Investment Insights

Amundi Responsible Investment Views 2024

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FOREWORD

Cutting through the noise to navigate the shifting landscape of responsible investment

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To reach the world's objective of carbon neutrality by 2050, global clean energy spending has to more than double to $4.5 trillion per year by 2030, of which $2 trillion annually in emerging markets alone. While the funding taps to make this happen have been slow to turn on, we are finally seeing signs of real acceleration. In the coming decade, the Inflation Reduction Act in the US and REPowerEU aim to mobilise $400 billion in incentives and tax credits and €300 billion to support clean energy investments, respectively, with trillions of additional investments expected in both markets.

Understanding responsible investment needs and upcoming trends can be a daunting task, especially when added to the many buzzwords such as "biodiversity", "just transition", and "net zero" that are tossed around, and when trying to relate these needs to actual responsible investment offerings.

In the light of apparent setbacks, we consider it our business to bring clarity to the current responsible investment landscape, and to cut through the current noise to elaborate on the trends that will be our responsible investment priorities in 2024 and beyond.

In this first edition of Amundi Responsible Investment Views, we describe six main trends to watch in responsible investment in 2024 and infer some of the implications for investors of each one:

1. **Green tech race acceleration with the US Inflation Reduction Act (IRA) and the EU Green Deal Industrial Plan**
2. **Net Zero investment trends in the light of the Global Stocktake exercise, and mounting climate risks in a delayed transition scenario**
3. **Capital market mobilization to support just transition in emerging markets and developing economies (EMDEs), in a new macro environment requiring to accelerate and scale further blended finance**
4. **System thinking integrating planetary boundaries and increased attention to intertwined nature and earth systems**
5. **Long-lasting impact of EU Sustainable Finance Action Plan on capital markets and the asset management industry**
6. **Moving beyond ESG and greenwashing backlash.**

Responsible investing is quickly moving from a niche to a standardized and regulated environment. To face the environmental and social challenges of today's economy, all while continuing to meet the highest client standards and objectives, it is essential that the industry offers higher transparency and brings greater clarity to sustainable finance value proposition. We need to scale and accelerate our efforts on multiple sustainability fronts, responsible investment needs to live up to this challenge.

To achieve the significant changes we need for a sustainable inclusive transition to a low-carbon economy, urgent coordinated action is required from all stakeholders, including the financial industry. The coming years are critical if we want to 1) avoid huge financial, environmental and social costs should the transition be delayed or unsuccessful, and 2) make the most of the massive financial, environmental and social opportunities that a steady and orderly transition entail.

Investors should stay the course.

Executive Summary

1. "BIG GREEN" TAILWINDS

From the US Inflation Reduction Act to the EU Green Deal Industrial Plan, trends to watch for responsible investors P. 5

- Policy packages in the US, the EU and in China will spur massive flows of investment towards the development of green technology innovations, which are destined to have a long-lasting impact on tech and their energy sources worldwide.
- The US Inflation Reduction Act (IRA) is a major breakthrough in the race of green technology investments, expected to unlock around $400 billion in incentives and tax credits over the next decade for American manufacturers and push the green tech race to a new level.
- In response to the IRA, the EU launched the Green Deal Industrial Plan. The plan builds upon previous policy packages such as Fit for 55 or REPowerEU, which aims to mobilise close to €300 billion by 2030 to support clean energy investments.
- 5 green tech trends to watch in 2024: sodium batteries, artificial intelligence for smart emissions management, green steel, carbon capture and storage, and alternative marine fuels.

2. Staying the course on climate with a net zero compass P. 9

- The first Global Stocktake (GST) revealed that global CO_2 emission levels have exceeded interim targets to meet the 2050 objective of the Paris Agreement. To achieve the global objective of net zero, annual global clean energy spending has to rise from $1.8 trillion in 2023 to $4.5 trillion by 2030 (source: IEA), and governments must issue and follow through on more ambitious climate-related policies.
- Climate strategy has become an essential component of long-term investors' risk management toolbox. Responsible investors should favour an integrated net zero framework that embraces both alignment and contribution dimensions.
- Tail risks stemming from both physical risks and transition risks should not be underestimated by investors.

3. Sustainable capital mobilisation in EMDEs: the coming of age of blended finance? P. 14

- Climate-related investments in emerging markets and developing economies (EMDEs) will need to increase to $2 trillion per year by 2030 (source: IEA). GSS+ bond issuance in EMDEs should continue to grow as the energy transition accelerates and investor demand rises.
- Despite solid GSS+ market momentum, only a small portion of climate finance is being redirected towards adaptation. Scaling up climate adaptation and transition financing is particularly important for EMDEs as they are the most affected by climate change. The success of the transition at a global scale depends on the success of the transition in emerging markets.
- To quickly ramp up clean energy investment in EMDEs, public capital has a significant role to play, but it will not be sufficient on its own. Private capital needs to be leveraged and crowded in. Blended finance appears an ideal solution for leveraging public capital to de-risk private investments and channel massive flows of private money.
- To address critical questions on how to stimulate private climate investment in EMDEs, several reforms to Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs) have been proposed in recent years.

1. "BIG GREEN" TAILWINDS *From the US Inflation Reduction Act to the EU Green Deal Industrial Plan, trends to watch for responsible investors*

Over the past 24 months, the first and third largest economies in the world have passed the most ambitious Environment and Climate policy packages ever: the Inflation Reduction Act (IRA) in the US, signed in August 2022, and the "Fit for 55" package in the European Union, approved in December 2021. The "Fit for 55" package was subsequently boosted by REPowerEU, launched in May 2022 after the start of the war in Ukraine, and the Net Zero Industry Act, the EU's answer to the IRA.

In China, the world's second largest economy, the conjunction of a "Made in China 2025" plan and the 14th Five-Year Plan (which includes a key section: "Actively respond to climate change") has put green innovation at the centre of the country's industrial policy.

The impact of these three policy packages will be of a significant magnitude.

University of Cambridge Professor Jorge Viñuales saw in the 2022 energy crisis a "clash in an ongoing tension, driven by climate change, between two competing socio-technical regimes: one based on fossil-fuel technologies, the other on low-carbon ones."

For the first time ever, the alignment between energy security, strategic industrial plans, and climate objectives create significant tailwinds for responsible investing that are destined to last, and will work towards achieving a low-carbon economy.

A. The Inflation Reduction Act (IRA) and its impact on the US sustainable development trajectory

"Because of the Infrastructure Law, we are going [to] have 500,000 electric charging stations on our highways across America installed by the IBEW. And they are all going to be made in America. This law will create good-paying union jobs [and] increase energy security."

Remarks by US President Biden on the Passage of H.R. 5376, the Inflation Reduction Act of 2022.

In 2022, the US made a major breakthrough in the race for green technology investments. The Inflation Reduction Act (IRA) aimed to accelerate investments in climate-friendly technologies and manufacturing, promote clean energy and enhance energy efficiency. This legislation, significantly influenced by Princeton ZERO lab, has become the cornerstone of efforts to meet the US carbon emissions reduction target of 50% to 52% by 2030.

To support this ambition, the IRA should progressively unlock around $400 billion in incentives and tax over the next 10 years. The plan will increase momentum behind the energy transition, supporting:

- Renewable energy and grid energy storage
- Adoption of new technologies (e.g., electric vehicles, hydrogen, ...)
- Build up of retrofits and energy efficiency
- Increased share of new and lower-cost tech

According to the White House, 1 year after the announcement made on the 16th of August 2022, the IRA is estimated to have had a significant impact, including:

- $110 billion in new clean energy manufacturing investments announced;
- 170,000 clean energy jobs created with an expected 1.5m more in next decade.

Moreover, thanks to the IRA, families are expected to save $27 billion to $38 billion on electricity bills between 2022 and 2030; in fact, the US Department of Energy now anticipates that the US will reach 80% clean electricity by 2030.

This legislation was also a massive opportunity for the US government to relocate its activity back in the US. Indeed, the incentives described in the IRA will only finance products made in the US or incorporating US suppliers in their value chain. As a result, we see companies adjust to take advantage of these incentives, as, for instance, Schlumberger, the world's largest oilfield services company and a technology leader in the legacy energy sector as well as energy transition.

CASE STUDY: SCHLUMBERGER PIONEERING CARBON CAPTURE SOLUTIONS (CCS)

The company is investing in newer high growth businesses such as reservoir analysis to allow for carbon capture & sequestration (CCS), geothermal energy, direct lithium extraction, and hydrogen.

From a technical standpoint, the concept of capturing and storing CO_2 underground is well understood; the challenge lies in balancing project frameworks and economic returns. This is where government incentives and regulations are critical to attracting investment, and Schlumberger is a leader in the technology needed to execute this important pathway towards net zero.

Schlumberger's CCS business is capitalizing on government credits offered as part of the IRA of $85 per metric ton of CO_2 captured and sequestered.

Additionally, the company is positioning itself on the lithium supply chain, as the IRA offers a $35 per kWh credit for domestically produced batteries. To qualify, the lithium used in these batteries must be domestically produced, explaining why Schlumberger is currently working on a direct lithium extraction project in Nevada.

While the IRA was welcomed by the EU as a step in the right direction to fight climate change on the part of the US, it has also raised concerns, primarily because it prioritises American manufacturers, which may disadvantage European businesses. This has sparked fears of relocation by companies that had previously invested in Europe. European leaders have therefore answered the IRA with their own "Green Deal Industrial Plan."

> *"Decarbonization is now a strategic imperative."*
>
> *Josep Borell, High Representative of the European Union for Foreign Affairs and Security Policy, and Werner Hoyer, President of the European Investment Bank.*

B. The EU Green Deal Industrial Plan and its ambition to support the EU's transition to climate neutrality

The Green Deal Industrial Plan was presented on 1 February 2023 to limit the IRA's impact on the migration of clean-energy activity from Europe to the US. Contrary to the IRA, this plan comes on top of an already solid basis built over the years. This foundation, gathered within the EU "Fit for 55" package, includes frameworks and objectives across energy, building, transportation, land-use or agriculture and encompasses the Nationally Determined Contributions of all Member States.

This new plan promotes Europe's transition towards climate neutrality by fostering an environment conducive to the development of green technologies and products through:

- Simplifying the regulatory environment
- Increasing financial accessibility
- Enhancing skill sets
- Maintaining open trade.

To counteract any potential impact from the IRA on European industry, the EU increased its State aid rules in response to the Russian invasion of Ukraine, transforming the Temporary Crisis Framework into the Temporary Crisis and Transition Framework (TCTF).

The EU also pushed the transition towards sustainable energy in Europe with the REPowerEU plan, launched in May 2022. The plan aims to save energy, produce clean energy and diversify the bloc's energy supply to limit dependency on Russia. It will mobilise close to €300 billion by 2030 and in one year managed to:

- Generate more electricity from wind and solar sources than from gas
- Reach a record of 41 GW in new solar energy capacity installed
- Increase wind capacity by 16 GW
- Ensure that 39% of electrical power now comes from renewables.

These and other regulations are pushing industries forward through incentives and investments that will have far-reaching consequences for the emergence and scaling of technologies. Below, we take a closer look at five of the green techs that stand to be affected.

C. Five green tech to watch for 2024 and where financial flows are heading

SODIUM BATTERIES

Driven by burgeoning electricity demand and investment in renewable power generation, the BESS (Battery Energy Storage System) market is expected to **grow from $10.88 billion in 2022 to $31.20 billion by 2029, a CAGR of 16.3%.** This poses obvious questions regarding the resources used in battery systems, notably lithium. As it happens, sodium, the world's 6th most abundant element, has similar qualities to Lithium. Sodium-ion batteries are safer, more sustainable, and cheaper (**40-80 USD/kWh for Na-ion** vs **120 USD/kWh for Li-ion**). Their lower energy density (**160-200 Wh/kg** vs **250 Wh/kg**) makes them a strong competitor for BESS where space and weight are less of a concern than in electric vehicles (EV) applications.

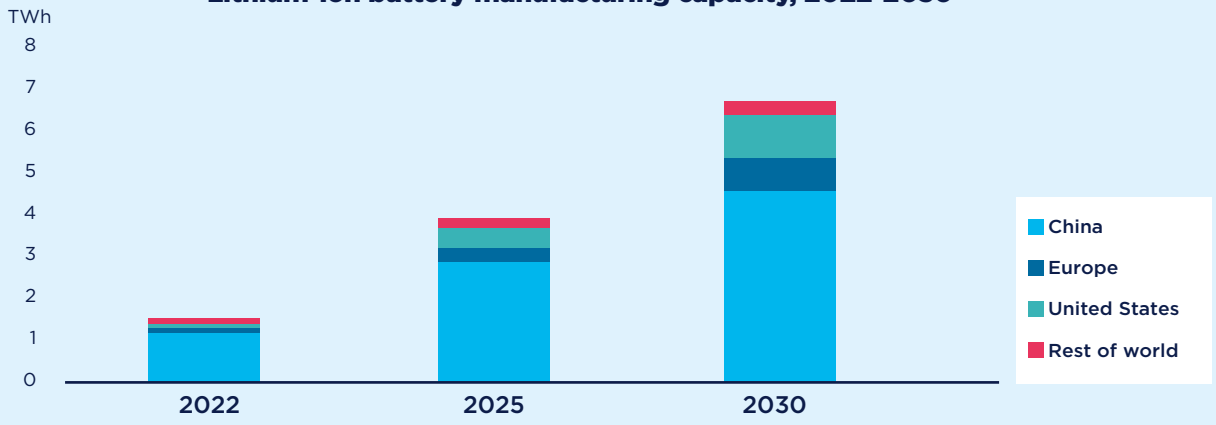
We expect global usage, with the biggest investment in manufacturing to come from China, but also large growth in the US. According to the IEA, there are concerns that the world could face a lithium shortage. An electric car requires around 8kg of lithium while worldwide reserves stand at about 22 million tons and not all the world's lithium can go to EV batteries.

CASE STUDY: MAERSK IS LEVERAGING BIOFUELS AND GREEN AMMONIA TO ACCELERATE TRANSITION

Shipping accounts for up to 3% of global greenhouse gas emissions. To decarbonise the shipping sector, the most promising lever is the use of alternative low-carbon/zero-carbon fuels, but for the moment, incurring the carbon cost for companies is cheaper than running on green fuels.

Maersk, contrary to many other shipping companies, has announced that it will not use transition fuels such as liquefied natural gas (LNG), but will instead leapfrog to net-zero fuels, including biofuels and green ammonia – which are advocated by the IEA and its Net Zero scenario. As such, Maersk has one of the sector's most ambitious decarbonisation strategies, with the goal of becoming carbon neutral by 2040.

Lithium-ion battery manufacturing capacity, 2022-2030



Source : IEA

AI FOR SMART EMISSIONS MANAGEMENT

Driven by regulatory and investor pressure on companies to disclose emissions, carbon accounting software is projected **to grow from $15.31 billion in 2023 to $64.39 billion by 2030, at a CAGR of 22.8%.** Baidu **claims** that AI is set to contribute 70% of China's 2060 carbon targets. However, to unlock the power of quantum-entangled AI for carbon accounting and optimisation it is first necessary to **understand the process itself**. "Very few currently track emissions data of sufficient quality for effective decarbonisation – without this, you're building on sand," says Baringa's emissions expert Hugh Greene.

This market is driven by reporting regulations and investor disclosure requirements, so we expect biggest market to be Europe, although Chinese tech firms are also developing solutions.

GREEN STEEL

The global market for steel **was valued at $1,676.24 billion in 2022, expected to grow at a CAGR of 3.8%** from 2023 to 2030. Most steelmaking today relies on vast amounts of coal, contributing around **8% to total global CO_2 emissions,** the most of all heavy industry sectors. "Green Steel" broadly refers to steel production that does not rely on fossil fuels. The nascent technology had a market value of **$182.7 million in 2022, forecast to reach $120,004.8 million by 2030, a CAGR of 125.1%.** Drivers include decarbonisation efforts in Europe, followed by anticipated uptake in Asia.

Initially expected in Europe, but there is huge potential in Asia where the vast majority of the world's existing steel is produced (China). There is also a big opportunity for the US steel market, as green hydrogen production is so well funded under the IRA.

CARBON CAPTURE AND STORAGE

To meet IEA targets, Carbon Capture and Storage (CCS) must grow from **45.9 $MtCO_2$/year in 2022 to 320.9 $MtCO_2$/year in 2030.** However, the path to success is by no means smooth. Obstacles to development include **extremely high cost** and **questionable benefits.** Most capture plants today are **energy intensive and require complex infrastructure.** Estimated annual investment **of $120-$150 billion by 2035** is required. But newly developing **solid-electrolyte reactor** technology could help. Consisting of basically just water and the electricity it takes to power a 50w lightbulb, the device can capture **10 – 25 litres of high-purity CO_2 per hour** at much lower cost.

Again, big potential exists in the US due to IRA subsidies, however we observe a stunted development to date, and the IEA's latest 1.5°C pathway doesn't rely as much on the technology due to uncertainties.

ALTERNATIVE MARINE FUELS

Maritime transportation is responsible for **3% of global emissions.** Alternative marine fuels ('alt-fuels', i.e., non-fossil) are projected to grow from **US$3.8 billion in 2021 to US$218.1 billion in 2031, a 50.2% CAGR,** predominantly in the APAC region. Demand is driven **by regulation and pricing on carbon,** and IMO targets of **5%-10% zero-emission fuels by 2030.** Currently **only 3 ports worldwide offer alt-fuels** – mostly methanol, which requires minimal **modifications to ships and port infrastructure, can be synthesised from multiple renewable sources, and meets expanding ultra-low air pollutant** regulations.

We expect the biggest market to be Asia (global marine fuel-bunkering hotspots) for infrastructure investment, but also anticipate high demand in Europe due to the inclusion of marine traffic in the EU Emissions Trading System (ETS).

The IRA and the EU Green Deal Industrial Plan are accelerating sustainability technology further and pushing the agenda towards Nationally Determined Contribution (NDC) targets. Despite their development, however, it is still unclear what actual impact these green technologies will have on the carbon reduction trajectory. This creates investment uncertainties, pitting well-known tech that will be part of the equation in any case (e.g., renewable energy, building retrofitting, electric vehicles) against technologies in development with an as-yet undetermined role in decarbonisation efforts (e.g., carbon capture, hydrogen).

2. Staying the course on climate with a net zero compass

As the planet has just experienced the world's hottest summer on record and an unprecedented acceleration in the occurrence of extreme events, consensus is broader than ever on the direction of travel. Net zero is not a luxury but an absolute necessity.

Every investor is concerned by this reality. The physical impacts of climate change and the various policy responses involved – decarbonisation plans by countries and businesses – currently have and will continue to have a dramatic impact on investment portfolios.

Against this backdrop, our conviction is clear: the risks and opportunities are just too high and cannot be ignored. Defining a climate change strategy is a must for long-term investors.

Net zero investors that are moving ahead of the curve with explicit alignment and contribution targets (defined below) are laying the foundations for stronger portfolio resilience and future portfolio growth.

While staying the course and implementing climate transition plans, savvy investors should beware: the transition will be turbulent, and its economic impact will be unevenly spread, with episodes of heightened political and social tensions. In such an environment, a long-term mindset and sound risk management must prevail.

A. Our take on the Global Stocktake

"The era of global boiling has arrived"

António Guterres, UN Secretary General.

At the time of writing, the United Arab Emirates are about to host one of the most important Conference of the Parties (COP) to date. How important? **The outcomes of the first Global Stocktake (GST) will be presented at COP28. This is the world's first exhaustive check-up on progress towards meeting the objectives of the 2015 Paris Agreement.**

The GST will show that global CO_2 emissions levels have exceeded interim targets and are off-target for the near-term goals of 2030. This has far-reaching implications for maintaining the 1.5°C target of the Paris Agreement a realistic option. While parties will have to work on updated NDCs for 2035, we have summarised the technical, financial and political actions that are necessary to correct the course of global CO_2 emissions before time runs out, and the most significant achievements so far.

The International Energy Agency (IEA) published a revision of its **Net Zero Roadmap** in October 2023. To meet the 1.5°C target calls for a rapid acceleration of large-scale decarbonisation of the economy. In practical terms, this means that by 2030 we need to see:

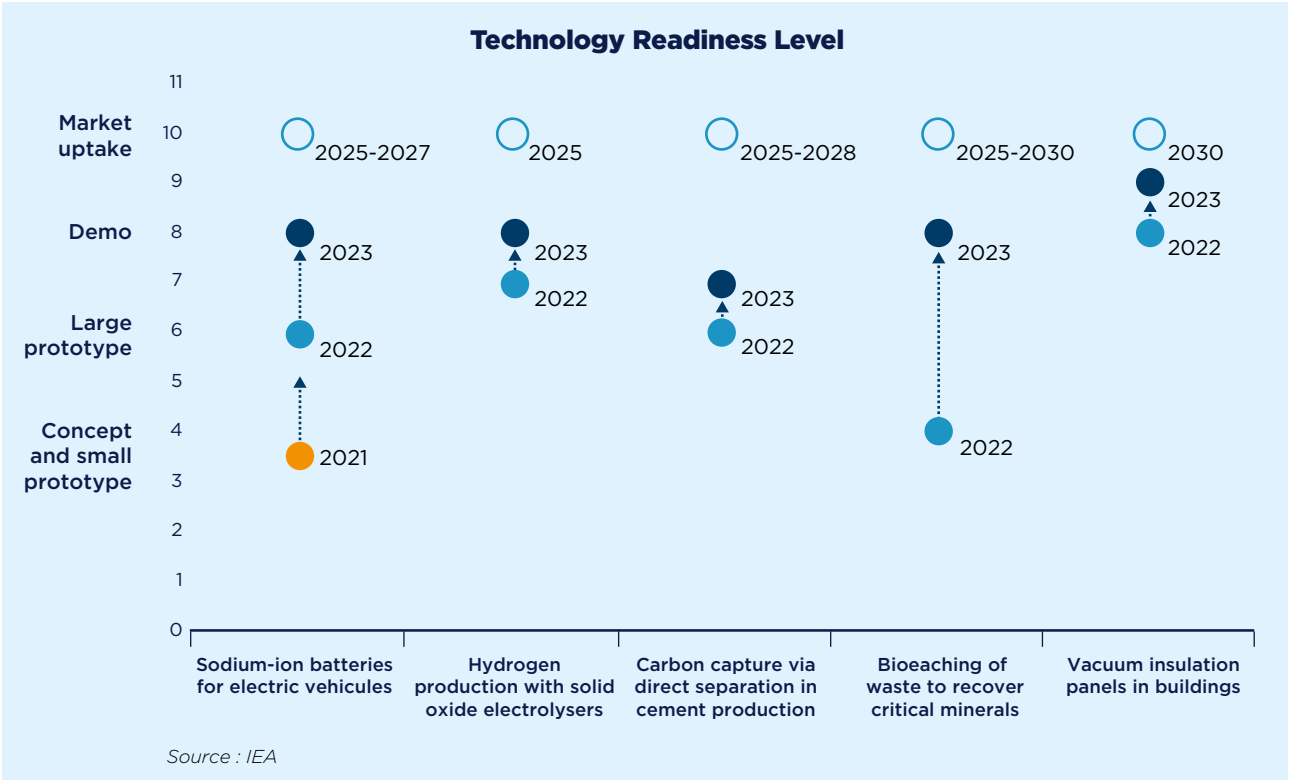
- 3x growth of installed renewables capacity
- 2x improvement in energy intensity
- 75% reduction in methane emissions from fossil fuel operations.

To realise the decarbonisation goals above, investment must shift from fossil fuel activities to clean energy investment. According to the International Energy Agency, annual global clean energy spending has to rise from $1.8 trillion in 2023 to $4.5 trillion by 2030. The **Energy Transition Commission** estimates that "around $3.5 trillion per year of capital investment will be needed on average between now and 2050 to build a net-zero global economy, up from $1 trillion per annum today. Of this, 70% is needed for low-carbon power generation, transmission, and distribution, which underpins decarbonisation in almost all sectors of the economy."

According to the IEA, while the clean electrification movement is still at an early stage given the scale of the transformation needed, 2022 and 2023 may very well be seen in hindsight as inflection points:

- Electric vehicle (EV) sales grew by 55% in 2022, reaching 10 million units, and 2022 is on track to be another record year, with a projected 14 million units sold. For the first time ever, announced manufacturing capacity for electric vehicle batteries is sufficient to fulfil expected demand requirements in 2030 under the Net Zero Emissions by 2050 (NZE) Scenario. The greater availability of chargers (capacity has doubled in the last two years) and the emergence of EV charging standards in the US (NACS) and in the EU (CCS2) will accelerate the uptake.
- Heat pumps saw another record year in 2022 with 11% growth in sales. This is close to the 15% average compound annual growth needed to fully align with the Net Zero Scenario.
- On the green hydrogen front, electrolysers' installed capacity grew by more than 20% in 2022 worldwide, and could reach almost 3 GW in Europe by the end of 2023, a more than four-fold increase in total capacity compared to 2022. European electrolyser project proposals alone should not be far from the EU's target of 6 GW of capacity by 2024 according to S&P Global Platts Analytics.
- Nuclear capacity additions grew by 40%, with 8 GW newly installed. While higher deployment is needed in the Net Zero Scenario, the growth seen in 2022 represents a clear step forward after capacity additions remained flat from 2019 to 2021.
- Solar PV has become the first renewable energy technology on track with the Net Zero Emissions by 2050 (NZE) Scenario.

We also expect private capital availability and debt financing capacity to grow significantly as Technology Readiness Level (TRL) in many Net Zero technologies progresses:



Source : IEA

These decarbonisation goals will require significant involvement by governments. To accelerate and make 2030 objectives a reality, they will need to:

- Support financing for new and not-yet profitable technologies
- Facilitate development of large infrastructure projects (e.g., renewables' project permitting)
- Adopt climate policies that may significantly impact population habits

The outcome of the GST exercise is likely to cause disagreement between signatory governments over re-statement of NDCs, financing of the transition, and the balance of global trade. The enormity of the challenge ahead cannot be overstated, nor can the potentially difficult decisions governments must make to overcome them.

For 1.5°C to remain a reality, it is essential that high-income countries work together across party boundaries and ideologies to do what is necessary to create a scenario in which low- and middle-income countries can participate at their own pace. In particular, alignment will require 80% and 60% CO_2 declines in advanced and developing economies by 2035, respectively.

"It's not a question of 'if', it's just a matter of 'how soon' - and the sooner the better for all of us."

Fatih Birol, IEA Executive Director.

To reduce the uncertainty faced by financial institutions and private companies, governments must issue and maintain ambitious climate-related policies. Political uncertainty has already contributed to some fragmentation of global financial net-zero alliances and initiatives. With many key electoral contests scheduled for 2024, hopes of keeping 1.5°C alive depend on policymakers to treat this as a priority in their political agenda, starting from COP28.

B. Alignment vs. Contribution: two complementary goods?

Successfully decarbonising our economy requires a dramatic shift in both our production systems and consumption patterns that can only be achieved if governments, businesses and the wider financial system are aligned. Asset managers, therefore, also have a key role to play in supporting the transition of the economy to a low-carbon model and should make the most of two critical levers: capital allocation and engagement. Net zero investors should gradually allocate capital towards assets tied to carbon reduction pathways compatible with ambitious climate goals, while engaging stakeholders in a way consistent with these goals.

This poses several challenges for investors, as it requires not only the assessment of climate-related risks but also the development of net-zero investment frameworks, underpinned by a sensible theory of change and articulated with the duties and convictions borne by the institution in mind. The outcome should support gradual, but meaningful capital reallocation and fully capitalise on stewardship activities, while aiming to meet best accountability and transparency standards.

Net zero frameworks usually entail strategies and indicators that contain:

- **An alignment dimension:** which aims to identify companies that have committed to modifying their business models to gradually align with a net zero trajectory.
- **A contribution dimension:** which aims to favour investments that accelerate the deployment of solutions contributing directly to moving the global economy towards net zero by 2050.

The two dimensions can provide valuable insights into the transition profile of issuers, both in terms of climate ambition, through alignment indicators, and in terms of climate action, through contribution indicators (reality checks). The latter, using asset-level approaches such as taxonomies or green bonds, helps identify issuers that are currently providing or developing products and services that contribute to the net zero target. Alignment indicators are a necessary complement to ensure coherence of action, as they go beyond screening activities/assets by integrating a forward-looking assessment of a company's transition plan. An integrated approach is essential when addressing the alignment and the contribution dimensions, as they cannot be effectively considered in isolation. This approach ensures a comprehensive and cohesive strategy that maximises the potential for positive real-world impact.

INVESTMENT INSIGHTS: NET ZERO INVESTING AND ITS IMPACT ON A 60-40 ALLOCATION

*In the paper **"Net zero investing and its impact on a 60-40 allocation,"** Amundi experts state that embracing a net zero path will impact investors' asset allocation in two ways:*

- *Strategic asset allocation decisions will need to consider how the transition will impact economic and financial variables and thereby, the returns investors can expect in the future across asset classes.*
- *Investors will have to reassess traditional asset allocation approaches to reflect the fundamental shifts in the world's economy caused by climate change.*

Key findings suggest that the short-term financial cost of integrating net zero considerations into investors' asset allocation is limited, and should be offset over the long run as corporates gradually transition towards low-carbon models. The results also indicate that embracing climate considerations can have positive effects for investors over the long-term.

2024 should be the year of:

- Much needed attention to scope 3 data quality and accounting rules, and their implications for the portfolio decarbonisation process. Policymakers, regulators and standard setters will start gradually pushing in scope 3 – subject to materiality assessment – in disclosure requirements. While data relating to scope 3 is still imprecise and difficult to compare today, new reporting requirements should help investors to gradually integrate scope 3 into the assessment of transition-related risks, as well as into the setting and monitoring of net zero targets.
- Growing attention to the impact of a prolonged decoupling between portfolio decarbonisation targets and the actual real economy pathway on portfolio concentration and sector and risk factor allocation.
- Expanding net zero investment frameworks to a broader set of issuers such as sovereigns and unlisted companies. As methodologies, disclosure and data become more reliable within traditionally less transparent asset classes, the capacity of investors to embark a larger scope of their portfolio on net zero targets should improve.

C. Our views on the assessment and management of tail-risk

Climate-related risks fall into two categories: transition and physical risks. Physical risks result from adverse weather events, such as floods, earthquakes, and fires, while transition risks result from policy action taken to transition the economy to a low-carbon model. The assessment and management of climate-related risks in investment portfolios has been a priority for Amundi in recent years. As concerns tail-risk analysis (or worst-case scenarios) of climate change, research shows that the risk is much higher for physical risks than transition risks.

As climate-related policies are the primary driver of transition risks, these risks are somewhat limited because it is usually understood that governments are unlikely to implement regulations detrimental to their economies. Consequently, the likelihood of unanticipated extreme financial shock due to transition remains relatively mitigated in standard models, even though non-negligible in delayed scenarios: the more ambitious and delayed the transition is, the riskier it may be for the financial market.

To estimate transition risk at the portfolio level, at Amundi we have developed an **in-house stochastic approach to measure climate value-at-risk** accounting for numerous possible configurations. This new value-at-risk measure is particularly suited for extreme risk management in investment portfolios in a forward-looking environment.

WORKING PAPER: FROM CLIMATE STRESS TESTING TO CLIMATE VALUE-AT-RISK: A STOCHASTIC APPROACH

*The paper **"From Climate Stress Testing to Climate Value-at-Risk: A Stochastic Approach"** proposes a methodology for climate stress testing that takes into account uncertainties and the cascading effects of carbon pricing, recognising that each sector will pass some of its rising costs through the supply chain, known as the pass-through effect. It suggests using explicit and exogenous flat carbon taxes instead of shadow carbon prices, leveraged, for example, in the Network for Greening the Financial System(NGFS) stress-testing scenario, that may be implicit and endogenous.*

The study analyses the economic impact of an incremental flat carbon tax and explores the effect of carbon taxation by playing with two key elements: the aforementioned pass-through parameter and the level of coordination (varying regional taxes only). Two scenarios are then studied: a global tax and a regional tax applied in the EU, the US or China.

- *In the case of a global tax, we find that each $100/tCO$_2$e incremental tax induces a total cost of 5% of GDP and a CPI inflation rate of 3.5%*
- *In the case of a regional tax, we observe rising inflation and significant costs within the region, but moderate inflation and low costs outside the region. On average, 90% of the total cost is borne by the countries implementing the tax, while the impact on the rest of the world is only 10% (e.g., for the EU, a $500/tCO$_2$e tax leads to a cost of 15% of GDP in EU countries vs. less than 0.5% for non-EU countries)*

These breakdown figures raise the issue of competitiveness distortions when taxation is not coordinated across countries. Specifically, sectors or entities with lower emissions may bear a larger burden as they face increased costs without the ability to pass on a significant portion of the carbon price. Moreover, the regressive nature of the carbon tax could potentially exacerbate income inequality, affecting households unequally. It is therefore crucial for policymakers to consider these potential cascading effects and the differential impacts across sectors when designing climate policies. A comprehensive understanding of these dynamics is essential for ensuring a successful and equitable transition to a sustainable low-carbon future.

On the physical risks side, the increase of financial losses is already observable. This is caused by acute extreme weather events, such as floods, drought and storms, and chronic variation of extreme climate conditions, such as chronic heat waves. Acute and chronic physical risk is expected to increase in frequency and intensity by 2050 and grow exponentially more severe after that if we do not reduce the intensity of economic activity. To help face and mitigate this growing risk, it is important to both reduce GHG emissions as well as increase investment in climate change adaptation.

As for transition risk, by adopting a stochastic approach for modelling physical loses potentially induced per degree of warming, we can estimate physical tail-risk at the portfolio level.

Tail risks should not be underestimated by investors. As extreme events occur more often, the likelihood of more stringent and impactful pro-climate policies increase. This may also be accelerated by the emergence of alternative net zero technologies, more mature and progressively less costly, that will reduce the political cost of certain climate policies. Companies that are lagging behind, and currently benefitting from a delayed answer may be the most impacted by such a scenario.

3. In need of a general equilibrium theory of sustainable and inclusive growth?

The materiality of environmental factors such as climate change on financial evaluations is increasingly recognised. However, as climate impact assessments continue to progress, it is becoming critical to advance on the integration of other broader environmental considerations and a dynamic understanding of Earth's systems. "Planetary boundaries," a concept that delineates the environmental limits within which humanity can safely operate, provides a compelling framework enabling to integrate the dynamic feedback loops between the different processes that regulate Earth systems.

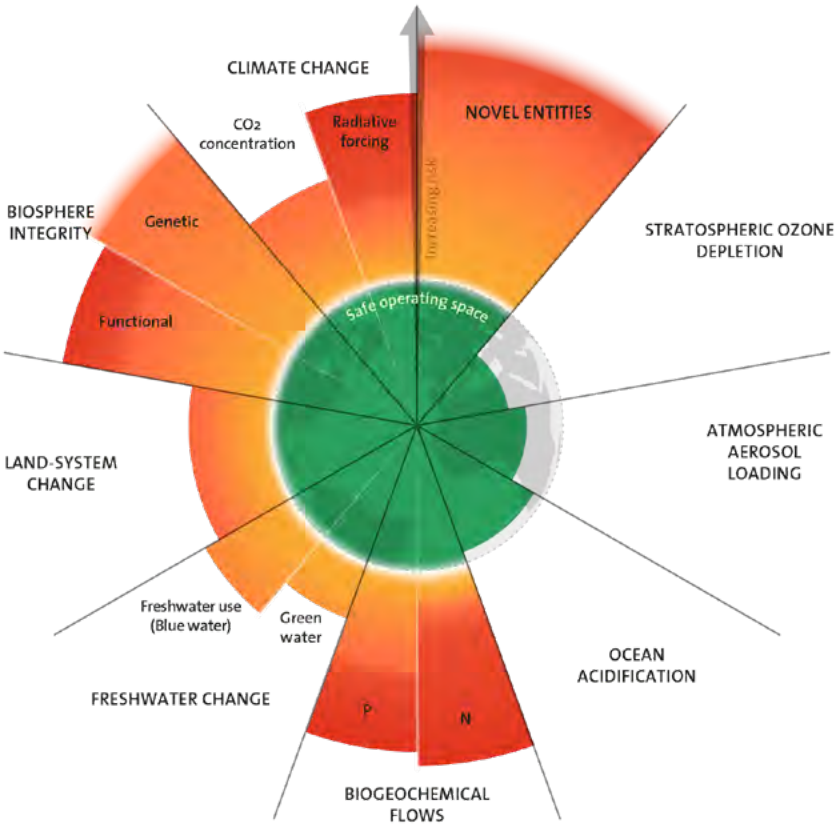
At the same time, beyond the natural ecosystems, it is important to remember that the transition to a low carbon economy also affects people. Some geographies are more impacted than others due to the resources available for adapting to and mitigating climate change impacts, as well as different economic situations. In order for the transition to succeed at a global scale, we must ensure the transition is just and that each country is doing its part at both the macro and micro levels.

A. Planetary boundaries should emerge as the leading overarching framework for responsible investors

For the first time in September 2023, all nine planetary boundaries have been assessed, and six of them have already been transgressed.

> *"The stability and resilience of the Earth system and human well-being are inseparably linked, yet their interdependencies are generally under-recognised; consequently, they are often treated independently."*
>
> *Rockström, J., Gupta, J., Qin, D. et al. Safe and just Earth system boundaries. Nature 619 (2023).*

Planetary boundaries assessment as of September 2023



Source: Stockholm Resilience Centre (September 2023).

"Tipping points"[1] narratives make it possible to better understand the non-linear risk weighing on climate factors. Temperature increase and rising CO_2 emissions can trigger negative feedback loops that will further amplify climate change, notably by weakening the removal of carbon from the atmosphere by natural carbon sinks. To provide a couple of simple illustrations:

- The ocean can dissolve less CO_2 at higher temperatures
- Droughts and excess tropical warmth limit extra plant growth.

Planetary boundaries help in analysing the interconnected risks between the different dimensions, with negative and positive feedback loops and the existence of ecological tipping points.

ESG analysis already takes into account several planetary boundaries in standard analysis. Examples include land-system change (deforestation), freshwater change (water footprint), novel entities (plastic pollution, PFAS, etc.), and biosphere integrity (biodiversity footprint). Assessing issuers' exposure to planetary boundaries based on a double materiality risk assessment enables integration of biodiversity, climate and other nature dimensions into a single overarching framework.

B. Towards a better assessment of portfolio's impact on biodiversity

Biodiversity is defined as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part" *(Convention on Biological Diversity).* Biodiversity is essential for the well-being of our societies and for a healthy economic system: it is estimated that **$44 trillion** of economic value generation, over half of the world's GDP, is dependent on biodiversity. According to the World Bank, **global GDP could drop by 2.3% per year** due to biodiversity losses, with low-income countries losing between 10% and 20% in real GDP per year.

Growing awareness of society's reliance on biodiversity has spurred collective action to halt its loss, moving natural capital preservation from a topic reserved for corporate social responsibility to a key material and financial risk. We have recently observed increased global policy efforts, such as the commitment of nearly 200 governments to set biodiversity preservation goals and targets under the Kunming-Montreal Global Biodiversity Framework (GBF), and national regulations aimed at driving investments from both the public and private sectors towards technological innovation, green transition plans and biodiversity-oriented strategies.

Despite the growing attention to biodiversity, action by companies and investors has so far remained limited due to data collection and reporting challenges. The OECD reported that **funding for climate change mitigation accounted for 90% of funds allocated towards environmental measures, while biodiversity amounted to only 7%.** However, this is expected to change.

■ REPORTING

We expect biodiversity-related reporting to increase in the upcoming years. Target 15 of the GBF calls for businesses and investors to monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity. Companies and investors have started to signal their intention to adopt the Taskforce for Nature-Related Financial Disclosures (TNFD) recommendations, which were finalised in September 2023. The TNFD was designed to be compatible with existing reporting frameworks, to ensure market usability, with a science-based approach, and to reflect the inherent interconnectedness of climate and nature.

The TNFD and Science Based Targets Network (SBTN) also recently co-developed the LEAP[2] approach, building on existing assessment frameworks to link highly regarded scientific datasets to assessments tools, and have released joint guidance on target setting for corporates, including recommendations for land and freshwater targets.

1. Definition of tipping points: in climate science, these refer to critical thresholds that, if crossed, lead to large irreversible changes in the climate system.

DATA

We expect that as research progresses, regulations come into place, and companies start reporting on biodiversity, data will become more complete and accurate over time. Biodiversity is a complex issue that encompasses several dimensions, identified by both IPBES[3] and the Stockholm Resilience Centre. To fully assess a company's impact on biodiversity, data on all dimensions is needed, which makes the task more challenging.

To further address nature-related risks and drive necessary financing towards natural capital solutions will require investor access to better data and reporting from corporates. The TNFD was designed to help corporates and investors build on their existing reporting, but with a pathway to increase nature-related disclosures over time. The progress made in 2023 has been substantial, and will set the scene for 2024 and beyond, enabling investors to start collecting more data and better evaluate nature-related risks.

AMUNDI'S BIODIVERSITY FRAMEWORK

To overcome the temporary lack of data and reporting on biodiversity, Amundi has developed a proprietary investment framework to measure and monitor portfolios' impact on biodiversity. Our ambition for this framework is to develop new thematic investment strategies focused on biodiversity.

The framework relies on three pillars

1 AVOID
Avoid investing in companies with high negative impact on biodiversity

2 REDUCE
Minimize negative impacts on biodiversity by reducing the global portfolio biodiversity footprint

3 FAVOR
Protect biodiversity and natural ecosystems by investing in corporate leaders

C. Why 'just' a transition is not enough: ensuring the transition to a low-carbon economy is acceptable to society

Just transition is defined by the International Labor Organisation (ILO) as "greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind." A just transition is essential to managing the socio-political aspects of the transition and to ensuring the economy and society are not disrupted by the shifts it entails. For example, while the transition is expected to deliver a net gain of **24 million jobs**— the 103 million jobs that may be created by transition are partially offset by the nearly 78 million that will be lost as demand for skills changes.

Moreover, the transition will have a different impact on higher- and low-income populations. Meanwhile, **773 million people** still lack access to electricity, and **$2.3 billion** of investment will therefore be needed in off-grid renewables to ensure universal energy access and affordability (this number was $0.5 billion in 2021). Another example is investments in the electromobility sector: Europe, China and the US make up the biggest proportion of electric vehicles (EV) sales, with other regions left behind. EV affordability also remains a challenge, even in advanced economies.

2. Locate, Evaluate, Assess, and Prepare.
3. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

Stakeholders affected by the transition include:

- Workers (with jobs at risk or specific skills in greater demand),
- Suppliers (whose own businesses and employees may be affected as lead companies pursue decarbonisation),
- Communities (which may lose income or find their way of life disrupted as transition reshapes industry geographies), and
- Consumers (for whom the affordability and accessibility of products and services will be key concerns).

Specific stakeholder considerations will differ across sectors and locations, but regardless of these, companies need to ensure that they identify and address the needs of vulnerable groups, which can include women, people with disabilities, indigenous people or low-income consumer groups.

Stakeholders in the just transition

Impact	Loss of jobs, skill shortages, infringements upon workers' rights, discrimination against vulnerable workers	Loss of income, shortage of skills/resources/technology, social risks in supply chains	Loss of community income, additional costs transferred onto community, infringements upon community rights	Lack of preparedness for technological and price shifts, access and affordability barriers
Stakeholders	**Workers**	**Suppliers**	**Communities**	**Consumers**
Mitigation	Involve by anticipating employment shifts, respecting rights at work, ensuring dialogue, developing skills, protecting health and safety and providing social protection, including pension and benefits	Involve suppliers by strengthening local supply chains, applying labour, human rights and environmental DD across the supply chain	Understand the effects for spillover communities, respecting rights around impacts and involvement, focus on vulnerability, enable innovations	Prioritise implications for consumers with inadequate access to sustainable goods/services, remove barriers to transition (including financial access)

Vulnerability (e.g., migrants, workers in the informal economy, indigenous and tribal peoples, women, children and youth, communities in countries lacking social protection, disadvantaged consumers)

Source: Amundi

SETTING UP A JUST TRANSITION FRAMEWORK

The objectives and content of a just transition strategy will differ according to whether a business is transitioning out (moving away from a high-emissions model), transitioning in (offering 'green' products and/or services), or pursuing adaptation (applicable to most sectors). For all, however, the process needs to begin with understanding the company's climate strategy and the social assumptions it entails. For instance, will the technologies it relies on make current workforce skills obsolete, and might greener products alienate consumers who will no longer be able to use them? Companies also need to ensure they already have the foundation in place to identify and assess social factors, such as respect for human rights (including labour rights), social dialogue, decent working conditions and business ethics demonstrating societal responsibility.

Then, once they've taken stock of their climate goals and stakeholder priorities, companies can determine what social transition opportunities and risks they face to develop a specific just transition strategy, consistent with the risks and opportunities they face. According to ***the Grantham Research Institute on Climate Change and the Environment,*** *a just transition strategy should cover:*

- *governance and board oversight of just transition,*
- *risk (and opportunity) assessment and financial planning,*
- *actions plans for the four key stakeholder groups, and*
- *policies and partnerships, including public advocacy, that promote just transition.*

Actions plans need to consider place-specific realities and incorporate regular stakeholder dialogue and feedback.

Lastly, companies need to set time-bound and specific just transition objectives and commit to regular reporting on their progress.

Key implications for companies and investors: Formal expectations, supply chains and just resilience in the spotlight.

Against a backdrop of policy uncertainties and emerging opportunities, coupled with inequality, societal expectations are building for the green transition to deliver on its promise of more decent and sustainable jobs. We expect the private sector to face increasing demands from stakeholders, including investors, to demonstrate concrete evidence of efforts to deliver an inclusive transition. To date, investor engagement with companies has often focused on raising awareness and/or risk mitigation at the level of individual projects. But, with guidance from the **Impact Investing Institute** and the **Transition Plan Taskforce** published in 2023, there is now considerable scope to formalise demands and quantify just transition objectives. We also expect more scrutiny of corporate commitments to supporting their supply chains through transition. According to a recent **UN Global Compact brief**, companies must pay more attention to risks of social disruption and climate change in supply chains, as well as supply chain transparency, and should integrate supply chain risk management through just transition principles, create market demand from the public sector and support capacity building and access to finance for small and midsize enterprises. Lastly, in light of increasingly uneven distribution of climate impacts across the globe and more frequent extreme events, more investment will be required in just resilience and adaptation, enhancing the capacity of society to persist, adapt and transform, in anticipation of and response to disruption and crises. Investors may use different ways of integrating just transition considerations into investment portfolios. According to the **Impact Investing Institute**, financial market actors should seek to advance climate and environmental action, while ensuring two other conditions are met: i) investments should not entrench or exacerbate existing burdens for vulnerable or marginalised groups and should thus seek to improve socioeconomic distribution and equity, and ii) financial actors should ensure stakeholders are heard and that their views and needs are taken under consideration, in an effort to increase community voice.

To address this need, Amundi has developed a dedicated 'Just Transition score', based on generic and sector-specific criteria, for each of the four main stakeholders involved in the transition: local communities, clients, workers and society at large. This score seeks to assess the efforts of companies in making the transition as inclusive as possible.

As data and methodologies take shape and regulatory demands for transparency increase, social and environmental topics beyond climate will have a greater impact on companies' strategies and valuation. Investors should expect, and push for, more data and associated targets from companies with the number of topics covered to increase over the next years. Nature and Just Transition considerations are critical lenses for responsible investment frameworks that should complement the net zero transition component. One sustainable objective cannot be achieved without progressing on the others, nonetheless, all three dimensions entail material risks at macro and micro levels that investors should be aware of.

4. Sustainable capital mobilisation in EMDEs: the coming of age of blended finance?

The investment required in emerging markets and developing economies (EMDEs) to reduce global GHG to net zero by 2050, which comes on top of other sustainable development financing needs, is estimated by the IEA to increase to $2 trillion per year by the end of 2030. Furthermore, we expect adaption needs – which are by nature less "bankable" – to grow significantly in the coming years, as EMDEs are particularly affected by climate change.

The investment gap between these needs and current funding has widened at a time of emerging market debt crunch. On the back of the war in Ukraine, global energy crisis and increase in DE policy rate, more than a quarter of EMDEs have effectively been locked out of international capital markets and all institutions suffer from tense financing conditions.

Given the limited fiscal space in most EMDEs, the International Monetary Fund estimates that the private sector will need to cover the vast majority of the investment needs mentioned above—between 80% and 90%. In this context, closing the sustainable financing gap through scalable blended finance mechanisms thanks to better collaboration between public-private actors is more important than ever.

EMDEs' BUSINESS IS EVERYONE'S BUSINESS

According to the IEA, emissions from Asia's emerging-market and developing economies, excluding China, grew more than those from any other region in 2022 (half of which due to coal-fired power generation). This is in line with what we observed over the past decade, where EMDEs accounted for over 95% of the increase in greenhouse gas (GHG) emissions.

However, when accounting for countries' emissions, the standard carbon accounting method – national inventory[4] – tells only one side of the story.

As industries in developed economies gradually decarbonise, we can expect a continued reduction in national inventories, supported by all the policy packages supportive of decarbonisation. However, 1/3 of the European Union's total carbon footprint is due to its imports[5]. Governments across the world must take a value chain approach and ensure that carbon-intensive manufacturing is not displaced abroad to developing countries with less stringent policies. An example of such efforts is the EU's Carbon Border Adjustment Mechanism (CBAM), which aims to set a price on the carbon emitted during production of goods entering the EU to limit this effect and encourage industrial decarbonisation both in Europe and abroad.

A. Sustainable capital market development in EMDEs

Green, Social, Sustainability (GSS+) bonds are a type of debt instrument issued by governments, supranationals, corporates and municipalities, the proceeds from which are used to finance or refinance eligible green and social projects. The asset class is crucial for channelling private investment toward the climate transition, as well as for promoting social development. The need for this type of funding is especially acute in EMDEs where fiscal resources are scarcer than in advanced economies.

GSS+ bond issuance in EMDEs should continue to grow as the energy transition gains traction and investor demand rises. Looking ahead, we expect this to be driven by an acceleration in the energy transition, a larger greenium (green bond premium) in EMDEs relative to advanced economies, and macroeconomic dynamics (high nominal rates in a context of weak economic growth) that are supportive of the fixed-income asset class in developing economies.

4. Accounting for emissions that are physically produced locally.
5. INSEE report - Insee Analyses 74, July 2022.

The **IFC-Amundi joint Emerging Market Green Bond Report** illustrates a central scenario, which forecasts 27% cumulative growth of green bond (GB) issuance in EMDEs excluding China over 2023–2024. In particular, we see GB issuance bouncing back in 2023 to grow around 14%, slowing to a more normalised increase in 2024 of about 11%.

In the medium term, we expect green bond (GB) issuance to be a key beneficiary from an acceleration in the energy transition driven by a greater sense of urgency around tackling climate change, with three high-potential jurisdictions to watch in 2024:

- **CHINA:**

The dominance of China's GB market follows several government initiatives aimed at widening the investor base and encouraging bank lending to energy transition projects. The China Green Bond Principles, released in July 2022, now require that 100% of the money raised through green bonds to be directed toward green projects versus 50% to 70% under the previous guidelines. If adopted broadly, these principles should alleviate investors' main greenwashing concerns.

- **INDONESIA:**

Over the year 2022, Indonesia increased its green bond issuance by a factor of 2.4 for a total of $2.6 billion, driven mainly by two sovereign issuances (worth $1.9 billion) following the publication of the country's Green Taxonomy in January 2022. This is due to Indonesia's ability to operate a climate budget tagging mechanism to track and evaluate public expenditures for climate mitigation and adaption, which has proven effective at preventing greenwashing and making Indonesian GSS+ assets more attractive to international fund managers.

- **INDIA:**

Despite lacklustre GB issuance in 2022, Indian policymakers spurred further development of the green bond market with the publication of India's **Sovereign Green Bond Framework** in November 2022. This was followed by India's landmark issuance of two sovereign green bonds in early 2023, which raised 160 billion Indian rupees, nearly $2 billion, and are likely to foster momentum in the broader domestic bond market**.**

Despite the good GSS+ market momentum, however, only a small portion of the climate funding raised is being redirected towards adaptation, which is unevenly developed across regions and sectors. In addition, public funding has become scarce, given the global macroeconomic context, and other sources of capital, which could be tapped from the private sector, will be needed to achieve sustainability goals**.**

B. Challenge of bringing in private investors and development finance trends to watch in EMDEs

According to the IPCC, private sector financing has been limited, especially in developing countries, but the private sector is more and more recognising climate-related risks. Innovations in adaptation and resilience finance, such as forecast based/anticipatory financing systems and regional risk insurance pools, have been piloted and are growing at scale. Nevertheless, there are still challenges to securing funding from private investors such as:

- Inadequate assessment of climate-related risks and investment opportunities
- Regional mismatch between available capital and investment needs
- Unattractive risk-return profiles, in particular due to missing or weak regulatory environments that are inconsistent with ambitions.

Scaling up climate adaptation and transition financing is particularly important for emerging market and developing economies as they are the most affected by climate change. The success of the transition at a global scale depends on the success of the transition in emerging markets. To quickly ramp up clean energy investment in emerging markets, public capital has a significant role to play, but it will not be sufficient on its own. Private capital needs to be leveraged and crowded in.

However, targeting recently developed solutions or solutions moving to scale is complicated

The scarring effects of successive crises are increasingly apparent, just as many countries are struggling to overcome high inflation, high debt, and significant financing shortfalls to provide basic services, support infrastructure and climate action, and address rising poverty, inequality, and fragility.
Statement by World Bank President Ajay Banga, IMF Managing Director Kristalina Georgieva, Morocco's Minister of Economy and Finance Nadia Fettah, and Bank Al Maghrib Governor Abdellatif Jouahri. October 2023.

for private investors, as they are unable to conduct a precise analysis of the risks involved and will overprice them or decline the opportunities. Blended finance presents an ideal solution for leveraging public capital to de-risk private investments and channelling private money.

Investments in EMDEs to support their transition to a low-carbon economy have so far been framed in terms of public financing from developed to developing countries. Investors can support the development of the energy system of countries in frontier markets in a way that is both beneficial for their economic development and the energy transition.

In this regard, initiatives to finance infrastructure-related projects are particularly popular. Following the creation of China's Belt and Road Initiative (BRI), the US and the EU have recently launched similar initiatives:

- The BRI, launched by Xi Jinping in 2013, is one of the most ambitious infrastructure projects ever conceived, with the aim to meet developing countries' needs while spurring economic growth. It was initially conceived to connect East Asia with Europe, with the development of land and sea infrastructure. Since then, the BRI has expanded to include connections to Africa, Oceania and Latin America. As of August 2023, the BRI is present in nearly 150 countries and invested $962 billion since its creation.
- The United States created the International Development Finance Corporation (DFC) in 2019. The DFC is a US government institution that invests in collaboration with the private sector primarily in development projects related to energy, healthcare, infrastructure, and technology in emerging markets. As of April 2023, the DFC had projects in over 100 low and middle-income countries across Africa, Latin America, the Indo-Pacific, the Middle East, Eastern Europe and Eurasia. At the end of 2022, the DFC had a total projected portfolio of $35.7 billion.
- Launched in 2021, the EU Global Gateway strategy was created to invest in infrastructure in EMDEs. Similarly to the US DFC, the Global Gateway is supported by the private sector. As of 2023, 90 projects were launched, and the European Commission aims to raise up to €300 billion in investments by 2027.

ILLUSTRATION: DEVELOPED ECONOMIES SUPPORTING THE ENERGY TRANSITION OF INDONESIA

The Indonesia Just Energy Transition Partnership (JET-P) was launched on November 2022 at the G20 summit and aims to decarbonise Indonesia's coal-powered economy. It is the second partnership of this kind, after the South Africa agreement launched in 2021.

This partnership aims to mobilise an initial $20 billion with a mix of public and private financing over three to five years. It has spearheaded Indonesia's new climate targets and just energy transition ambition plan, which include peaking power sector emissions by 2030, phasing out coal and reaching net zero emissions in the power sector by 2050. While the detailed investment roadmap will be published only later this year, the JET-P is seen a valuable opportunity to accelerate transition in a key geography by mobilising both private and public investors.

C. Multilateral Development Banks and Development Finance Institutions reform: a decisive year?

The G20, the international development community, and organisations across civil society have repeatedly called for in-depth reform of Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs) to address the immense financing challenges confronting the world. In fact, MDBs reform has been a major objective of the G20 since the group's first Summit in Washington D.C. in 2008, with the aim of enhancing the legitimacy, credibility and effectiveness of MDBs. During the 2010 Toronto Summit, G20 leaders welcomed tethering capital increases to institutional reforms for the major MDBs.

Statement by World Bank President Ajay Banga, IMF Managing Director Kristalina Georgieva, Morocco's Minister of Economy and Finance Nadia Fettah, and Bank Al Maghrib Governor Abdellatif Jouahri. October 2023.

Twelve years later, an Expert Panel convened by the G20 published a pivotal report on the need to reform MDBs' Capital Adequacy Frameworks to maximise the impact of MDB lending while maintaining robust credit ratings. This eventually led to recommendations framed under a triple agenda for MDB reform, published during the India G20 Presidency:

- Adopting a tripartite mandate of eliminating extreme poverty, boosting shared prosperity, and contributing to global public goods
- Tripling sustainable lending levels by 2030
- Creating a funding mechanism that would permit flexible and innovative arrangements for purposefully engaging with investors willing to support elements of the MDB agenda.

The reform of MDBs and DFIs may potentially have enormous impact for climate mitigation and adaptation in EMDEs:

- On the one hand, it could incentivise private investors to invest in EMDEs' climate resilience, through a pipeline of bankable projects and assets with environmental credibility. Ultimately, this incentive will have to be the result of a transfer of risks away from the private sector and onto the public sector. As a result, expanding MDB and DFI lending programs to meet the growing development and climate needs of EMDEs could lead to potential credit downgrades for these institutions.
- On the other hand, it must be ensured that the transfer of risk away from the private sector does not translate into negative impacts for states and their citizens. Potential risks to social equality and to the resilience of public systems will need to be taken into account in the design of fair reforms of the international financial system. In this regard, MDBs and DFIs are expected to have an important role in the newly created Loss and Damage Fund, which places climate justice at the centre of climate financing.

Another call for reform, led by Barbados' Prime Minister Mia Mottley, has also been gaining steam. The "Bridgetown Initiative" calls for an overhaul the global financial system to address critical questions on how to promote private climate investment in developing economies. The initiative proposes a restructuring focused on three pillars:

- Providing emergency liquidity and unblocking existing sources of capital. The core of the proposal is to break the deadlock on climate financing by redirecting private savings through a Climate Mitigation Trust.
- Expanding the lending practices of MDBs, notably by implementing G20 Capital Adequacy Frameworks Review recommendations in MDBs' lending definitions, processes and governance.
- Making the international financial system more shock absorbent by including "natural disaster and pandemic clauses" in all debt instruments that suspend debt service for two years after a disaster and introducing "loss and damage" grants to support climate-vulnerable countries.

The IMF's announcement in late 2022 of the operational launch of the Resilience and Sustainability Trust (RST) is a step in the right direction demonstrating that the international financial system can reform. The RST aims to complement the IMF's existing lending toolkit by focusing on structural challenges such as climate change that entail major macroeconomic risks. It will channel Special Drawing Rights (SDRs), contributed by countries with strong external positions to countries where the financing needs are the highest, providing policy support and affordable longer-term financing to strengthen these countries' resilience and sustainability. While encouraging, operationalisation of the fund will not in itself be sufficient. The RST must be positioned to play a truly catalytic role, sending a positive signal to the private sector of the IMF's commitment to sound economic policies and thus to a favourable investment environment.

WHAT IS STILL MISSING FROM MDBs AND DFIs REFORMS

At Amundi, we believe that the global agenda to reform MDBs and DFIs should improve on the following elements, specifically for what concerns the deployment of blended finance to further mobilise capital for sustainable development in EMDEs:

- *Increase transparency and consistency in the data issued by MDBs and DFIs as well as information disclosure practices to support private capital mobilisation in blended finance structures at scale.*
- *Expand and standardise full and partial guarantees provided by DFIs to cover a wider range of financial instruments (such as syndicated loans or Green, Social and Sustainability bonds) to strengthen consistency across IFIs and DFIs.*
- *Addressing the sustainable financing gap though capital market mobilisation requires:*
  - *An effective chain of intermediaries from the existing capital pool to project development on the ground. Local development finance institutions have the potential to play a key role in scaling development finance with larger financial participation. To do so efficiently, this will mean tackling governance issues and shifting up a gear in capacity building.*
  - *Thinking beyond funds to standardise financial instruments. Achieving scale in time calls for tapping existing pools of capital.*

To quickly ramp up needed clean energy investment in EMDEs, public capital has a significant role to play, but it will not be sufficient on its own: private capital needs to be leveraged and crowded in. Blended finance appears an ideal solution for leveraging public capital to de-risk private investments and channel massive flows of private money.

To address critical questions on how to stimulate private climate investment in EMDEs, several reforms to Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs) have been proposed in recent years.

5. EU SUSTAINABLE FINANCE ACTION PLAN

We have achieved more transparency: will we see more capital flowing in to support sustainable and inclusive growth?

The EU has long recognised the role of finance in steering the transition to a more sustainable and resilient economy. More specifically, sustainable finance is critical to delivering on international policy objectives such as the European Green Deal, the United Nations Sustainable Developments Goals, and the 2015 Paris Agreement. The 2018 EU Sustainable Finance Action Plan (SFAP) was designed to further increase transparency and upgrade standards .

Amundi shares the conviction that financial actors are in a unique position to make a significant impact on closing the sustainable transition financing gap and that EU regulations have proved to be a powerful tool for accelerating the mobilisation of sustainable finance. The Sustainable Finance Action Plan pushed the EU regulatory framework landscape forward, strengthening EU leadership in this area.

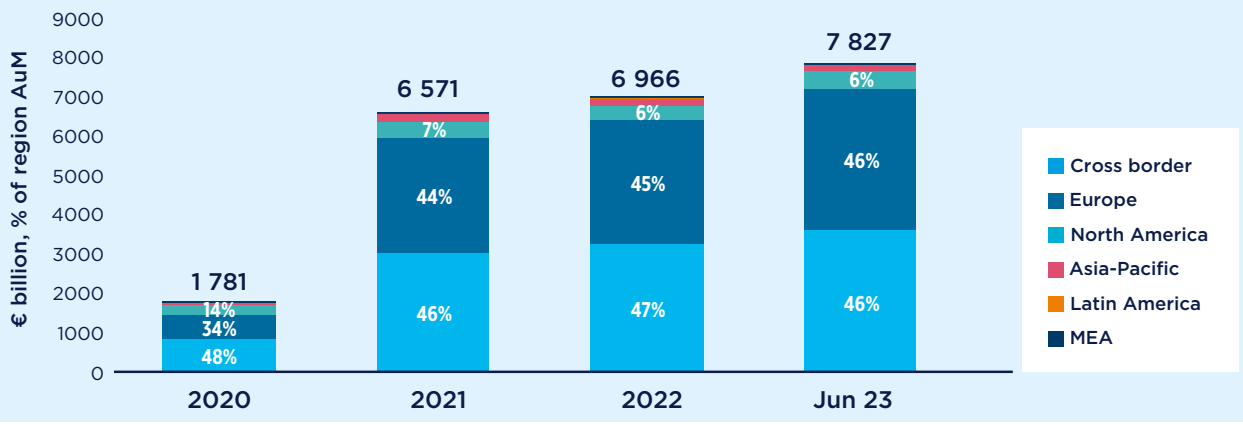
However, there are still issues that limit the impact of the framework for both asset managers (consistency of standards, reporting burden, data availability) and investors (complexity, product names and associated meanings). To foster support by both institutional and retail investors and thereby accelerate responsible investment, the Sustainable Finance Action Plan must tackle these topics head on.

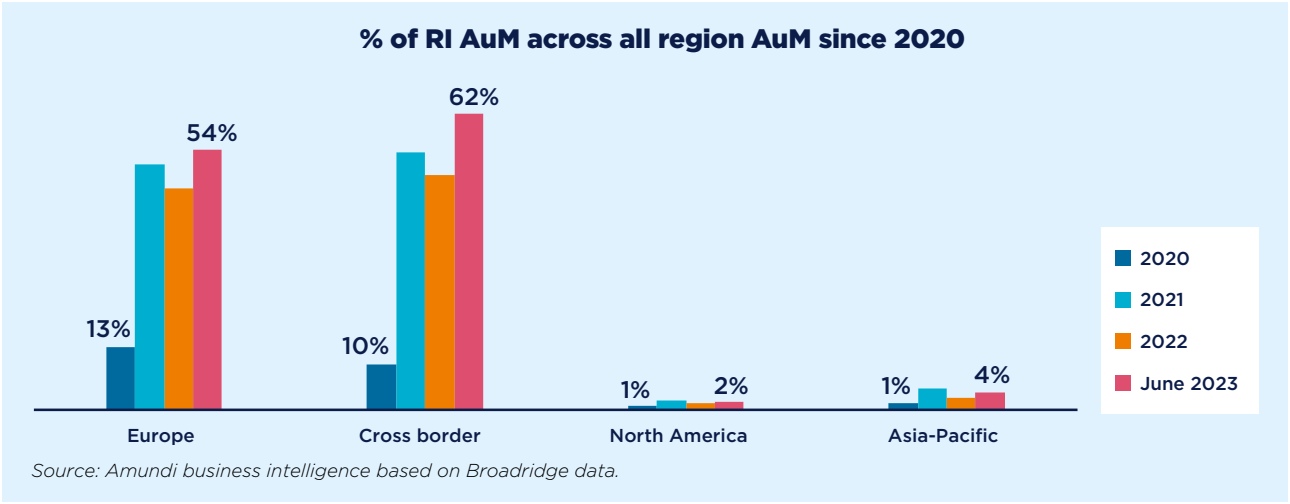
Despite the challenges, these regulations will accelerate the mobilisation of sustainable finance and strengthen the leadership of the EU in this area: regulators around the world regard the EU Sustainable Finance Action Plan as a benchmark against which to compare local sustainable finance legislation. Sustainable finance is evolving swiftly and we must not lose sight of the end goal: to build a greener, more sustainable future, with change ultimately taking place in the real economy.

A. How is the regulation reshaping the EU Sustainable Funds landscape?

The EU Sustainable Finance Action Plan has brought transformative changes to the European sustainable funds landscape. One notable outcome has been a substantial increase in responsible investment (RI) assets in Europe. This increase is due to a combination of factors, including heightened awareness of ESG integration, transparency, and the Sustainable Finance Disclosure Regulation (SFDR) classification system.

Responsible Investment funds - Worldwide AuM (June 2023)





Source: Amundi business intelligence based on Broadridge data.

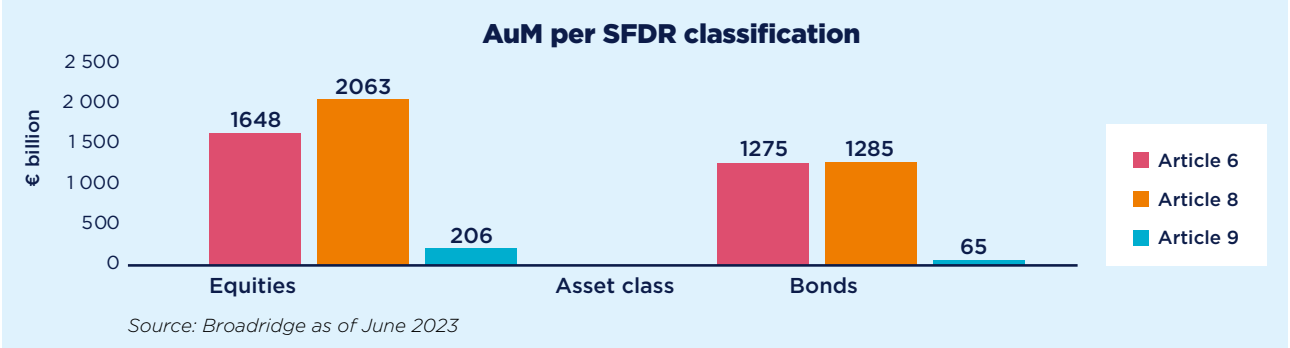
> *"It is essential that the rules and instruments in place are coherent, user-friendly and work effectively on the ground."*
>
> *Valdis Dombrovskis, Executive Vice-President for an Economy that Works for People – June 2023.*

Despite hopes that the SFDR would forestall greenwashing by increasing transparency, the spectrum of responsible investment shades has not necessarily become clearer, with Article 8 funds encompassing a wide range of approaches to ESG integration and varying degrees of ESG within their investment strategies. This creates discrepancies among responsible investment funds, reinforced by the significant constraints applicable to Article 9 funds. Article 9 funds currently occupy a niche segment with clear and robust sustainable objectives, providing more reassurance for investors. As a result, Article 9 funds may garner a premium given their more stringent criteria and clear sustainability objectives.

The evolution of regulations is set to have a profound impact on sustainable funds, shaping what we might call Sustainable Investing 2.0 or 3.0. Regulators and labels are becoming tougher regarding greenwashing risks. One by-product of this is making it easier for investment products to be compliant with rules if they are invested in "sustainability champions" (companies or projects with a positive impact on sustainability, qualifying as Sustainable Investments as per SFDR, whose activities are highly aligned with the EU Taxonomy, ...), as compared to portfolios containing "sustainability improvers" (companies that may not be sustainable today but aim to improve their performance over time). This trend is consistent with the growing need for more robust and verifiable sustainability practices. However, channelling capital towards "already virtuous" companies risks undermining the ability of responsible investment funds to play their role in financing the transition of the economy as a whole. To mitigate this, it is essential for the industry to gather the data and develop the methodologies to better capture transitioning business models, such as CAPEX analysis, net zero trajectories, and so forth.

For retail marketing purposes, thematic and impact investing provide a more straightforward value proposition. Impact and revenue analysis at the company level resonate more with advisors and end clients than complex ESG scoring methodologies. This natural compatibility with taxonomy analysis and sustainable investment approaches is another driver of the aforementioned trend.

What "type" of funds will dominate the RI market in 2024 and beyond is a topic of keen interest. Impact and Sustainable thematic investments with compelling stories and alignment between marketing, corporate policies, portfolio management, reporting, and more, are predicted to prevail. While climate will remain a focal point, we expect other



Source: Broadridge as of June 2023

environmental factors to grow in significance, especially as biodiversity has become a mainstream topic in the past months. End clients have also shown strong interest in options associated with the «S» pillar, especially healthcare, but the industry has yet to position an adequate offering.

Fund-naming initiatives in the UK, and in the US and the EU, will also significantly affect investors' perceptions. As regulations are still targeting greenwashing, fund naming is an opportunity to ensure some level of alignment between the product name, the investment process and its underlying assets, thus forestalling deceptive "ESG names." Defining these rules and threshold now is also timely, as the prevalence of ESG-related terms in fund names has **expanded from 3% to 14%** in the past decade.

As we navigate this fast-evolving landscape, one thing remains clear: responsible investing is not just a trend but a fundamental shift in the way we think about investments. Investors who adapt to this new reality and align not only their portfolios, but their overall value proposition with sustainable preferences are likely to thrive in this changing market.

B. Responsible investment fund flows keep getting traction

Responsible investment has demonstrated significant resilience over the past years. Despite challenging times for mutual funds in 2022 (ex-money market), responsible investment put up a notable resistance in Europe: -€25 billion for RI versus -€218 billion for non-RI. In 2023, responsible investment flows have outperformed the market: +€24 billion versus +€7 billion for non-RI for H1 (Amundi Business Intelligence based on Broadridge data).

We observed two key trends within the market:

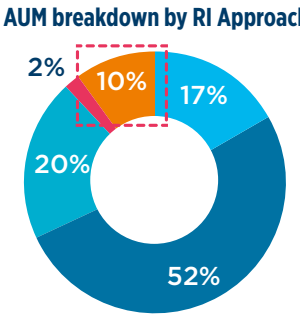
- The ascendancy of passive investments over active management: year-to-date in Europe, flows in passive management is +€38 billion versus -€42 billion for actively managed funds
- Among thematic investments, climate and energy-related funds have emerged as the most popular choices.

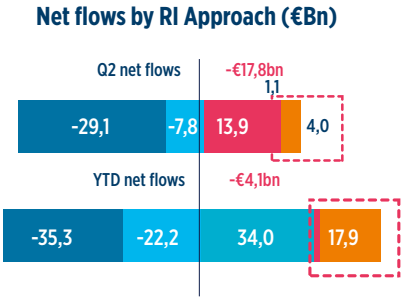
For the future, we anticipate a continued trend away from basic ESG integration towards more intensive ESG propositions. This shift is driven by investors who prioritise not only financial returns but also measurable environmental and social impact.

ESG integration : the most used RI approach but keeps facing outflows

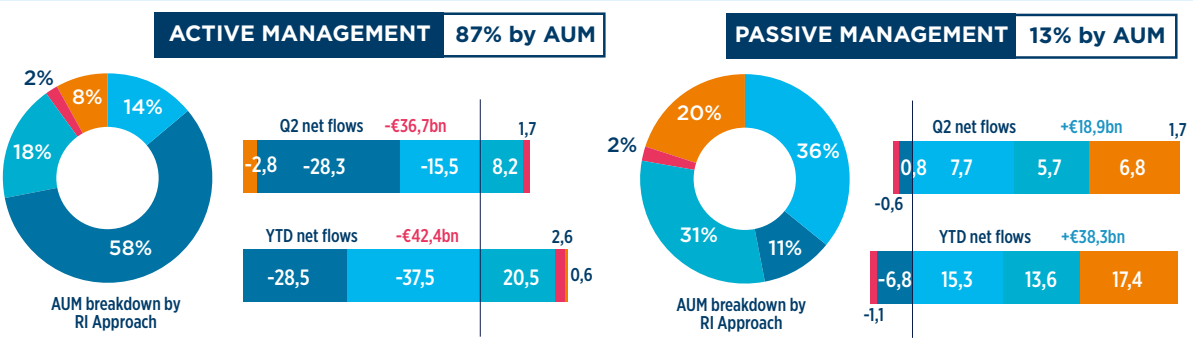
Passive funds drove Q2 inflows through exclusions, sustainability themes & best in class funds

Still sales premium for Best in Class & Sustainability themes . "Lighter" Integration approach faced massive redemptions





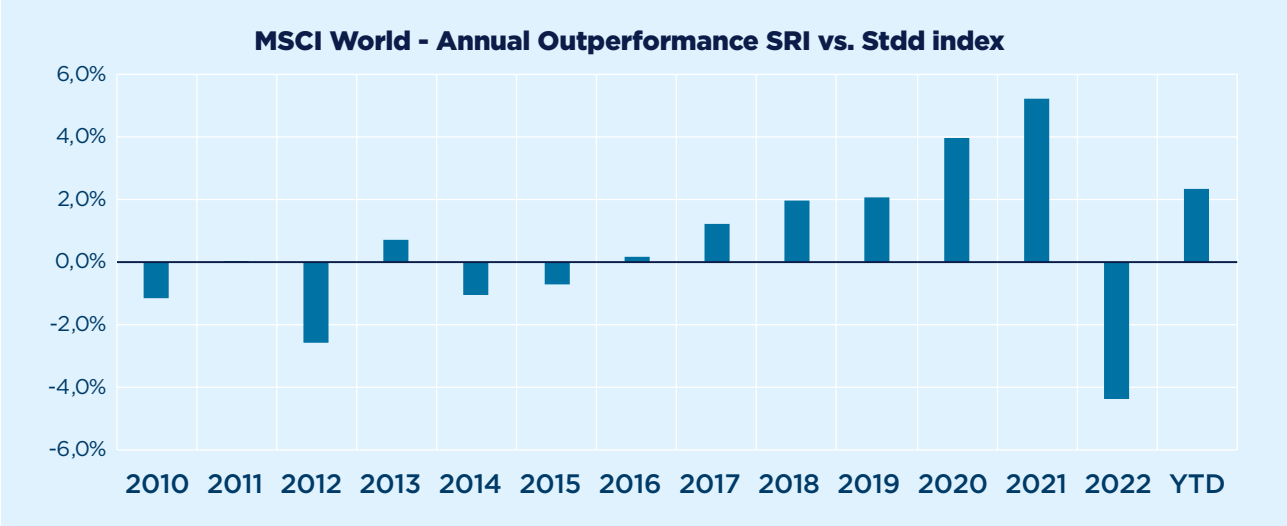
Outflows from active funds accelerated in Q2, with themes fund now in negative territory. Conversely, passives kept enjoying inflows



Source: Amundi Business Intelligence based on Broadridge data

One pivotal question remains the impact of ESG on performance. In 2022, responsible investments were broadsided by the robust showing of primary energy (coal, oil & gas) and the arms industry amidst a complex and uncertain geopolitical context. Above-average exposure to new technologies whose performance was weak placed an additional strain on performance.

Looking at the illustration below, however, one may argue that 2022 shows an almost symmetric relationship to the outperformance of 2021, and that over 10 years, the SRI version of MSCI World still outperforms the standard index (+9.5% p.a. versus +8.9% p.a. for the 2013 to 2022 period).



Amundi's conviction is that the priority should be bringing clarity to investors. Most responsible investment funds involve well-known structural diversification or style biases such as "under-exposure to fossil fuels," "overexposure to growth companies," etc.

While investors will most probably accept some performance trade-offs for investments with a strong RI framework that matches their convictions, 2022 taught us that simple ESG integration, generally perceived as either neutral or slightly positive for performance due to better ESG risk management, has encountered challenges. In such a context, clarifying performance trade-offs (including risk trade-offs) is critical to ensuring that investors can make informed choices.

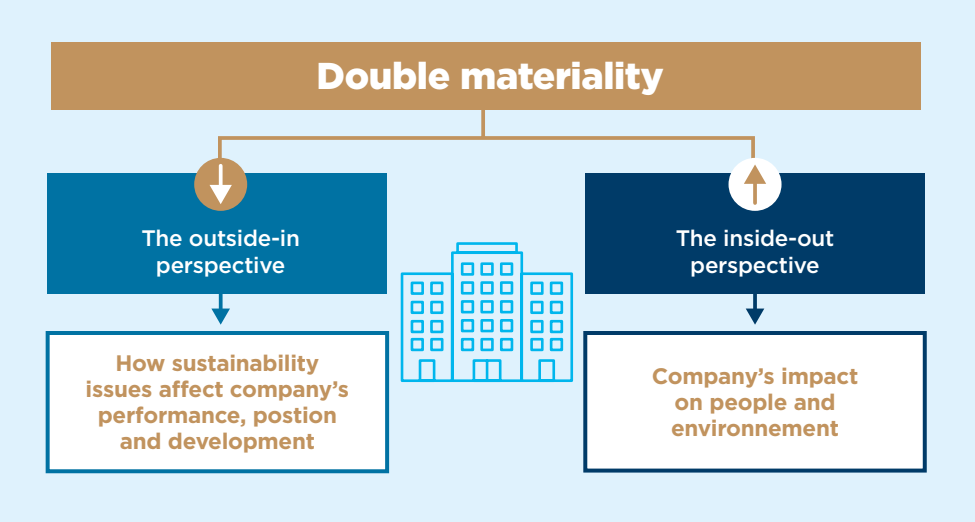
In addition, Amundi firmly believes that asset managers must lead by example and maintain credibility through their own responsible investment policies, operations and initiatives, which need to match what they expect from the companies in which they invest, while ensuring that investors understand and endorse their responsible investment ambitions.

C. A long-lasting impact beyond the European fund industry

The EU Sustainable Finance Action Plan has had impacts beyond the fund industry, sparking heated debates that are likely to have a long-lasting impact on the sustainable finance industry at large.

DOUBLE MATERIALITY

First, the debate regarding the approach to materiality in sustainable investment looms large. One camp promotes the double materiality approach, supported by the European Sustainability Reporting Standards (ESRS), aiming to consider not only the financial implications of ESG risks and opportunities, but also to account for how businesses' activities can impact the environment and society. The other camp focuses on single materiality and is championed by the International Financial Reporting Standards (IFRS). Single materiality, also known as financial materiality, specifically considers how sustainable factors affect the financial value of a firm.



It Is critical for asset managers to navigate this debate. The approach of materiality has significant influence on risk assessments, investment strategies, and engagement with stakeholders. At Amundi, we consider that a double materiality approach has intrinsic comparative advantages, as it allows for greater transparency on a broader set of risks and opportunities and will take into account long-term societal and environmental trends. That said, our double materiality matrices are clearly focused on what we consider material factors.

Moreover, as part of the sustainability assessment performed by banks, institutional and retail clients in Europe are asked questions regarding their ESG preferences, including whether they are interested in investments that consider Principal Adverse Impacts (PAIs) on sustainability factors. Therefore, even international asset managers have an incentive to consider PAIs in the products they distribute in Europe. Double materiality is thus embedded in transparency requirements and reaches beyond EU asset managers. For EU investment entities, there is also a regulatory requirement to publish a yearly PAI statement: foreign asset managers are consequently required to consider double materiality in their European subsidiaries.

Despite the existing debate, international standards ensure global interoperability. The double materiality promoted by the EU does not conflict with financial materiality, and may be more extensive, as it captures both the external and internal impacts of sustainability on and of companies. The current focus should be on the effective implementation of standards adoption and ensuring that accounting for materiality is stringent enough, whether it is financial-only or double.

REPORTING

Another aspect of the European Sustainable Finance Action Plan that will have long-lasting effects beyond the fund industry is current work related to the Corporate Sustainability Reporting Directive (CSRD). We anticipate that the European momentum generated by CSRD will be even greater with the international scope of the CSRD, as it covers not only the subsidiaries of EU groups, but also global companies operating in Europe through subsidiaries or branches with revenue over €150 million in Europe. From 2024 onwards, the CSRD will affect **40,000 EU and 10,000 non-EU companies.**

Consolidated companies headquartered outside of Europe will also be included in the scope from 2028 on, but with a lighter approach. This will lead to more standardised reporting practices globally and push business to look more closely at their value chains to comply with the directive, especially corporates with a global footprint.

We believe the CSRD will create a worldwide precedent and serve as a model for other countries considering sustainability reporting requirements. Initiatives are being created all over the globe to emulate the example of the CSRD, and its implementation on other continents is critical for the success of the directive. Market reaction towards the CSRD will be critical to determining whether this model can be adopted at scale.

TAKING STOCK OF THE EU SUSTAINABLE FINANCE ACTION PLAN: GREAT POTENTIAL, STILL SHAKY

While the EU Sustainable Finance Action Plan is by definition European, its impact is global: regulators everywhere regard it as a benchmark for their own sustainable finance legislation. Investors worldwide are thus increasingly mobilising to develop sustainable finance frameworks of their own. As ESG and sustainable finance practices come under elevated scrutiny, the EU Sustainable Finance Action Plan should act as a beacon to accelerate the mobilisation of sustainable finance, furthering increased transparency and upgraded standards.

Europe has made responsible investment regulation one of the pillars of its Green Deal, leading to the development of a complex set of standards designed to steer European savings progressively towards the transition. Individual investment choices are a cornerstone on which the European system is now built. European savers should be enabled to express their preferences to invest in sustainable activities, according to this narrative. Savings will then naturally flow towards transition, a sort of modern regulatory trickle-down theory.

However, to achieve its objective of financing the transition through individual choices, the EU Sustainable Finance Action Plan must meet two requirements:

- Clarity in the realm of sustainable finance offerings, to ensure they are comparable between asset management companies and intelligible to end investors
- A palette of sustainable finance offerings tailored to the needs of end investors, ensuring savings can be mobilised massively to finance the transition and not restricted to a niche market.

As the European Commission begins the process of reviewing its sustainable finance regulations and directives, we at Amundi have three strong convictions. First, sustainable finance policy must be simplified to benefit end investors. It is currently quite complex, and savers often choose not to express sustainable investment preferences. Second, regulations must establish clear rules that prevent the vast differences in interpretation that are currently the case for the definition of "sustainable investment," to ensure fair competition amongst management companies. Our third and final conviction is that the concept of transition, which is difficult to grasp, must be at the centre of financial institutions agenda; and its definition must specify the activities that should no longer be funded.

As the EU surges ahead on sustainable finance regulations, investors increasingly recognise that sustainable finance will no longer be a niche sector but rather the normality. This has supported the growth of RI fund flows in recent years, and we expect this trend to have significant impact beyond the financial world. Regulation is also expected to impact businesses globally, with sustainability reporting becoming more stringent for companies.

6. What implications from the ESG and Greenwashing backlash in the US and in Europe?

In recent years, and especially since the 2015 Paris Agreement, responsible investing has gained traction and imposed itself as a credible model, supported by strong tailwinds that include: 1) major environmental and climate-related issues requiring stringent regulations and massive additional financing 2) targeted regulation focused on the sustainable finance industry and 3) strong societal support, with increased responsible commitments from the private sector.

Somehow paradoxically, after several year of broadly consensual expansion, responsible investing is facing a backlash in multiple regions around the world, involving very different and sometimes opposing debates: for some, the approach is too mild, and "ESG investing" (at Amundi, we prefer "responsible investing", see below) should go beyond financial materiality considerations to embrace outcome and impact, while others believe it has gone too far and is breaching fiduciary duties.

This so-called "ESG backlash" should rather be seen as the sign of an industry that is maturing. First, it shows that beyond declarations, real change is at work. Second, it calls for a need for clarity in value propositions. Investors' expectations will need to be met on these two fronts.

A. The state of play in an increasingly politicised debate in the US and in Europe

In the last couple of years in the US, responsible investing relying on ESG criteria has been increasingly politicised, largely breaking down along political party lines. This results in a significant complexity for companies and investors operating across the US, making unified national (not to mention global) strategies difficult.

Two main arguments used in anti-ESG campaign are the following:

- The "anti-competition/anti-trust" point of view targets financial institutions that discriminate against companies in certain industries and prohibits the State (including the State's public pension plans) from doing business with such institutions and/or from investing the State's assets through such institutions. This phenomenon is illustrated in the US by the anti-boycott law, which aims to prohibit or penalise the boycott of specific industries.
- The "fiduciary duty" point of view prohibits the use of State funds for the purpose of ESG due to concerns over whether ESG strategies, engagements, and commitments are aligned with economic value. Therefore, the State is specifically prohibited from investing in strategies that consider ESG factors for any purpose other than maximised investment returns.

On the other end of the spectrum, NGOs have been pressing large banks and asset managers to call for more forceful climate action, asking for "more robust engagement and exclusion policies" across the board, advocating for explicit and widespread exclusion policies, with systematic support to shareholders' climate resolutions seen as the litmus test for "climate-consciousness".

> *"An unexpected benefit of the anti-ESG backlash is that it could help investors clarify how sustainability is aligned with their fiduciary duty."*
>
> *Hiroshi Shimizu, President, Nippon Life quoted by Responsible Investor.*

CUTTING THROUGH THE NOISE, BASIC FUNDAMENTAL PRINCIPLES PREVAIL: CLIENT PREFERENCES, TRANSPARENCY, MATERIALITY AND PERFORMANCE

Much has been said about the European stance on double materiality, but as explained in the previous section, the European regulation focuses on two main themes: the integration of client preferences and enhanced transparency.

Ultimately, both outside-in (impact of external ESG factors on the entity) and inside-out (adverse impact of an entity on its environment and/or society) factors can be economically material. Moreover, portfolio managers' seek to generate performance by anticipating which factors may become material tomorrow, especially factors not yet priced into the market. Seen this way, a double materiality assessment has the potential to be dynamic, reflect client preferences, and be performance-driven.

As a matter of fact, a growing number of investors are convinced of the materiality of ESG factors. According to **Morningstar**, "more than two-thirds of asset owners (67%) believe ESG has become more material to investment policy in the past five years despite persistent challenges to implementation".

While political debate and backlash may continue in the coming election year, the materiality of ESG factors is here to stay, and investors – responsible or otherwise – should hold the course.

B. What does it mean for the asset management industry? A call for greater clarity in the value proposition

The politicisation of responsible investing in the US and the polarisation of attitudes towards ESG and sustainable commitments create a complex environment for investors and end-savers to navigate. While it is important to keep up with emerging laws, attitudes and politics, and continually assess the impact of these developments, it has become even more critical for the industry to bring clarity to the value propositions made at product level and the commitment(s) made at corporate level.

Responsible Investment encompasses a wide range of purposes, a large variety of implementation methodologies, diverse degrees of intensity and relies on a wide spectrum of investment beliefs. While the politicisation of the ESG and climate finance debate aims to impose one set of beliefs amidst the diversity of existing attitudes, investors should instead rely on their governance to establish their stance and objectives, and must provide sufficient transparency to support end-savers' empowerment.

Putting clients' interests first requires being transparent – and clear – on investment products' objectives, how sustainability characteristics are embedded in the investment process (including the perspective on materiality), and their degree of intensity, as well as the investor's policy on company engagement and voting, enabling the end-client to make an informed choice, according to their preferences.

In 2024, we expect asset managers to continue enhancing transparency at product level, and to clarify how commitments at asset management company level relate to product-level objectives. Regulators have a key role to play in preventing polarisation of the debate by enforcing greater transparency and providing a common framework.

Two political stances are going head-to-head. On the one hand is a side that refuses to see the materiality of finance on ESG factors, and on the other hand, a side that want to bypass fiduciary duty in reasoning. The "ESG backlash" has had a negative impact on the responsible investment universe, but it also has shown that this topic has grown enough to be taken seriously by the whole market. Asset managers now have a responsibility to define how sustainability is aligned with their fiduciary duty and decide how they position themselves on key debates: double materiality, ESG integration, and stewardship.

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