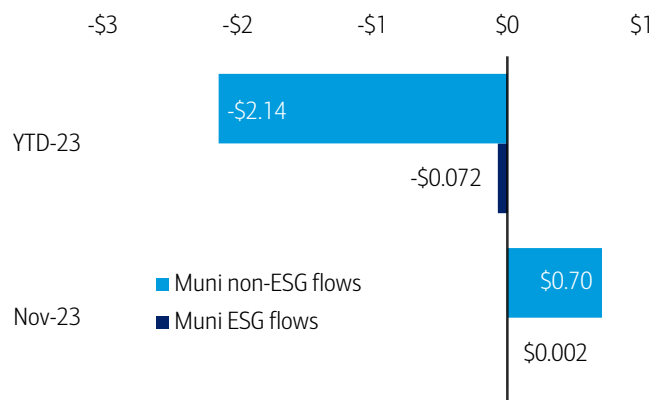
Source: EPFR Global, BofA Global Research

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Muni bond fund flows

Exhibit 52: Muni ESG vs. Muni non-ESG fund flows (\$bn)

Inflows for both muni ESG and non-ESG funds in November



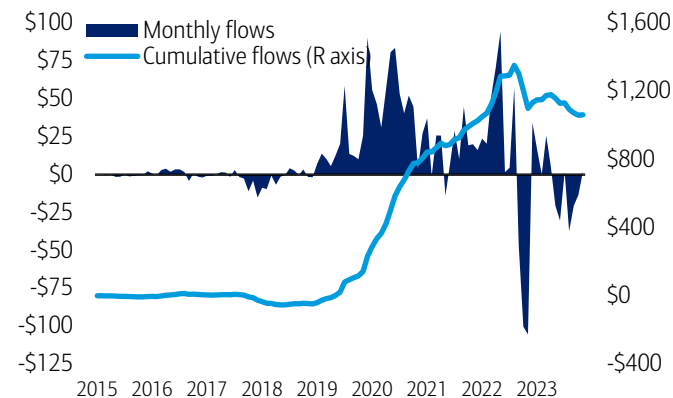
Note: Includes funds that report daily, weekly, and monthly. Data as of 30 November 2023.

Source: EPFR Global

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Exhibit 53: Muni ESG fund monthly fund flows (\$mn)

\$2.0mn of inflows for November



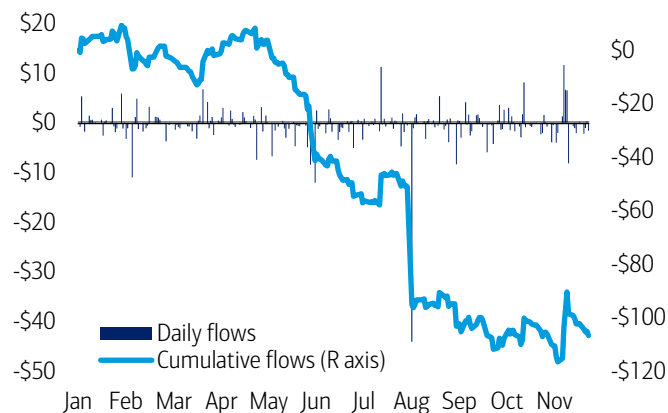
Note: Includes funds that report daily, weekly, and monthly. Data as of 30 November 2023.

Source: EPFR Global

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Exhibit 54: Muni ESG daily fund flows YTD-23 (\$mn)

Muni ESG daily fund flows totaled \$0.4mn in November



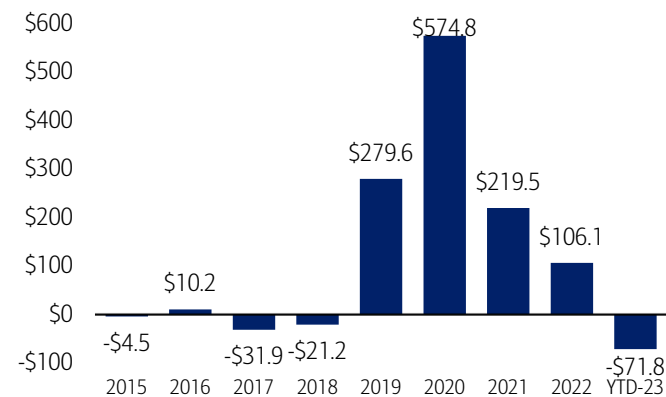
Note: Includes funds that report daily. Data as of 30 November 2023.

Source: EPFR Global

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Exhibit 55: Annual muni ESG flows (\$mn)

Inflows began weakening in 2021; outflows for YTD-23



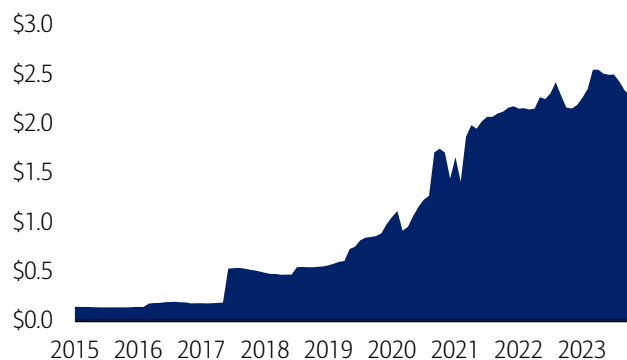
Note: Includes funds that report daily, weekly, and monthly. Data as of 30 November 2023.

Source: EPFR Global

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Exhibit 56: AUM in muni ESG funds (\$bn)

\$2.4bn of AUM in muni ESG funds as of November 2023



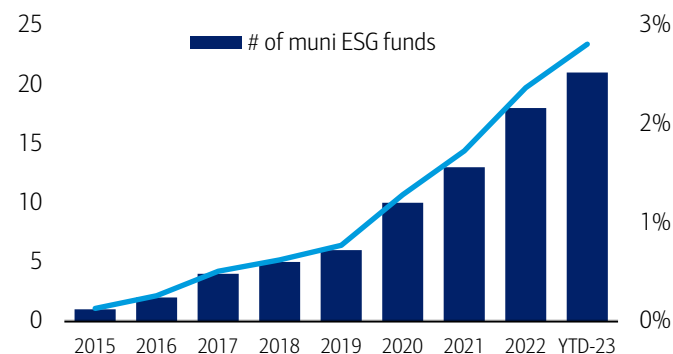
Note: Includes funds that report daily, weekly, and monthly. Data as of 30 November 2023.

Source: EPFR Global

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Exhibit 57: Count of muni ESG funds

21 muni ESG funds for YTD-23, up from just one in 2015



Note: Includes funds that report daily, weekly, and monthly. Data as of 30 November 2023.

Source: EPFR Global

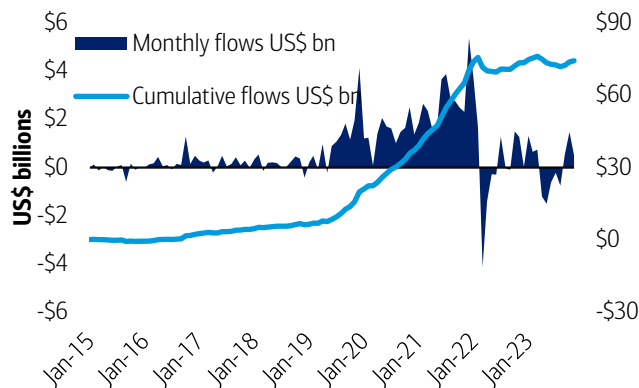
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Europe-focused ESG funds

Equity fund flows

Exhibit 58: In November, Europe ESG funds saw inflows of \$0.5bn, while non-ESG funds saw outflows of -\$5.1bn

Europe ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), 1/2015-11/2023

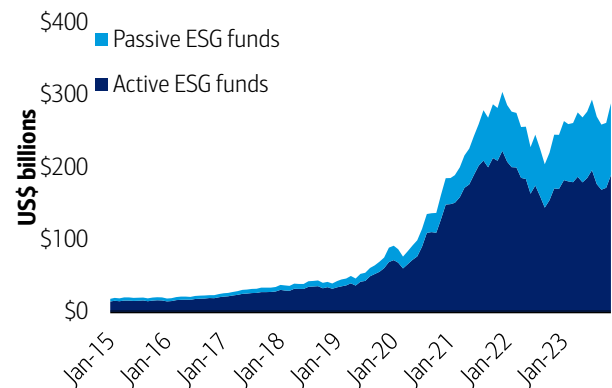


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 59: In November, Europe active ESG funds AUM grew 10.2% MoM while passive ESG funds AUM grew 10.4% MoM

Assets under management in Europe ESG equity funds, US\$ billions (1/2015-11/2023)



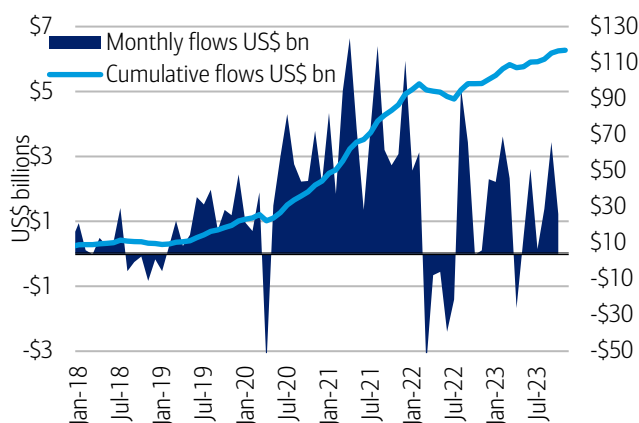
Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Bond fund flows

Exhibit 60: Europe ESG bond funds saw \$14bn in inflows in 10M23

Cumulative flows into European ESG funds have reached \$117bn

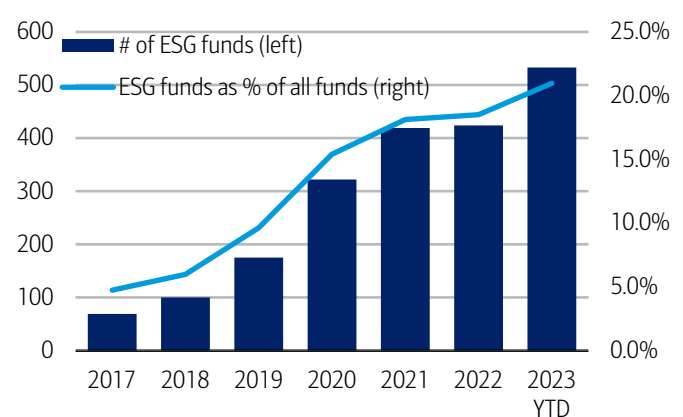


Source: EPFR Global, BofA Global Research

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Exhibit 61: 21% of European bond funds are ESG funds in Oct 2023

The total number of ESG funds rose by 109 in 2023



Source: EPFR Global, BofA Global Research

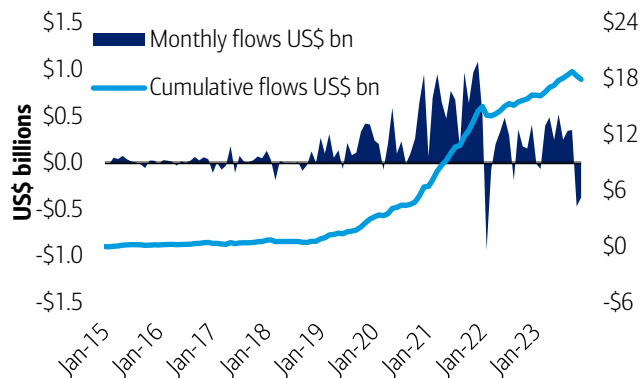
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Developed Asia-focused ESG funds

Equity fund flows

Exhibit 62: In November, Developed Asia ESG funds saw outflows of -\$0.4bn, while non-ESG funds saw outflows of -\$6.1bn

Developed Asia ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), 1/2015-11/2023

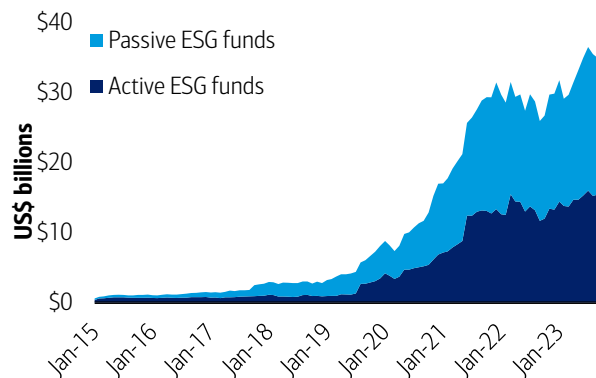


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 63: In November, Developed Asia active ESG funds AUM grew 7.0% MoM while passive ESG funds AUM grew 6.6% MoM

Assets under management in Developed Asia ESG equity funds, US\$ billions (1/2015-11/2023)



Source: EPFR Informa Financial Intelligence, BofA US ESG Research

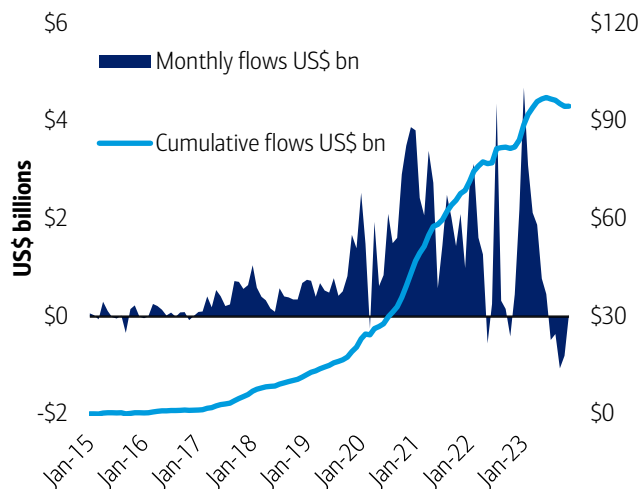
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Emerging Markets-focused ESG funds

Equity fund flows

Exhibit 64: YT-November, Emerging Markets ESG funds have seen inflows of \$10.3bn, while non-ESG funds saw inflows of \$82.3bn

Emerging Markets ESG equity funds flows (US\$bn, left) and cumulative ESG flows (US\$bn, right), 1/2015-11/2023

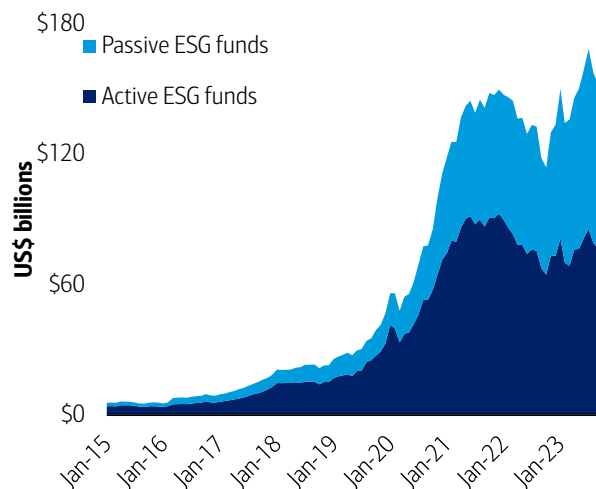


Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Exhibit 65: In November, Emerging Markets active ESG funds AUM grew 4.7% MoM while passive ESG funds AUM grew 7.7% MoM, 0.4% QoQ, 38.7% YoY

Assets under management in Emerging Markets ESG equity funds, US\$ billions (1/2015-11/2023)



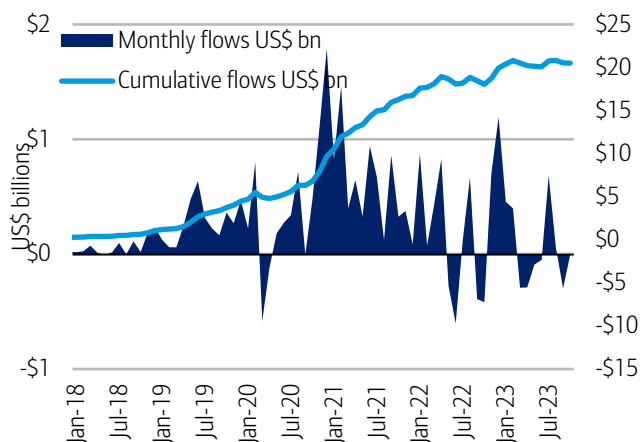
Source: EPFR Informa Financial Intelligence, BofA US ESG Research

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Bond fund flows

Exhibit 66: EM ESG bonds funds recorded \$573mn in inflows in 10M23

EM non-ESG funds saw significant outflows of \$26bn in 10M23

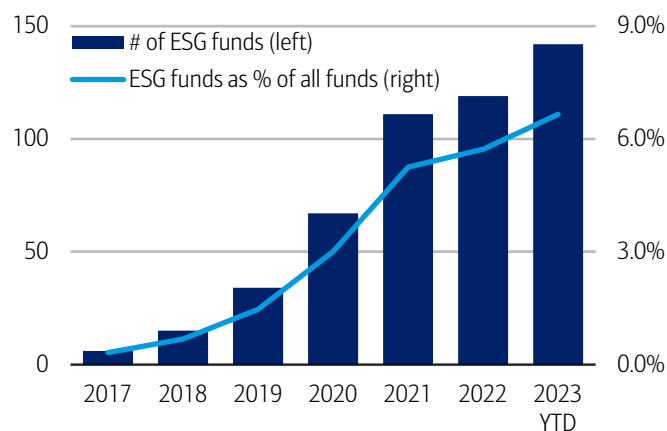


Source: EPFR Global, BofA Global Research

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Exhibit 67: 6.7% of EM bond funds is an ESG fund as of Oct 2023

EM ESG bond funds rose by 23 to 142 YTD



Source: EPFR Global, BofA Global Research

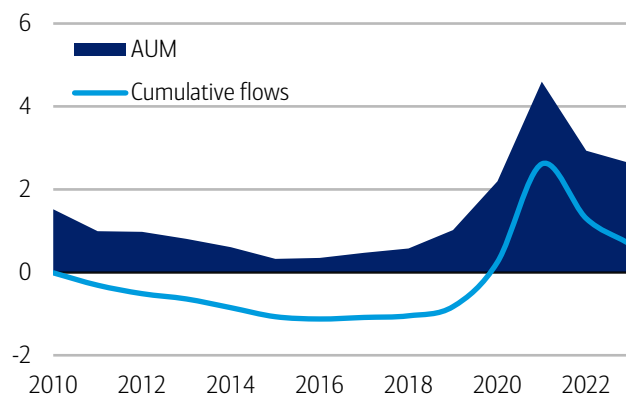
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LatAm-focused ESG funds

Equity fund flows

Exhibit 68: Brazil local ESG funds AUM and Flows (R\$bn)

AUM and flows are declining since 2022

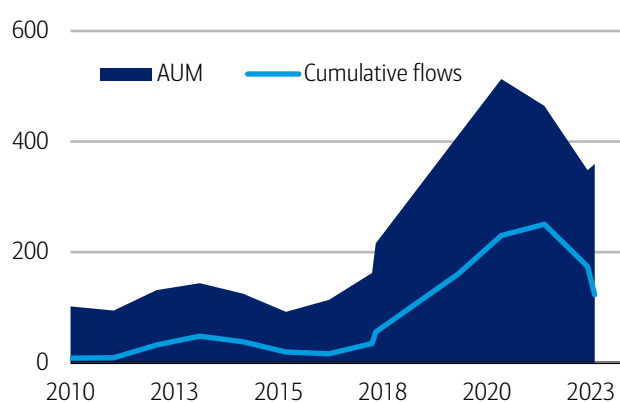


Source: BofA Global Research, Economática

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Exhibit 69: Local equity funds AUM and Flows (R\$bn)

... but AUM remains modest compared to total equity funds



Increase in total assets reflects flows, performance and funds added to the sample.

Source: BofA Global Research, Economática

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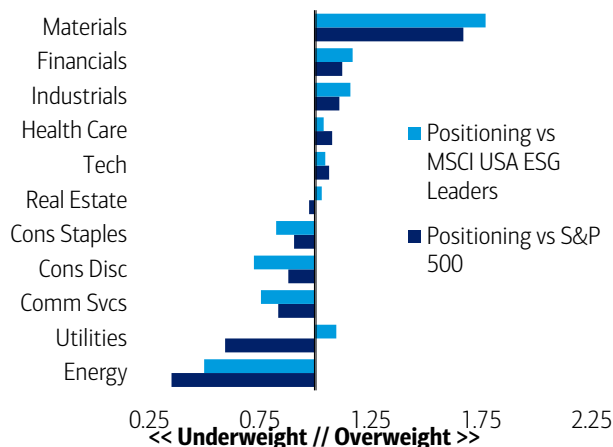
Who owns what: ESG fund ownership

We analysed the ownership of 1000+ ESG funds across the US, Europe & Asia to identify positioning in sectors and stocks. See Appendix for methodology plus screens of crowded and neglected stocks by ESG funds.

US

Exhibit 70: US ESG funds are most OW Materials, most UW Energy

Sectors relative weight of ESG funds vs S&P 500 index and MSCI USA ESG Leaders index, as of 11/30/2023

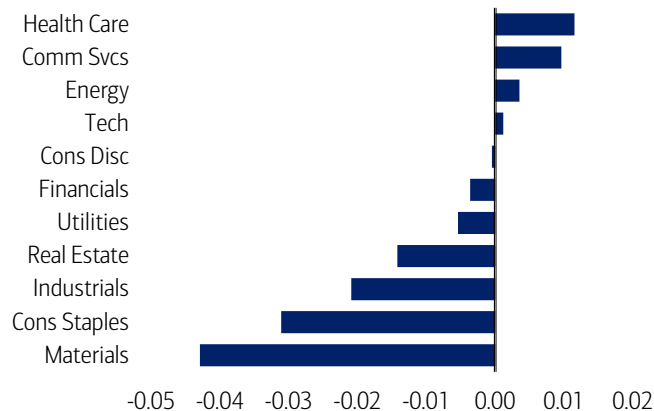


Source: BofA US ESG Research, FactSet Ownership.

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Exhibit 71: ESG funds increased Health Care exposure and decreased Materials exposure most since last month

Relative sector weight MoM changes of ESG funds vs S&P 500, 11/30/2023 vs 10/31/2023



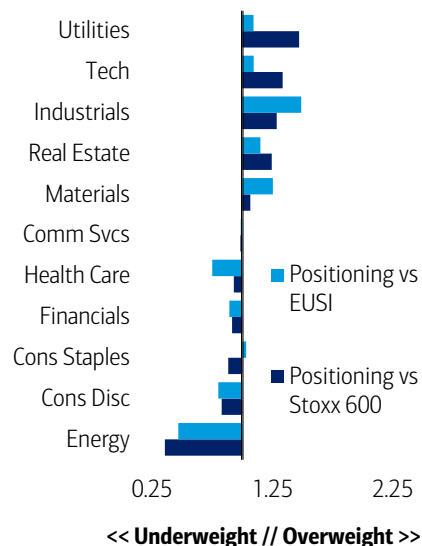
Source: BofA US ESG Research, Factset Ownership

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Europe

Exhibit 72: Europe ESG funds are most OW Utilities, most UW Energy

Sectors relative weight of ESG funds vs Stoxx 600 index and EUSI index, as of 11/30/2023

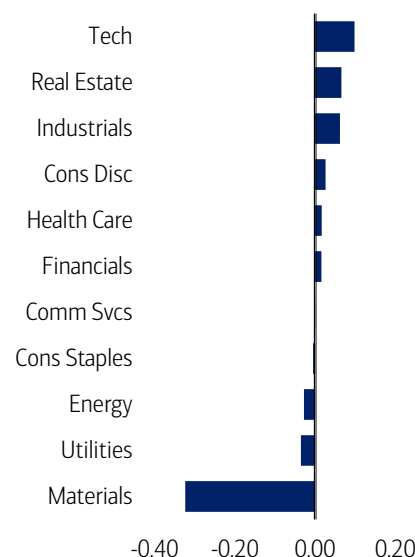


Source: BofA US ESG Research, FactSet Ownership.

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Exhibit 73: ESG funds increased Tech exposure and decreased Materials exposure most since last month

Relative sector weight MoM changes of ESG funds vs Stoxx 600 index, 11/30/2023 vs 10/31/2023

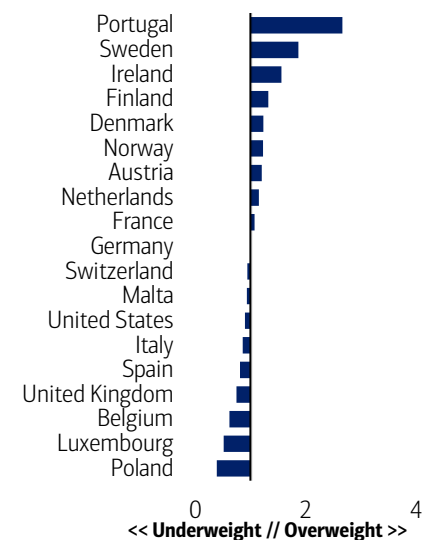


Source: BofA US ESG Research, Factset Ownership

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Exhibit 74: Europe ESG funds are most OW Portugal, most UW Poland

Countries relative weight of ESG funds vs Stoxx 600 index, as of 11/30/2023



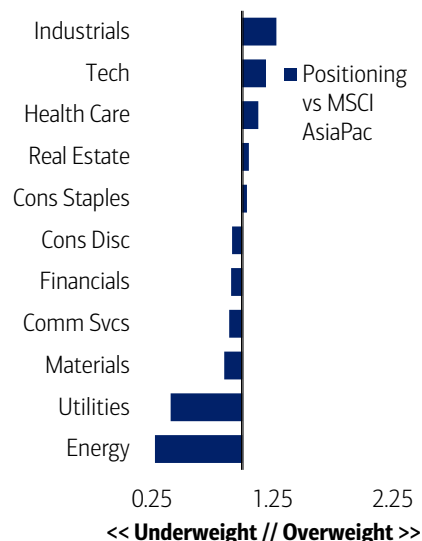
Source: BofA US ESG Research, FactSet Ownership.

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Asia Pacific

Exhibit 75: APAC ESG funds are most OW Industrials, most UW Energy

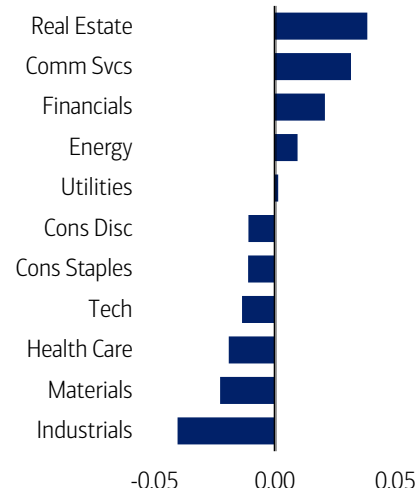
Sectors relative weight of ESG funds vs MSCI AsiaPac index, as of 11/30/2023



Source: BofA US ESG Research, FactSet Ownership.
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Exhibit 76: ESG funds increased Real Estate exposure and decreased Industrials exposure most since last month

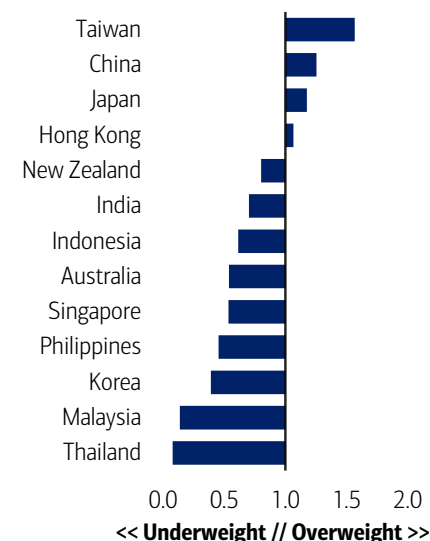
Relative sector weight MoM changes of ESG funds vs MSCI AsiaPac index, 11/30/2023 vs 10/31/2023



Source: BofA US ESG Research; FactSet Ownership
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Exhibit 77: APAC ESG funds are most OW Taiwan, most UW Thailand

Countries relative weight of ESG funds vs MSCI AsiaPac index, as of 11/30/2023

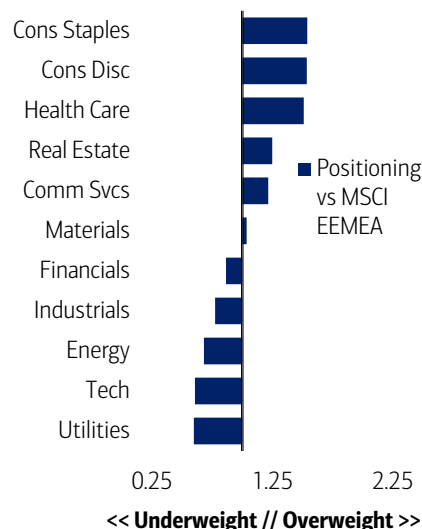


Source: BofA US ESG Research, FactSet Ownership.
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EEMEA

Exhibit 78: EEMEA ESG funds are most OW Cons Staples, most UW Utilities

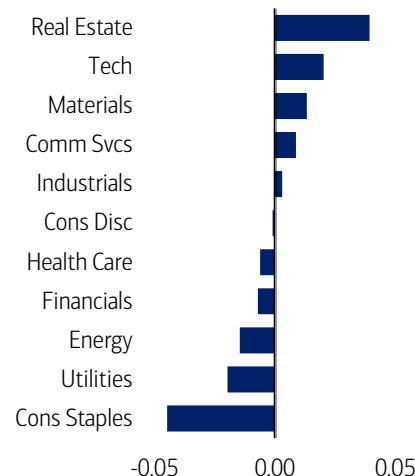
Sectors relative weight of ESG funds vs MSCI EEMEA index, as of 11/30/2023



Source: BofA US ESG Research, FactSet Ownership.
BofA GLOBAL RESEARCH

Exhibit 79: ESG funds increased Real Estate exposure and decreased Cons Staples exposure most since last month

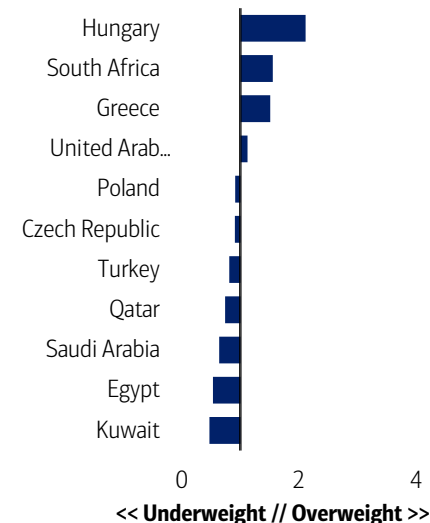
Relative sector weight MoM changes of ESG funds vs MSCI EEMEA index, 11/30/2023 vs 10/31/2023



Source: BofA US ESG Research; FactSet Ownership
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Exhibit 80: EEMEA ESG funds are most OW Hungary, most UW Kuwait

Countries relative weight of ESG funds vs MSCI EEMEA index, as of 11/30/2023



Source: BofA US ESG Research, FactSet Ownership.
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Performance: ESG returns

Exhibit 81: Main local ESG indices versus their traditional peers: 6 of 12 outperformed over last 12m

Absolute price return in local currency (%) as of 12/15/2023. Green = ESG outperformed benchmark, red = ESG underperformed benchmark.

		1m	3m	6m	12m	YTD	3Y	5Y	10Y
North America	S&P 500 ESG	4.4	5.7	6.5	22.7	24.5	33.0	93.9	181.4
	S&P 500	4.8	6.0	6.6	21.1	22.9	27.7	81.5	165.8
	TSX 60 ESG	3.6	1.1	1.8	3.5	4.9	16.6	-	-
	TSX 60	2.5	0.0	2.7	4.7	6.0	18.9	40.9	64.5
Europe	Euro Stoxx 50 ESG	6.0	6.8	7.1	20.8	22.3	34.9	57.9	65.1
	Euro Stoxx 50	5.4	5.9	4.2	18.6	19.9	29.2	47.1	55.7
	FTSE UK 100 ESG Select	0.2	-3.5	-2.5	-2.0	-2.7	15.1	13.1	-
	FTSE 100	1.2	-1.8	-0.7	2.0	1.7	16.3	10.7	17.6
	DAX 30 ESG	7.0	5.7	3.4	15.8	16.5	11.1	29.5	36.7
	DAX 30	6.4	5.4	2.7	15.9	16.5	14.7	32.4	39.2
	OMX 30 ESG Responsible	8.8	9.3	4.4	14.7	16.8	23.8	58.0	81.0
	OMX 30	8.8	8.7	3.3	14.8	16.8	26.3	62.2	90.0
Asia Pacific	ASX200 ESG	4.9	2.7	4.2	3.8	6.2	14.2	31.5	43.5
	ASX 200	4.7	2.2	3.7	3.3	5.7	12.2	32.9	46.0
	Hang Seng ESG 50	-3.7	-3.4	-12.1	-10.8	-12.2	-27.8	-24.8	-
	Hang Seng	-7.1	-7.6	-15.3	-13.3	-15.1	-35.9	-35.6	-27.8
	KRX ESG Leaders 150	2.9	-2.1	2.0	4.6	9.6	5.0	13.9	23.4
	KRX 100	3.4	-0.7	-0.7	11.7	16.0	-10.2	25.3	26.2
	Thaipat ESG	-0.5	-9.3	-9.1	-16.0	-18.0	-15.4	-17.2	-
	SET	-1.7	-9.8	-10.7	-14.1	-16.6	-5.8	-13.6	3.7
	Nifty 100 ESG	10.3	8.2	17.3	18.0	20.4	56.1	104.4	280.6
EEMEA	Nifty 100	9.6	7.4	15.8	16.1	18.3	57.7	95.6	256.7
	WIG-ESG	5.4	17.0	16.4	40.1	37.0	41.8	-	-
	WIG 20	4.6	17.5	10.6	32.1	29.5	18.7	0.7	-4.5

Source: BofA US ESG Research; Bloomberg. YTD/1m/3m/6m/12m/3y/5y/10y returns are calculated as of 12/15/2023

BofA GLOBAL RESEARCH

Exhibit 82: MSCI ESG Leaders vs traditional indices: 18 of 25 outperformed their benchmarks over last 12m

Absolute price return in USD currency (%), as of 12/15/2023. Green = ESG outperformed benchmark, red = ESG underperformed benchmark.

		1m	3m	6m	12m	YTD	3Y	5Y	10Y	12m Fwd P/E	
Global	AC World ESG	4.5	5.3	5.2	19.3	21.1	19.6	68.6	-	19.8	31.0
	AC World	4.7	5.2	4.6	16.9	18.3	13.0	52.9	82.8	18.6	28.6
DM	DM ESG	4.8	5.5	5.6	19.4	21.5	20.8	64.2	98.7	21.0	33.1
	DM	5.1	5.6	5.4	18.6	20.1	18.2	60.9	96.9	19.3	30.3
North America	North America ESG	4.7	5.8	7.4	22.3	24.6	29.1	83.3	152.4	23.7	37.5
	North America	5.1	6.2	6.9	21.2	23.0	24.4	79.9	154.6	22.0	34.5
	USA ESG	4.6	5.9	7.5	23.0	25.4	30.6	86.8	163.2	24.0	39.0
	USA	5.1	6.4	7.1	21.9	23.8	24.9	82.2	165.3	22.5	35.5
	Canada ESG	5.2	3.5	3.6	8.9	9.8	3.7	28.3	30.6	17.6	20.4
	Canada	2.4	0.1	3.5	6.1	7.2	19.2	39.7	57.5	15.0	21.5
Europe	Europe ESG	5.0	5.5	2.3	14.2	15.6	8.1	35.7	26.7	15.2	26.5
	Europe	4.8	2.9	2.5	10.9	12.2	22.6	36.0	51.1	13.6	23.8
	EMU ESG	5.1	4.9	3.1	16.3	17.5	27.4	54.6	117.5	14.1	26.1
	EMU	5.3	4.8	3.3	15.4	16.5	20.9	37.9	58.9	12.9	23.5
	Germany ESG	6.4	5.6	3.5	19.6	19.9	13.2	-	-	13.5	22.0
	Germany	6.0	4.9	2.1	15.6	16.0	7.0	21.2	29.1	12.3	19.5
	France ESG	5.5	2.0	3.0	16.5	17.6	44.6	64.3	110.7	13.2	26.5
	France	5.2	2.4	2.9	14.5	15.4	32.4	51.3	87.2	14.1	28.7
	Spain ESG	5.9	7.5	11.2	32.5	32.0	41.7	38.0	53.2	10.4	20.6
	Spain	4.8	5.6	7.7	24.5	23.9	27.6	19.3	23.3	10.4	18.0
	Italy ESG	4.2	5.3	7.1	27.5	27.2	26.9	64.6	110.3	11.1	20.8
	Italy	2.8	4.7	10.0	27.5	27.1	36.3	49.4	53.0	7.9	18.2
	Switzerland ESG	4.4	2.2	0.9	11.0	13.6	18.8	57.1	106.9	19.2	27.3
	Switzerland	4.0	-0.4	-1.6	2.5	3.8	5.7	24.9	42.2	18.9	25.5
	UK ESG	3.8	1.4	-3.2	6.7	8.6	2.4	12.3	-19.9	12.5	22.1
	UK	3.2	0.8	-0.2	5.5	6.8	12.4	10.6	-11.0	11.3	20.8
Asia Pacific	Asia Pacific ESG	5.5	2.5	-1.2	8.3	9.7	-6.9	14.7	20.4	17.5	22.9
	Asia Pacific	2.8	1.0	-1.7	5.3	6.3	-14.7	11.0	20.1	15.7	19.8
	Australia ESG	7.2	5.1	0.1	3.7	5.8	-0.7	20.4	-1.5	18.1	16.9
	Australia	8.1	7.3	3.4	4.7	6.2	2.2	23.9	7.3	17.0	19.2
	Japan ESG	6.0	2.0	-0.3	13.8	15.5	-6.9	19.3	36.3	17.8	26.4
	Japan	-2.0	-3.8	1.1	18.4	24.3	31.5	50.1	86.4	15.9	23.7
EM	EM ESG	1.1	1.1	-3.2	4.2	4.3	-19.4	13.3	43.8	-	-
	EM	1.8	1.6	-2.2	4.2	4.7	-19.9	3.0	1.1	14.1	18.6
EEMEA	EEMEA ESG	1.7	5.6	3.1	9.2	6.3	-10.2	-	-	10.7	16.9
	EEMEA	1.9	-1.3	-13.2	-13.5	-16.4	-38.2	-27.0	-45.7	20.9	17.6
	South Africa ESG	1.2	8.5	0.2	4.5	1.0	2.1	6.9	26.9	14.6	16.7
	South Africa	2.2	3.8	-2.0	5.2	4.4	13.6	20.1	44.9	14.1	16.8
LatAm	LatAm ESG	6.0	9.1	6.1	33.5	27.7	30.0	30.8	20.4	10.0	19.1
	LatAm	5.0	7.6	3.6	25.8	20.8	6.4	0.9	-18.6	10.0	19.1
	Brazil ESG	4.7	6.7	2.6	31.3	22.8	-19.0	-27.0	-28.8	14.3	19.2
	Brazil	2.6	5.9	4.0	25.8	18.1	-7.6	-11.1	-21.2	8.8	17.6
Asia Pacific	EM Asia ESG	0.4	-0.4	-4.9	1.0	2.0	-23.0	-	-	14.5	20.1
	EM Asia	1.3	0.5	-3.3	2.1	3.3	-22.7	8.4	20.0	15.3	18.5
	Korea ESG	4.3	-2.3	-9.8	-4.7	-2.3	-33.2	-19.3	-23.7	12.0	14.4
	Korea	2.9	-0.7	-1.6	12.1	18.8	-9.7	30.3	38.2	18.4	16.1
	Indonesia ESG	5.6	2.4	0.6	4.4	4.3	15.8	-	-	18.9	31.6
	Indonesia	2.8	-0.9	-0.8	0.7	1.0	10.9	5.0	57.1	15.1	24.1
	China ESG	-7.4	-8.3	-14.3	-11.5	-12.7	-50.1	-14.7	34.6	10.0	10.8
	China	-6.1	-7.2	-13.5	-12.7	-13.7	-46.9	-24.5	-12.6	10.4	-
	India ESG	8.4	6.3	12.4	8.7	10.5	25.9	64.0	150.8	28.4	47.9
	India	9.3	7.9	16.8	16.2	18.6	58.2	95.1	208.0	26.1	45.2

Source: BofA US ESG Research, Refinitiv, MSCI, Bloomberg. 1m/3m/6m/YTD/12m/3y/5y/10y returns are calculated as of 12/15/2023

BofA GLOBAL RESEARCH

ESG factor performance globally

Exhibit 83: YTD overall ESG factor performance was strongest in Utilities

Top vs. bottom quintile price performance YTD ending 12/15/2023 (% USD currency, equally weighted) for Sustainalytics universe*

	ESG	E							S					G								
		Carbon Products and Services	Emissions Effluents and Waste		Carbon Own Operations		Land Use and Biodiversity Supply Chain	Land Use and Biodiversity	Resource Use	Resource Use Supply Chain	Occupational Health and Safety	E & S Impact of Products and Services		Human Rights Supply Chain	Community Relations	Access to Basic Services	Human Capital	ESG Integration Financials	Product Governance	Business Ethics	Data Privacy and Security	Bribery and Corruption
Utilities	3%		5%	7%		6%	-6%		19%			8%			-10%		16%	5%				8%
Consumer Discretionary	2%	13%	-15%	1%	21%	-50%	-26%	-2%	8%	-2%	-2%				2%		1%	5%		2%	-24%	-5%
Energy	1%	-3%	-1%	-11%		-6%	11%		0%			2%			-12%		6%	-2%		0%	8%	
Telecommunication Services	-5%			-1%			-2%				-2%				-6%		0%	10%	1%		-1%	
Healthcare	-5%		-5%	-21%					4%	-31%				-6%	-13%		-13%	-11%	-25%	-17%	-11%	
Consumer Staples	-6%		2%	-10%	-7%		-10%	-4%	1%	-8%	2%				-10%		-5%	-6%	15%		-14%	
Financials	-7%														-9%	-7%	0%	-4%	-2%		-3%	
Industrials	-7%	8%	-7%	-9%		-19%	-16%	-12%	-8%	0%	-22%	-17%			-9%		-8%	-16%	1%	-12%	-17%	
Materials	-11%		-12%	-12%	-53%	-10%	-11%		-11%	1%		-18%			-18%		-16%	-9%		-13%	-19%	
Information Technology	-12%		-32%	-24%			-25%	-48%	-37%		-30%				-11%		-7%	-18%	6%		-9%	
Real Estate	-15%		-37%						4%			-16%			-12%	-14%	8%	-3%		-24%	-28%	

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US ESG Research for illustrative purposes and may overlap with multiple pillar dimensions

BofA GLOBAL RESEARCH

Exhibit 84: 1M Overall ESG factor performance has been strongest in Telecommunication Services

Top vs. bottom quintile price performance over 1M ending 12/15/2023 (% USD currency, equally weighted) for Sustainalytics universe*

	ESG	E							S					G						
		Carbon Products and Services	Emissions Effluents and Waste		Carbon Own Operations	Land Use and Biodiversity Supply Chain	Land Use and Biodiversity	Resource Use	Resource Use Supply Chain	Occupational Health and Safety	E & S Impact of Products and Services	Human Rights Supply Chain	Community Relations	Access to Basic Services	Human Capital	ESG Integration Financials	Product Governance	Business Ethics	Data Privacy and Security	Bribery and Corruption
Telecommunication Services	6%			-2%			1%				-2%			-1%		1%	4%	5%		-5%
Energy	3%	5%	-1%	-2%		6%	8%		3%			1%		-3%		-2%	6%		-6%	7%
Healthcare	2%		2%	-9%					5%	-7%			-1%	-1%		-3%	0%	-3%	-4%	-3%
Consumer Discretionary	-1%	0%	-5%	1%	2%	-12%	-8%	3%	-5%	-1%	0%			-2%		-2%	-4%	5%	-5%	-3%
Consumer Staples	-1%		0%	-3%	-1%		-2%	-1%	2%	-1%	1%			-5%		2%	-4%	4%		-3%
Financials	-1%													-4%	-1%	-1%	-5%	-1%		-1%
Industrials	-2%	-2%	-1%	-1%		2%	-1%	2%	0%	-2%	-10%	-3%		-1%		-2%	-5%	-1%	-1%	-4%
Information Technology	-3%		-15%	-7%			-7%	-21%	-18%		-11%			-4%		-1%	-9%	1%		-7%
Utilities	-4%		-2%	3%		-5%	-4%		-3%			-3%		0%		-2%	-1%			0%
Materials	-4%		-4%	-7%	2%	-5%	-3%		-4%	0%		-5%		-3%		-5%	-8%		-10%	-9%
Real Estate	-5%		-7%						0%			3%		-2%	-5%	1%	0%		-4%	-5%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US ESG Research for illustrative purposes and may overlap with multiple pillar dimensions

BofA GLOBAL RESEARCH

Exhibit 85: 3M Overall ESG factor performance has been strongest in Energy

Top vs. bottom quintile price performance over 3M ending 12/15/2023 (% , USD currency, equally weighted) for Sustainalytics universe*

	ESG	E							S					G						
		Carbon Products and Services	Emissions Effluents and Waste	Carbon Own Operations	Land Use and Biodiversity Supply Chain	Land Use and Biodiversity	Resource Use	Resource Use Supply Chain	Occupational Health and Safety	E & S Impact of Products and Services	Human Rights Supply Chain	Community Relations	Access to Basic Services	Human Capital	ESG Integration Financials	Product Governance	Business Ethics	Data Privacy and Security	Bribery and Corruption	Corporate Governance
Energy	5%	0%	-4%	-8%		8%	12%		2%			2%		-7%		1%	4%		-6%	11%
Consumer Staples	1%		8%	1%	3%		-5%	1%	6%	-1%	6%			-4%		5%	-2%	5%		-6%
Telecommunication Services	1%			-5%			1%				-2%			-3%		1%	2%	3%		-5%
Healthcare	-1%		4%	-1%					2%	-13%			2%	4%		-5%	1%	-9%	3%	4%
Consumer Discretionary	-2%	4%	-14%	2%	6%	-15%	-12%	4%	4%	-3%	5%			-5%		-6%	-6%	3%	-14%	-3%
Financials	-2%													-5%	-2%	-2%	-5%	-1%		-4%
Utilities	-3%		-1%	3%		-4%	-3%		0%			-3%		-3%		-1%	-2%			2%
Information Technology	-3%		-13%	-5%			-5%	-22%	-16%		-11%			-2%		0%	-7%	4%		-4%
Industrials	-5%	5%	-2%	-6%		2%	-4%	0%	-4%	-2%	-11%	-10%		-8%		-4%	-6%	5%	-6%	-9%
Materials	-10%		-6%	-9%	-26%	-10%	-10%		-8%	0%		-11%		-7%		-10%	-7%		-16%	-12%
Real Estate	-11%		-16%						-4%			-17%		-8%	-13%	0%	-6%		-24%	-16%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US ESG Research for illustrative purposes and may overlap with multiple pillar dimensions

BofA GLOBAL RESEARCH

Exhibit 86: 12M Overall ESG factor performance has been strongest in Utilities

Top vs. bottom quintile price performance over 12M ending 12/15/2023 (% , USD currency, equally weighted) for Sustainalytics universe*

	ESG	E							S					G						
		Carbon Products and Services	Emissions Effluents and Waste	Carbon Own Operations	Land Use and Biodiversity Supply Chain	Land Use and Biodiversity	Resource Use	Resource Use Supply Chain	Occupational Health and Safety	E & S Impact of Products and Services	Human Rights Supply Chain	Community Relations	Access to Basic Services	Human Capital	ESG Integration Financials	Product Governance	Business Ethics	Data Privacy and Security	Bribery and Corruption	Corporate Governance
Utilities	8%		11%	12%		13%	0%		25%			16%		-6%		20%	10%			13%
Consumer Discretionary	1%	14%	-18%	-1%	22%	-47%	-23%	1%	8%	-5%	0%			0%		-1%	3%	0%	-25%	-3%
Energy	-2%	-2%	-3%	-11%		-11%	7%		-2%			-3%		-12%		6%	-7%		-2%	5%
Telecommunication Services	-4%			0%			-1%				-2%			-6%		1%	10%	3%		5%
Consumer Staples	-4%		2%	-10%	-7%		-9%	-5%	0%	-9%	2%			-11%		-5%	-5%	14%		-12%
Healthcare	-6%		-6%	-18%					6%	-29%			-6%	-13%		-13%	-12%	-27%	-15%	-11%
Financials	-7%													-12%	-9%	-4%	-4%	-1%		-3%
Industrials	-7%	10%	-5%	-10%		-21%	-14%	-13%	-8%	1%	-23%	-17%		-11%		-8%	-16%	2%	-13%	-16%
Materials	-12%		-13%	-13%	-54%	-14%	-13%		-12%	2%		-18%		-20%		-17%	-11%		-15%	-20%
Information Technology	-13%		-30%	-24%			-26%	-43%	-34%		-28%			-9%		-8%	-16%	8%		-7%
Real Estate	-16%		-41%						-1%			-21%		-12%	-15%	7%	-1%		-26%	-28%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US ESG Research for illustrative purposes and may overlap with multiple pillar dimensions

BofA GLOBAL RESEARCH

ESG factor performance by region

Exhibit 87: YTD ESG factor performance has been strongest in DM Pacific, with Data Privacy and Security the best performing factor globally
Top vs bottom quintile price performance YTD (%), USD currency, equally weighted) for Sustainalytics universe*, as of 12/15/2023

		Developed Markets				Emerging Markets		
		Global	Americas	Europe & Middle East	Pacific	Americas	Asia	Europe, Middle East & Africa
ESG		-6%	-8%	-11%	3%	-11%	1%	-8%
E	Carbon Products and Services	6%	-7%	1%	-1%			20%
	Emissions Effluents and Waste	-10%	-8%	-10%	-2%	29%	-5%	-2%
	Carbon Own Operations	-13%	-9%	-3%	-1%	13%	-7%	-15%
	Land Use and Biodiversity	-8%	-8%	-1%	-3%	1%	70%	-6%
	Land Use and Biodiversity Supply Chain	-13%		5%	12%			-15%
	Resource Use	-14%	3%	1%	-10%	-4%	21%	-15%
	Resource Use Supply Chain	-13%		-1%	1%			-26%
S	Occupational Health and Safety	-6%	-13%	-9%	5%	5%	-10%	-2%
	E & S Impact of Products and Services	-6%	10%	13%	1%	-20%	-28%	-10%
	Human Rights Supply Chain	-15%	2%	-1%	-15%	35%	12%	-30%
	Community Relations	3%	2%	-13%	14%	-2%	-6%	25%
	Access to Basic Services	-6%		-19%	0%			6%
	Human Capital	-5%	4%	-8%	-4%	2%	0%	-7%
	ESG Integration Financials	-9%	-6%	-5%	-8%		-15%	-4%
G	Product Governance	-6%	6%	-7%	-4%	2%	-8%	-6%
	Business Ethics	-3%	-5%	-2%	10%	-1%	8%	-3%
	Data Privacy and Security	8%	20%	7%	1%	23%	-4%	9%
	Bribery and Corruption	-17%	-12%	-8%	3%			7%
	Corporate Governance	-11%	-5%	-4%	4%	1%	-6%	-16%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US Equity & Quant Strategy for illustrative purposes and may overlap with multiple pillar dimensions

BofA GLOBAL RESEARCH

Exhibit 88: 1M ESG factor performance has been strongest in EM Asia, with Data Privacy and Security the best performing factor globally

Top vs bottom quintile price performance over last 1m (%), USD currency, equally weighted) for Sustainalytics universe*, as of 12/15/2023

		Developed Markets				Emerging Markets		
		Global	Americas	Europe & Middle East	Pacific	Americas	Asia	Europe, Middle East & Africa
ESG		-3%	-7%	-1%	-2%	-5%	-1%	-3%
E	Carbon Products and Services	-4%	-13%	-7%	-3%			7%
	Emissions Effluents and Waste	-3%	-7%	-4%	1%	-4%	-4%	0%
	Carbon Own Operations	-4%	-10%	0%	-1%	4%	0%	-2%
	Land Use and Biodiversity	-2%	5%	9%	-3%	7%	3%	-8%
	Land Use and Biodiversity Supply Chain	-2%		9%	0%			-4%
	Resource Use	-4%	8%	2%	-2%	13%	-3%	-6%
	Resource Use Supply Chain	-4%		1%	0%			-5%
S	Occupational Health and Safety	-3%	-3%	-3%	1%	-4%	4%	-4%
	E & S Impact of Products and Services	-4%	-3%	3%	-3%	2%	-8%	-4%
	Human Rights Supply Chain	-4%	0%	0%	-3%	8%	-3%	-6%
	Community Relations	-3%	-1%	-2%	2%	1%	-4%	-5%
	Access to Basic Services	-1%		9%	3%			4%
	Human Capital	-2%	10%	2%	0%	11%	-2%	-8%
	ESG Integration Financials	-3%	-3%	-1%	1%		-6%	-5%
G	Product Governance	-1%	7%	-2%	-1%	-1%	-3%	-3%
	Business Ethics	-3%	5%	-1%	-1%	-3%	-1%	-4%
	Data Privacy and Security	1%	0%	3%	-1%	-3%	-3%	0%
	Bribery and Corruption	-7%	-15%	-2%	-2%			-4%
	Corporate Governance	-4%	2%	3%	-3%	5%	-2%	-6%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US Equity & Quant Strategy for illustrative purposes and may overlap with multiple pillar dimensions

BofA GLOBAL RESEARCH

Exhibit 89: 3M ESG factor performance has been strongest in EM EMEA, with Access to Basic Services the best performing factor globally

Top vs bottom quintile price performance over last 3m (% , USD currency, equally weighted) for Sustainalytics universe*, as of 12/15/2023

	Global	Developed Markets			Emerging Markets		
		Americas	Europe & Middle East	Pacific	Americas	Asia	Europe, Middle East & Africa
ESG	-6%	-10%	-5%	-3%	-4%	-5%	-1%
Carbon Products and Services	-2%	-17%	-5%	-2%			9%
Emissions Effluents and Waste	-6%	-12%	-4%	1%	2%	-8%	-4%
Carbon Own Operations	-6%	-10%	-2%	2%	-6%	-9%	-5%
E Land Use and Biodiversity	-3%	7%	3%	-2%	7%	0%	-5%
Land Use and Biodiversity Supply Chain	-2%		5%	8%			0%
Resource Use	-7%	7%	-1%	-4%	6%	-1%	-7%
Resource Use Supply Chain	-3%		0%	7%			-7%
Occupational Health and Safety	-5%	-6%	-7%	0%	-2%	8%	-6%
E & S Impact of Products and Services	-6%	1%	3%	-1%	6%	-21%	-3%
S Human Rights Supply Chain	-4%	2%	-1%	2%	2%	0%	-6%
Community Relations	-4%	-2%	-7%	2%	2%	-11%	4%
Access to Basic Services	3%		11%	9%			7%
Human Capital	-2%	8%	1%	-1%	1%	-3%	-3%
ESG Integration Financials	-5%	-2%	0%	-2%		-12%	-5%
Product Governance	-3%	3%	-4%	-3%	1%	0%	-1%
G Business Ethics	-2%	0%	1%	-2%	-5%	-4%	0%
Data Privacy and Security	3%	8%	7%	0%	10%	-4%	4%
Bribery and Corruption	-10%	-19%	-7%	0%			2%
Corporate Governance	-5%	0%	5%	-4%	-4%	-13%	-6%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US Equity & Quant Strategy for illustrative purposes and may overlap with multiple pillar dimensions

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Exhibit 90: 12M ESG factor performance has been strongest in DM Pacific, with Data Privacy and Security the best performing factor globally

Top vs bottom quintile price performance over last 12m (% , USD currency, equally weighted) for Sustainalytics universe*, as of 12/15/2023

	Global	Developed Markets			Emerging Markets		
		Americas	Europe & Middle East	Pacific	Americas	Asia	Europe, Middle East & Africa
ESG	-6%	-7%	-11%	4%	-9%	0%	-9%
Carbon Products and Services	7%	0%	5%	0%			17%
Emissions Effluents and Waste	-10%	-8%	-8%	0%	32%	-2%	-4%
Carbon Own Operations	-14%	-5%	-2%	0%	8%	-5%	-17%
E Land Use and Biodiversity	-10%	-10%	0%	2%	-5%	70%	-6%
Land Use and Biodiversity Supply Chain	-12%		8%	15%			-16%
Resource Use	-15%	1%	2%	-8%	-9%	21%	-17%
Resource Use Supply Chain	-13%		0%	3%			-26%
Occupational Health and Safety	-6%	-13%	-8%	8%	3%	-12%	-5%
E & S Impact of Products and Services	-8%	10%	13%	-1%	-15%	-24%	-14%
S Human Rights Supply Chain	-14%	4%	1%	-12%	36%	11%	-30%
Community Relations	4%	5%	-11%	17%	-4%	-3%	27%
Access to Basic Services	-5%		-20%	4%			5%
Human Capital	-7%	1%	-10%	-6%	2%	-3%	-8%
ESG Integration Financials	-11%	-5%	-5%	-12%		-19%	-7%
Product Governance	-6%	5%	-6%	-3%	6%	-7%	-6%
G Business Ethics	-5%	-7%	-2%	11%	2%	8%	-5%
Data Privacy and Security	7%	23%	7%	1%	28%	-5%	10%
Bribery and Corruption	-18%	-12%	-9%	6%			7%
Corporate Governance	-11%	-5%	-4%	6%	-3%	-5%	-17%

Source: BofA US ESG Research, Sustainalytics. *Note: Universe based on Global stocks covered by Sustainalytics with market capitalization > 10mn USD. Each category needs to have at least 10 stocks to calculate the performance, if there is less than 10 stocks the performances are not calculated. ESG factors categorized into E, S, and G dimensions by BofA US Equity & Quant Strategy for illustrative purposes and may overlap with multiple pillar dimensions

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Appendix

ESG fund ownership stock screens

Exhibit 91: 25 most overweighted US stocks by ESG funds

US-domiciled ESG funds' weight relative to S&P 500 Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to S&P 500
BALL	Ball Corporation	Materials	15.68
PNR	Pentair plc	Industrials	10.22
SEDG	SolarEdge Technologies, Inc.	Tech	7.29
XYL	Xylem Inc.	Industrials	6.87
BIO	Bio-Rad Laboratories, Inc. Class A	Health Care	6.34
FSLR	First Solar, Inc.	Tech	5.90
SYT	Sysco Corporation	Cons Staples	5.79
VRSK	Verisk Analytics Inc	Industrials	5.66
HOLX	Hologic, Inc.	Health Care	4.74
ENPH	Enphase Energy, Inc.	Tech	4.71
WAT	Waters Corporation	Health Care	4.69
AWK	American Water Works Company, Inc.	Utilities	4.68
CHRW	C.H. Robinson Worldwide, Inc.	Industrials	4.67
ECL	Ecolab Inc.	Materials	4.33
A	Agilent Technologies, Inc.	Health Care	4.29
WM	Waste Management, Inc.	Industrials	4.11
AOS	A. O. Smith Corporation	Industrials	4.04
FTV	Fortive Corp.	Industrials	3.99
DHI	D.R. Horton, Inc.	Cons Disc	3.96
IEX	IDEX Corporation	Industrials	3.93
CBOE	Cboe Global Markets Inc	Financials	3.92
CME	CME Group Inc. Class A	Financials	3.58
CHTR	Charter Communications, Inc. Class A	Comm Svcs	3.55
WST	West Pharmaceutical Services, Inc.	Health Care	3.47
DE	Deere & Company	Industrials	3.45

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 92: 25 most underweighted US stocks by ESG funds

US-domiciled ESG funds' weight relative to S&P 500 Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to S&P 500
PM	Philip Morris International Inc.	Cons Staples	0.01
BA	Boeing Company	Industrials	0.01
MO	Altria Group, Inc.	Cons Staples	0.02
DUK	Duke Energy Corporation	Utilities	0.02
WYNN	Wynn Resorts, Limited	Cons Disc	0.03
PPL	PPL Corporation	Utilities	0.04
NOC	Northrop Grumman Corp.	Industrials	0.04
FE	FirstEnergy Corp.	Utilities	0.04
PNW	Pinnacle West Capital Corporation	Utilities	0.04
TXT	Textron Inc.	Industrials	0.06
ETR	Entergy Corporation	Utilities	0.06
MGM	MGM Resorts International	Cons Disc	0.06
GD	General Dynamics Corporation	Industrials	0.07
FANG	Diamondback Energy, Inc.	Energy	0.09
BRKB	Berkshire Hathaway Inc. Class B	Financials	0.09
STZ	Constellation Brands, Inc. Class A	Cons Staples	0.10
XOM	Exxon Mobil Corporation	Energy	0.10
TDG	TransDigm Group Incorporated	Industrials	0.10
LMT	Lockheed Martin Corporation	Industrials	0.12
HWM	Howmet Aerospace Inc.	Industrials	0.12
UAL	United Airlines Holdings, Inc.	Industrials	0.12
NRG	NRG Energy, Inc.	Utilities	0.13
PCG	PG&E Corporation	Utilities	0.13
VICI	VICI Properties Inc	Real Estate	0.14
DTE	DTE Energy Company	Utilities	0.14

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 93: 25 most popular US stocks by ESG funds

Top 25 most widely held stocks in S&P 500 Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
MSFT	Microsoft Corporation	Tech	56.6%
ADBE	Adobe Incorporated	Tech	45.7%
V	Visa Inc. Class A	Financials	45.7%
NVDA	NVIDIA Corporation	Tech	44.3%
MA	Mastercard Incorporated Class A	Financials	42.0%
CRM	Salesforce, Inc.	Tech	40.6%
ECL	Ecolab Inc.	Materials	40.2%
INTU	Intuit Inc.	Tech	39.7%
GOOGL	Alphabet Inc. Class A	Comm Svcs	39.7%
AAPL	Apple Inc.	Tech	38.4%
DHR	Danaher Corporation	Health Care	38.4%
AWK	American Water Works Company, Inc.	Utilities	37.4%
ACN	Accenture Plc Class A	Tech	37.0%
HD	Home Depot, Inc.	Cons Disc	36.1%
ADSK	Autodesk, Inc.	Tech	36.1%
TSLA	Tesla, Inc.	Cons Disc	36.1%
DE	Deere & Company	Industrials	36.1%
APTIV	Aptiv PLC	Cons Disc	35.6%
LLY	Eli Lilly and Company	Health Care	35.6%
UNH	UnitedHealth Group Incorporated	Health Care	34.7%
MRK	Merck & Co., Inc.	Health Care	34.7%
CSCO	Cisco Systems, Inc.	Tech	34.7%
DIS	Walt Disney Company	Comm Svcs	34.2%
FSLR	First Solar, Inc.	Tech	34.2%
SPGI	S&P Global, Inc.	Financials	33.8%

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 94: 25 least popular US stocks by ESG funds

Bottom 25 least widely held stocks in S&P 500 Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
PM	Philip Morris International Inc.	Cons Staples	0.5%
MO	Altria Group, Inc.	Cons Staples	0.9%
TXT	Textron Inc.	Industrials	1.8%
GD	General Dynamics Corporation	Industrials	1.8%
WYNN	Wynn Resorts, Limited	Cons Disc	2.3%
PNW	Pinnacle West Capital Corporation	Utilities	2.3%
FANG	Diamondback Energy, Inc.	Energy	2.7%
NOC	Northrop Grumman Corp.	Industrials	2.7%
HII	Huntington Ingalls Industries, Inc.	Industrials	2.7%
CTRA	Coterra Energy Inc.	Energy	3.2%
EVERG	Evergy, Inc.	Utilities	3.2%
DUK	Duke Energy Corporation	Utilities	3.2%
PPL	PPL Corporation	Utilities	3.2%
MRO	Marathon Oil Corporation	Energy	4.1%
UHS	Universal Health Services, Inc. Class B	Health Care	4.1%
J	Jacobs Solutions Inc.	Industrials	4.6%
VTRS	Viatis, Inc.	Health Care	4.6%
SO	Southern Company	Utilities	4.6%
DVN	Devon Energy Corporation	Energy	5.0%
KVUE	Kenvue, Inc.	Cons Staples	5.0%
HWM	Howmet Aerospace Inc.	Industrials	5.0%
L	Loews Corporation	Financials	5.0%
TDG	TransDigm Group Incorporated	Industrials	5.0%
LVS	Las Vegas Sands Corp.	Cons Disc	5.0%
NI	NISource Inc	Utilities	5.0%

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH



Exhibit 95: 25 most overweighted European stocks by ESG funds

EU-domiciled ESG funds' weight relative to STOXX 600 I Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to Stoxx 600
EDPR PL Equity	Edp Renovaveis Sa	Utilities	6.52
ARCAD NA Equity	Arcadis Nv	Industrials	4.93
LIGHT NA Equity	Signify Nv	Industrials	4.59
AALB NA Equity	Aalberts Nv	Industrials	4.57
SECTB SS Equity	Sectra Ab	Health Care	4.48
VWS DC Equity	Vestas Wind Systems A/S	Industrials	4.33
BAKKA NO Equity	Bakkafrost P/F	Cons Staples	4.11
SIGN SE Equity	Sig Group Ag	Materials	3.99
TOM NO Equity	Tomra Systems Asa	Industrials	3.88
ORSTED DC Equity	Orsted As	Utilities	3.83
NEX FP Equity	Nexans Sa	Industrials	3.69
CRDA LN Equity	Croda International Plc	Materials	3.63
SKG ID Equity	Smurfit Kappa Group Plc	Materials	3.51
SPX LN Equity	Spirax-Sarco Engineering Plc	Industrials	3.43
VIE FP Equity	Veolia Environnement Sa	Utilities	3.36
SVT LN Equity	Severn Trent Plc	Utilities	3.34
WIE AV Equity	Wienerberger Ag	Materials	3.33
PRY IM Equity	Prysmian Spa	Industrials	3.25
SPIE FP Equity	Spie Sa	Industrials	3.24
BALDB SS Equity	Fastighets Ab Balder	Real Estate	3.21
WCH GY Equity	Wacker Chemie Ag	Materials	3.20
GF SE Equity	Georg Fischer Ag	Industrials	3.16
TEL2B SS Equity	Tele2 Ab	Comm Svcs	3.14
EKTAB SS Equity	Elekta Ab	Health Care	3.13
THULE SS Equity	Thule Group Ab	Cons Disc	3.13

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 96: 25 most underweighted European stocks by ESG funds

EU-domiciled ESG funds' weight relative to STOXX 600 I Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to Stoxx 600
TIGO SS Equity	Millicom International Cellular Sa	Comm Svcs	0.00
EXO NA Equity	Exor Nv	Financials	0.00
URW FP Equity	Unibail-Rodamco-Westfield	Real Estate	0.00
BZU IM Equity	Buzzi Spa	Materials	0.03
LDO IM Equity	Leonardo Spa	Industrials	0.03
AF FP Equity	Air France-Klm	Industrials	0.05
TKA GY Equity	Thyssenkrupp Ag	Materials	0.05
HBR LN Equity	Harbour Energy Plc	Energy	0.08
AM FP Equity	Dassault Aviation Sa	Industrials	0.08
SAABB SS Equity	Saab Ab	Industrials	0.08
TKWY NA Equity	Just Eat Takeaway.Com Nv	Cons Disc	0.08
PAH3 GY Equity	Porsche Automobil Holding Se	Cons Disc	0.10
ENOG LN Equity	Energean Plc	Energy	0.10
RHM GY Equity	Rheinmetall Ag	Industrials	0.10
BATS LN Equity	British American Tobacco Plc	Cons Staples	0.11
RYA ID Equity	Ryanair Holdings Plc	Industrials	0.11
CDI FP Equity	Christian Dior Se	Cons Disc	0.11
FRO NO Equity	Frontline Plc	Energy	0.11
RUI FP Equity	Rubis Sca	Utilities	0.11
IMB LN Equity	Imperial Brands Plc	Cons Staples	0.11
MT NA Equity	Arcelormittal Sa	Materials	0.11
BAS GY Equity	Basf Se	Materials	0.12
GLEN LN Equity	Glencore Plc	Materials	0.12
IAG LN Equity	International Consolidated Airlines Group Sa	Industrials	0.12
RR/ LN Equity	Rolls-Royce Holdings Plc	Industrials	0.12

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 97: 25 most popular European stocks by ESG funds

Most widely held stocks in Stoxx 600 Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
SU FP Equity	Schneider Electric Se	Industrials	42.3%
ASML NA Equity	Asml Holding Nv	Tech	42.3%
NOVOB DC Equity	Novo Nordisk A/S	Health Care	33.9%
OR FP Equity	L'Oreal Sa	Cons Staples	31.9%
IFX GY Equity	Infineon Technologies Ag	Tech	29.8%
AZN LN Equity	Astrazeneca Plc	Health Care	29.4%
SAP GY Equity	Sap Se	Tech	29.3%
CS FP Equity	Axa Sa	Financials	26.9%
ROG SE Equity	Roche Holding Ag	Health Care	26.3%
REL LN Equity	Relx Plc	Industrials	25.7%
SAN FP Equity	Sanofi Sa	Health Care	25.6%
SIE GY Equity	Siemens Ag	Industrials	25.5%
VWS DC Equity	Vestas Wind Systems A/S	Industrials	25.4%
ALV GY Equity	Allianz Se	Financials	25.0%
ULVR LN Equity	Unilever Plc	Cons Staples	24.5%
MUV2 GY Equity	Muenchener Rueckversicherungs-Gesellschaft Ag In Muenchen	Financials	24.4%
STMMI IM Equity	Stmicroelectronics Nv	Tech	23.8%
MC FP Equity	Lvmh Moet Hennessy Louis Vuitton Se	Cons Disc	23.8%
WKL NA Equity	Wolters Kluwer Nv	Industrials	23.5%
DSY FP Equity	Dassault Systemes Se	Tech	22.8%
NESN SE Equity	Nestle Sa	Cons Staples	22.8%
DHL GY Equity	Deutsche Post Ag	Industrials	22.1%
IBE SQ Equity	Iberdrola Sa	Utilities	21.7%
AD NA Equity	Koninklijke Ahold Delhaize Nv	Cons Staples	21.7%
DB1 GY Equity	Deutsche Boerse Ag	Financials	21.6%

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 98: 25 least popular European stocks by ESG funds

Least widely held stocks in Stoxx 600 Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
TIGO SS Equity	Millicom International Cellular Sa	Comm Svcs	0.0%
URW FP Equity	Unibail-Rodamco-Westfield	Real Estate	0.0%
EXO NA Equity	Exor Nv	Financials	0.0%
SRP LN Equity	Serco Group Plc	Industrials	0.4%
QQ/ LN Equity	Qinetiq Group Plc	Industrials	0.4%
FRO NO Equity	Frontline Plc	Energy	0.5%
HBR LN Equity	Harbour Energy Plc	Energy	0.5%
INDV LN Equity	Indivior Plc	Health Care	0.7%
CDI FP Equity	Christian Dior Se	Cons Disc	0.7%
ENOG LN Equity	Energean Plc	Energy	0.7%
LDO IM Equity	Leonardo Spa	Industrials	0.7%
TUI LN Equity	Tui Ag	Cons Disc	0.7%
SSPG LN Equity	Ssp Group Plc	Cons Disc	0.7%
TKA GY Equity	Thyssenkrupp Ag	Materials	0.9%
BZU IM Equity	Buzzi Spa	Materials	0.9%
KINDSDB SS Equity	Kindred Group Plc	Cons Disc	0.9%
AM FP Equity	Dassault Aviation Sa	Industrials	0.9%
IMB LN Equity	Imperial Brands Plc	Cons Staples	0.9%
BA/ LN Equity	Bae Systems Plc	Industrials	1.0%
RUI FP Equity	Rubis Sca	Utilities	1.0%
AF FP Equity	Air France-Klm	Industrials	1.0%
AVOL SE Equity	Avolta Ag	Cons Disc	1.0%
LXI LN Equity	Lxi Reit Plc	Real Estate	1.0%
VID SQ Equity	Vidrala Sa	Materials	1.0%
DWL LN Equity	Dowla's Group Plc	Cons Disc	1.1%

Source: BofA US ESG Research; Factset Ownership

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Exhibit 99: 25 most overweighted EEMEA stocks by ESG funds

ESG funds' weight relative to MSCI EEMEA Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to MSCI EEMEA
HTO GA	Ote Hellenic Telecom	Comm Svcs	4.84
CLS SJ	Clicks Group	Cons Staples	4.73
RICHT HB	Richter Gedeon	Health Care	3.62
VOD SJ	Vodacom Group	Comm Svcs	3.54
KIO SJ	Kumba Iron Ore	Materials	3.25
IMP SJ	Impala Platinum Holdings	Materials	2.78
NRP SJ	Nepi Rockcastle	Real Estate	2.73
WHL SJ	Woolworths Holdings	Cons Disc	2.52
ADCB UH	Abu Dhabi Comm Bank	Financials	2.34
OMU SJ	Old Mutual (New)	Financials	2.28
ALPHA GA	Alpha Services And Hldgs	Financials	2.20
MOL HB	Mol Magyar Olaj Gazipari	Energy	2.10
KGH PW	Kghm Polska Miedz	Materials	2.05
NED SJ	Nedbank Group	Financials	2.04
YKBNK TI	Yapi Ve Kredi Bankasi	Financials	2.03
AMS SJ	Anglo American Platinum	Materials	1.99
BID SJ	Bid Corporation	Cons Staples	1.97
KOMB CP	Komercni Banka	Financials	1.96
NPN SJ	Naspers N	Cons Disc	1.85
MONET CP	Moneta Money Bank	Financials	1.84
OPAP GA	Opap	Cons Disc	1.81
BVT SJ	Bidvest Group	Industrials	1.80
GRT SJ	Growthpoint Prop Ltd	Real Estate	1.79
GFI SJ	Gold Fields	Materials	1.73
ALE PW	Allegro.Eu	Cons Disc	1.69

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 100: 25 most underweighted EEMEA stocks by ESG funds

ESG funds' weight relative to MSCI EEMEA Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to MSCI EEMEA
PGE PW	Polska Grupa Ener	Utilities	0.02
EAST EY	Eastern Company	Cons Staples	0.04
MARAFIQ AB	Power & Water Utility Co	Utilities	0.05
LUBEREF AB	Saudi Aramco Base Oil Co	Materials	0.08
PCO PW	Pepco Group(PI)	Cons Disc	0.10
KOZAL TI	Koza Altin Isletmeleri	Materials	0.14
DUBK QD	Dukhan Bank	Financials	0.21
REIN LX	Reinet Investments	Financials	0.21
HRHO EY	Efg Holding	Financials	0.24
SASA TI	Sasa Polyester Sanayi	Materials	0.25
AMR UH	Americana Restaurants	Cons Disc	0.27
PETRO AB	Rabigh Refining & Petro	Energy	0.27
PPC GA	Public Power Corp	Utilities	0.28
DALLAH AB	Dallah Healthcare Hldg	Health Care	0.29
BOUBAYAN KK	Boubyan Bank	Financials	0.29
CPS PW	Cyfrowy Polsat Sa	Comm Svcs	0.30
MABANEE KK	Mabane Co Sakc	Real Estate	0.30
SIIG AB	Saudi Indl Inv Group	Materials	0.30
KAYAN AB	Saudi Kayan Petrochem	Materials	0.31
MOUWASATAB	Al Mouwasat Medical Svcs	Health Care	0.32
MULTIPLYUH	Multiply Group	Industrials	0.32
MARK QD	Al Rayan Bank	Financials	0.33
HEKTS TI	Hektas Ticaret	Materials	0.33
BUPA AB	Bupa Arabia For Copr Ins	Financials	0.33
IQCD QD	Industries Qatar	Industrials	0.33

Source: BofA US ESG Research; Factset Ownership

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Exhibit 101: 25 most popular EEMEA stocks by ESG funds

Most widely held stocks in MSCI EEMEA Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
NPN SJ	Naspers N	Cons Disc	33.3%
CLS SJ	Clicks Group	Cons Staples	29.2%
IMP SJ	Impala Platinum Holdings	Materials	28.7%
HTO GA	Ote Hellenic Telecom	Comm Svcs	27.1%
FSR SJ	Firststrand	Financials	26.4%
OTP HB	Otp Bank	Financials	25.1%
PZU PW	Powszechny Zaklad Ubezpie	Financials	24.8%
VOD SJ	Vodacom Group	Comm Svcs	24.4%
AMS SJ	Anglo American Platinum	Materials	24.1%
SBK SJ	Standard Bank Group	Financials	23.9%
RICHT HB	Richter Gedeon	Health Care	23.7%
GFI SJ	Gold Fields	Materials	23.0%
SLM SJ	Sanlam	Financials	22.8%
KIO SJ	Kumba Iron Ore	Materials	22.5%
BID SJ	Bid Corporation	Cons Staples	22.1%
KOMB CP	Komercni Banka	Financials	21.8%
SPL PW	Santander Bank Polska	Financials	21.6%
WHL SJ	Woolworths Holdings	Cons Disc	20.7%
CPI SJ	Capitec Bank Holdings	Financials	20.7%
ABG SJ	Absa Group	Financials	20.5%
NED SJ	Nedbank Group	Financials	20.5%
PKO PW	Pko Bank Polski	Financials	20.2%
OMU SJ	Old Mutual (New)	Financials	20.0%
ALDAR UH	Aldar Properties	Real Estate	20.0%
ADCB UH	Abu Dhabi Comm Bank	Financials	19.5%

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Exhibit 102: 25 least popular EEMEA stocks by ESG funds

Least widely held stocks in MSCI EEMEA Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
PGE PW	Polska Grupa Ener	Utilities	0.7%
EAST EY	Eastern Company	Cons Staples	0.9%
MARAFIQ AB	Power & Water Utility Co	Utilities	2.1%
LUBEREF AB	Saudi Aramco Base Oil Co	Materials	2.1%
PPC GA	Public Power Corp	Utilities	2.8%
EXX SJ	Exxaro Resources	Energy	3.0%
HRHO EY	Efg Holding	Financials	3.2%
DUBK QD	Dukhan Bank	Financials	3.2%
PETRO AB	Rabigh Refining & Petro	Energy	4.4%
AMR UH	Americana Restaurants	Cons Disc	4.6%
TAWUNIYAAB	Co For Cooperative Ins	Financials	5.1%
QEWS QD	Qatar Elect & Water Co	Utilities	5.1%
KOZAL TI	Koza Altin Isletmeleri	Materials	5.1%
REIN LX	Reinet Investments	Financials	5.1%
ASELS TI	Aselsan Elektronik	Industrials	5.5%
PGSUS TI	Pegasus Hava Tasimacilig	Industrials	5.5%
CEZ CP	Cez Ceske Ener Zavody	Utilities	5.5%
PCO PW	Pepco Group(PI)	Cons Disc	5.7%
SIIG AB	Saudi Indl Inv Group	Materials	6.0%
DALLAH AB	Dallah Healthcare Hldg	Health Care	6.2%
KAYAN AB	Saudi Kayan Petrochem	Materials	6.4%
ACWA AB	Acwa Power Company	Utilities	6.4%
RESEARCHAB	Saudi Rsch And Media Grp	Comm Svcs	6.7%
MABANEE KK	Mabane Co Sakc	Real Estate	6.7%
TADAWULGAB	Saudi Tadawul Group Hldg	Financials	7.1%

Source: BofA US ESG Research; Factset Ownership

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Exhibit 103: 25 most overweighted APAC stocks by ESG funds

APAC ESG funds' weight relative to MSCI AsiaPac Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to MSCI AsiaPac
300124 CH	Shenzhen Inovanc A(Hk-C)	Industrials	75.29
600885 CH	Hongfa Tech A (Hk-C)	Industrials	62.18
300347 CH	Hangzhou Tiger A (Hk-C)	Health Care	49.22
688301 CH	Iray Technology A (Hk-C)	Health Care	43.02
002050 CH	Zhejiang Sanhua A (Hk-C)	Industrials	42.08
000733 CH	China Zhenhua A (Hk-C)	Tech	37.66
688122 CH	Western Supercon A(Hk-C)	Materials	37.18
300750 CH	Contemporary Amp A(Hk-C)	Industrials	35.57
002465 CH	Guangzhou Haige A (Hk-C)	Tech	32.76
603899 CH	Shanghai M&G A (Hk-C)	Industrials	32.59
300699 CH	Weihai Guangwei A (Hk-C)	Materials	32.37
002340 CH	Shenzhen Green A (Hk-C)	Materials	31.52
002271 CH	Beijing Ornt Yuh A(Hk-C)	Materials	31.04
002372 CH	Zj Weixing New A (Hk-C)	Industrials	30.02
300395 CH	Hubei Feilihua A (Hk-C)	Materials	28.64
600570 CH	Hundsun Tech A (Hk-C)	Tech	28.22
000738 CH	Aecc Aero Engrn A (Hk-C)	Industrials	28.17
600893 CH	Aecc Aviation A (Hk-C)	Industrials	28.02
600038 CH	Avic Helicopter A (Hk-C)	Industrials	27.98
000519 CH	North Ind Grp A (Hk-C)	Industrials	27.08
603799 CH	Zhejiang Huayou A (Hk-C)	Materials	25.12
002353 CH	Yantai Jereh Oil A(Hk-C)	Energy	24.62
002497 CH	Sichuan Yahua A (Hk-C)	Materials	24.59
600004 CH	Guangzhou Bai In A(Hk-C)	Industrials	24.50
300073 CH	Beijing Easpring A(Hk-C)	Industrials	24.48

Source: BofA US ESG Research; Factset Ownership

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Exhibit 104: 25 most underweighted APAC stocks by ESG funds

APAC ESG funds' weight relative to MSCI AsiaPac Index, as of 11/30/2023

Ticker	Company	Sector	ESG funds' weight relative to MSCI AsiaPac
OR TB	Ptt Oil And Retail	Cons Disc	0.00
600166			
CH	Beiqi Foton Motr A(Hk-C)	Cons Disc	0.00
902 HK	Huaneng Power Intl H	Utilities	0.00
300394			
CH	Suzhou Tfc A (Hk-C)	Tech	0.00
BANPU			
TB	Banpu	Energy	0.00
BGRIM TB	Bgrimm Power	Utilities	0.00
1171 HK	Yankuang Energy Group H	Energy	0.00
LH TB	Land & Houses	Real Estate	0.00
2357 HK	Avichina Ind & Tech H	Industrials	0.00
CPF TB	Charoen Pokphand Foods	Cons Staples	0.00
KTB TB	Krung Thai Bank	Financials	0.00
#N/A			
Invalid			
Security	Lufax Holding Adr	Financials	0.00
SOL AU	Pattinson (Washington)	Financials	0.00
NTPC IN	Ntpc	Utilities	0.00
HNAL IN	Hindustan Aeronautics	Industrials	0.00
600559			
CH	Hebei Henshui A (Hk-C)	Cons Staples	0.00
TRUE TB	True Corp (New)	Comm Svcs	0.00
ADANI IN	Adani Power	Utilities	0.00
900948			
CH	Inner Mongolia Yitai B	Energy	0.00
TPWR IN	Tata Power Co	Utilities	0.00
002262			
CH	Jiangsu Nhwa A (Hk-C)	Health Care	0.00
000617			
CH	Cnpc Capital A (Hk-C)	Financials	0.00
1898 HK	China Coal Energy H	Energy	0.00
1088 HK	China Shenhua Energy H	Energy	0.00
603728			
CH	Shanghai Moons A (Hk-C)	Industrials	0.00

Source: BofA US ESG Research; Factset Ownership

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Exhibit 105: 25 most popular APAC stocks by ESG funds

Most widely held stocks in MSCI AsiaPac Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
300750 CH	Contemporary Amp A(Hk-C)	Industrials	27.2%
6758 JP	Sony Group Corp	Cons Disc	26.3%
7741 JP	Hoya Corp	Health Care	23.8%
300274 CH	Sungrow Power A (Hk-C)	Industrials	23.2%
9433 JP	Kddi	Comm Svcs	23.2%
8766 JP	Tokio Marine Holdings	Financials	23.2%
8316 JP	Sumitomo Mitsui Finl Grp	Financials	22.6%
6501 JP	Hitachi	Industrials	22.6%
4503 JP	Astellas Pharma	Health Care	22.3%
6723 JP	Renesas Electronics Corp	Tech	22.3%
6098 JP	Recruit Holdings Co	Industrials	22.3%
6702 JP	Fujitsu	Tech	22.0%
1299 HK	Aia Group	Financials	21.7%
8630 JP	Sompo Holdings	Financials	21.4%
4307 JP	Nomura Research Inst	Tech	21.4%
6857 JP	Advantest Corp	Tech	21.1%
6701 JP	Nec Corp	Tech	20.7%
4661 JP	Oriental Land Co	Cons Disc	20.7%
700 HK	Tencent Holdings Li (Cn)	Comm Svcs	20.7%
601012 CH	Longi Green Ener A(Hk-C)	Tech	20.7%
8035 JP	Tokyo Electron	Tech	20.7%
4063 JP	Shin-Etsu Chemical Co	Materials	20.7%
8113 JP	Uni-Charm Corp	Cons Staples	20.4%
6981 JP	Murata Manufacturing Co	Tech	20.1%
5108 JP	Bridgestone Corp	Cons Disc	20.1%

Source: BofA US ESG Research; Factset Ownership

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Exhibit 106: 25 least popular APAC stocks by ESG funds

Least widely held stocks in MSCI AsiaPac Index, as of 11/30/2023

Ticker	Company	Sector	% ESG funds with position
BGRIM TB	Bgrimm Power	Utilities	0.0%
600559 CH	Hebei Henshui A (Hk-C)	Cons Staples	0.0%
LH TB	Land & Houses	Real Estate	0.0%
CPF TB	Charoen Pokphand Foods	Cons Staples	0.0%
KTB TB	Krung Thai Bank	Financials	0.0%
OR TB	Ptt Oil And Retail	Cons Disc	0.0%
600166 CH	Beiqi Foton Motr A(Hk-C)	Cons Disc	0.0%
002262 CH	Jiangsu Nhwa A (Hk-C)	Health Care	0.0%
900948 CH	Inner Mongolia Yitai B	Energy	0.0%
6623 HK	Lufax Holding Adr	Financials	0.0%
000617 CH	Cnpc Capital A (Hk-C)	Financials	0.0%
603728 CH	Shanghai Moons A (Hk-C)	Industrials	0.0%
2357 HK	Avichina Ind & Tech H	Industrials	0.0%
ADANI IN	Adani Power	Utilities	0.0%
SOL AU	Pattinson (Washington)	Financials	0.0%
NTPC IN	Ntpc	Utilities	0.0%
300394 CH	Suzhou Tfc A (Hk-C)	Tech	0.0%
1088 HK	China Shenhua Energy H	Energy	0.0%
BANPU TB	Banpu	Energy	0.0%
1898 HK	China Coal Energy H	Energy	0.0%
1171 HK	Yankuang Energy Group H	Energy	0.0%
902 HK	Huaneng Power Intl H	Utilities	0.0%
TRUE TB	True Corp (New)	Comm Svcs	0.0%
TPWR IN	Tata Power Co	Utilities	0.0%
HNAL IN	Hindustan Aeronautics	Industrials	0.0%

Source: BofA US ESG Research; Factset Ownership

BofA GLOBAL RESEARCH

Methodology

Ownership methodology

USA

ESG Fund universe is defined using Lipper fund data and our proprietary identification methodology. We identified 219 ESG funds domiciled in the US with a US or Global geographical focus. We then query FactSet ownership database for those 219 funds to get their security level ownership data. Equity holdings were aggregated to build positioning metrics for relative weights and percentage of ownership at the stock level relative to S&P 500 as well as MSCI USA ESG leaders (USSLM) Index. Asset under management (AUM) invested in S&P 500 constituents was 163bn USD in this month's run. Equity holdings were marked-to-market the composite as of November 30, 2023.

Europe

ESG Fund universe is defined by EPFR's ESG/SRI fund classification. Using EPFR's filters, we identified 1637 ESG funds where their geographical focus are Europe and Global but domiciled in UK and Eurozone area. We then query FactSet ownership database for those 1637 funds to get their security level ownership data. Equity holdings were aggregated to build positioning metrics for relative weights and percentage of ownership at the stock level relative to STOXX 600 as well as MSCI Europe ESG leaders (EUSI) Index. Asset under management (AUM) invested in STOXX 600 constituents was 339bn EUR in this month's run. Equity holdings were marked-to-market the composite as of November 30, 2023.

Asia Pacific

ESG Fund universe is defined by EPFR's ESG/SRI classifications. Using EPFR's filters, we identified 323 ESG funds where their geographical focus is APAC region. We then query FactSet ownership database for those 323 funds to get their security level ownership data. Equity holdings were aggregated to build positioning metrics for relative weights and percentage of ownership at the stock level relative to MSCI All Country Asia Pacific index (MSCI Asia Pac). Assets under management (AUM) invested in MSCI Asia Pac constituents was 70bn USD in this month's run. Equity holdings were marked-to-market the composite as of November 30, 2023.

EEMEA

We have run analysis on funds invested in MSCI EEMEA stocks as per the FactSet Ownership database, the database collects global equity ownership data for approximately 20,000 institutions and covers mutual funds. Within 20,000 funds, we have classified those mentioning the key words in the fund's name as ESG/thematic-oriented and analysed their holdings on EEMEA stocks in comparison with the all funds invested in MSCI EEMEA index constituents. We have found 435 global funds filling this condition with 12bn USD AUM. We aggregated the holdings of each of the 435 funds from the FactSet Ownership database and calculated the number of ESG funds owning each MSCI EMEA stocks to determine which stocks are most widely owned vs. least owned by all ESG funds. Equity holdings were marked-to-market the composite as of November 30, 2023. Please refer to the List of key words.

List of key words

Below list contains the list of key words searched in fund names provided by FactSet in order to label a fund as ESG fund.

ESG, SRI, Ethic, Carbon, Climate, Climate Change, Water, Clean Energy, Women, Catho, Islam, PRI, Sustainable, Responsible, Social, Impact, Env, Environmental Social, Governance, Responsible, Fossil, Fossil Fuel, Conscious, Gender, Clean, SDG, Vegan, Animal impact, Low Carbon, Low CO₂.

Sustainalytics methodology

The following offers a short overview of the methodological aspects of the ESG Risk Ratings that was launched in September 2018 by Sustainalytics. Readers that are interested to go beyond the methodology can refer to the three volume White Paper series that was published since the product launch. The publications are available on the official website of the data provider.

What the ESG risk ratings measure

The ESG Risk Ratings measure the degree to which a company's economic value (enterprise value) is at risk driven by ESG factors or, more technically speaking, the magnitude of a company's unmanaged ESG risks. The ESG Risk Ratings comprise two dimensions, Exposure and Management, to assess how much unmanaged ESG risk a company is exposed to.

For each company, unmanaged risk is measured by evaluating a unique set of material ESG issues based on both the company's exposure to and management of those issues. The resulting unmanaged risk for each issue is then summed to provide one score that represents the company's overall ESG risk.

A company's ESG Risk Rating is comprised of a quantitative score and a risk category. The quantitative score represents units of unmanaged ESG risk with lower scores representing less unmanaged risk. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) and, for 95% of cases, a maximum score below 50. Based on their quantitative scores, companies are grouped into one of five risk categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all sub-industries covered. This means that a bank, for example, can be directly compared with an oil company or any other type of company. One point of risk is one point of risk (equivalence principle), no matter which company or which issue it applies to, and points of risk add up across issues to create overall scores.

Defining materiality and risk

An issue is considered to be material within the ESG Risk Ratings if its presence or absence in financial reporting is likely to influence the decisions made by a reasonable investor. To be considered relevant in the ESG Risk Ratings, an issue must have a potentially substantial impact on the economic value of a company and, hence, its financial risk- and return profile from an investment perspective. It is important to distinguish the ESG Risk Ratings' use of materiality as a concept from narrower legal or accounting-focused definitions. Not every issue Sustainalytics considers as material in the rating is legally required to be disclosed in company reporting.

Note that an underlying premise of the ESG Risk Ratings is that the world is transitioning to a more sustainable economy and that the effective management of ESG risks should, therefore, be associated with superior long-term enterprise value, *ceteris paribus*. Some issues are considered material from an ESG perspective even if the financial consequences are not fully measurable today.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R1}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R1} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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