2022 AXA IM

TCFD – Article 29 report

Contents

Explanation of the report structure

This report aims to address the Article 29 of the French 2019 Energy & Climate Law and its implementation decree, fulfil the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and provide a comprehensive overview of AXA IM's approach to Sustainability and Responsible investment (RI).

In addition, the report addresses some of the requirements of the Securities and Futures Commission (SFC) of Hong Kong on the management and disclosure of climate-related risks by fund managers. As for the recent climate-related reporting requirements of the Financial Conduct Authority (FCA) in UK, while the report covers part of the requirements, a dedicated disclosure is available on AXA IM UK website[1].

While in the previous years, the report followed the structure of the TCFD recommendations (*i.e.*, the following four pillars: Governance, Strategy, Risk management, and Metrics), starting this year, the report follows the structure of the implementation decree of the Article 29 of the French law, as requested by the French financial market authority (*Autorité des marches financiers* – AMF), as follows:

1. The entity's general approach to the consideration of environmental, social and governance criteria;
2. Internal resources and actions deployed by the entity dedicated to the integration of ESG criteria in the investment strategy;
3. Consideration of ESG criteria at the entity's governance level;
4. Engagement strategy of the entity with issuers or management companies;
5. Share of assets in sustainable and fossil fuel sectors and activities;
6. Climate strategy and alignment with long term climate goals as defined by the UNFCCC Paris Agreement;
7. Biodiversity strategy and alignment with long term biodiversity goals defined by the UN CDB;
8. Integration of ESG criteria into risk management;
9. List of financial products referred as Article 8 or 9 under the SFDR.

The French regulatory requirements, acting as a complementary set of disclosure requirements of the EU Sustainable Finance Disclosure Regulation (SFDR) in France, are the most advanced non-financial disclosure requirements on Environmental, Social and Governance (ESG) criteria. Beyond covering the main features of the TCFD recommendations with regards to climate change, the French rules also cover disclosure requirements on various ESG issues, notably on biodiversity impacts, risks & opportunities, engagement and stewardship policies, and the integration of ESG criteria into governance practices.

Most of the figures in the report are 2022 worldwide holdings managed by the two main AXA IM business units, AXA IM Core and AXA IM Alts (see graph below), split by main asset class that include the two AXA IM legal entities covered by the French law requirements: AXA IM Paris SA and AXA REIM SGP SA. AXA REIM SGP SA assets are part of figures reported on Real Estate and Infrastructure assets, while AXA IM Paris SA assets are more heterogenous, encompassing both traditional (AXA IM Core) and alternative (AXA IM Alts) asset classes. In addition, this report covers both AXA IM Paris SA and AXA REIM SGP SA as the organisation and approaches defined within AXA IM aim at being consistent and

[1] Home | AXA IM UK (axa-im.co.uk)

harmonized, when possible, across all business units while considering the specificities of each entity and asset classes.

AXA IM Core	**AXA IM Alts**
€482bn	**€198bn**
AUM	AUM
Fixed Income	**Private Debt & Alternative Credit**
High Yield	Real estate debt
IG Credit	Infrastructure debt
Inflation	Alternative credit
Emerging Markets	**Real Estate Equity**
Govt bonds	Private real estate
Money Markets	Listed real estate
Equities	CRE Debt
Global	**Private Equity & Infrastructure**
Regional & Country	Infrastructure Private Equity
Thematic	Impact Private Equity
Sustainable & Impact	**AXA IM Chorus**
Multi-Asset	Hedge funds
Targeted outcome	
(Capital growth, capital preservation, income generation, inflation, impact)	

Source: AXA IM, data as of 31/12/2022. N.B.: AXA IM Alts AuM includes €13bn of assets that are currently managed by AXA IM third business unit, AXA IM Prime (see below), since its launch in July 2022.

2022 in review

2022 was marked by several new regulatory developments which guided our RI activities and mobilized AXA IM's teams efforts:

- The publication of the **EU SFDR Delegated Regulation 2022/1288** (*i.e.*, the regulatory technical standards – RTS, the so-called **SFDR Level II**) that entered into force on January 1st 2023, which specified various aspects in relation to how i) the principle of 'do not significant harm' (DNSH), ii) sustainability indicators and principle adverse sustainability impacts (PAIs), and iii) the promotion of environmental or social characteristics and sustainable investment objectives should be disclosed in product pre-contractual documents, on websites and in periodic reports;
- The first disclosure regarding of the Article 29 of the French 2019 Energy & Climate Law ("**Article 29 LEC**") in June 2022;
- The publication in December 2021 of the UK FCA final rules on climate-related reporting requirements for which first reporting in UK is scheduled in June 2023 in conjunction with this report.
- In that context AXA IM pursued its advocacy efforts on sustainable finance policies, aiming through those to help ensure rules around disclosure and definitions in terms of defining of what is 'green' or 'sustainable' are robust, comparable and science-based where possible – but also usable by the financial sector and by corporates, and understandable for all investor types[2].

Along with the preparation for these regulatory developments, 2022 was also marked by the achievement of the international negotiation process to adopt a new international framework regarding the protection of biodiversity by 2030, the **Kunming-Montreal Global Biodiversity Framework** of the United Nations Convention of Biological Diversity (UN CBD)[3], which through 'Target 15' encourages the private sector (*i.e.*, companies and financial institutions) to assess and disclose risks, dependencies and impacts on biodiversity related to their activities[4]. This new framework will allow methodological developments to measure the alignment of investment strategies with the global mid- and long-term biodiversity goals, thus helping AXA IM to progressively design a strategy with mid- and/or long-term quantitative targets aligned with long-term biodiversity goals, as requested by the Article 29 of the French law.

On climate, we have also significantly enlarged the scope of assets under management (AuM) covered by our net zero (NZ) targets in April 2022, from 15% as initially set in 2021 to **65%** since end of 2021[5].

As our desire to be a leader on sustainability requires us to be clear on red lines, practices or activities which we do not think can be part of the transition to a more sustainable world. We reinforced our **Climate risks policy** by putting in place a new ban on investing in **unconventional oil and gas** such as oil sands in early 2022 and by deciding to strengthen our exclusion criteria on **coal** in late 2022[6].

Stewardship strategy is another key element of our RI framework on assets and activities on which we remain exposed. Our voting policy was reinforced at the beginning of 2022 to further integrate ESG

[2] See 'Public policy' section of our 2022 Stewardship report, pp.34-37: Stewardship and Engagement | AXA IM Corporate (axa-im.com)
[3] Convention on Biodiversity | United Nations
[4] Kunming-Montreal Global Biodiversity Framework (cbd.int)
[5] At end of 2022, 64% (incl. joint ventures) of AXA IM total AuM are covered by our NZ targets: see more details in Section 6.1.
[6] Implementation was effective in 2023.

considerations in our review of resolutions, which led to a **14%** opposition rate with at least one vote against cast in **60%** of the meetings voted. Overall, in 2022, the number of issuers engaged in 2022 has increased by **111%** compared to 2021 in listed markets. Climate remained our main theme (28% of engagements), while the trend we identified in 2021 of an increase in corporate governance-related engagement also continued this year. A number of environmental and social topics are now addressed alongside governance-related topics, showing increasing integration of environmental and social considerations into the heart of corporate strategy, which we see as very positive. We have committed to significantly enlarge our engagement on biodiversity notably by joining various collaborative initiatives. This reflected the trend towards the integration of ESG across companies' business activity and organisations as they pursue genuinely effective ESG strategies.

We also updated our RI Governance structure, as well as AXA IM's Public Affairs Charter[7] and our Remuneration policy[8].

Finally, we committed to pursue providing transparency on the integration of ESG criteria at fund level. We also continued to work on the improvement of our existing ESG, Engagement and Voting reports offering.

In terms of organisation structure, in July 2022, AXA IM created a third business unit (in addition to AXA IM Core and AXA IM Alts) which hosts the Private Markets Fund of Fund business that the AXA Group Investment teams have built since 2013 together with AXA IM Alts, AXA IM Private Markets Enabler ("**AXA IM Prime**")[9].

[7] AXA_IM_Public_Affairs_Charter_Nov22.pdf (axa-im.com)
[8] Remuneration | AXA IM Corporate (axa-im.com)
[9] AXA IM aims to create a new business unit to further develop its offering in private markets | AXA IM Corporate (axa-im.com)

1- Our approach to ESG integration: AXA IM Responsible Investment Framework

1.1 Our philosophy

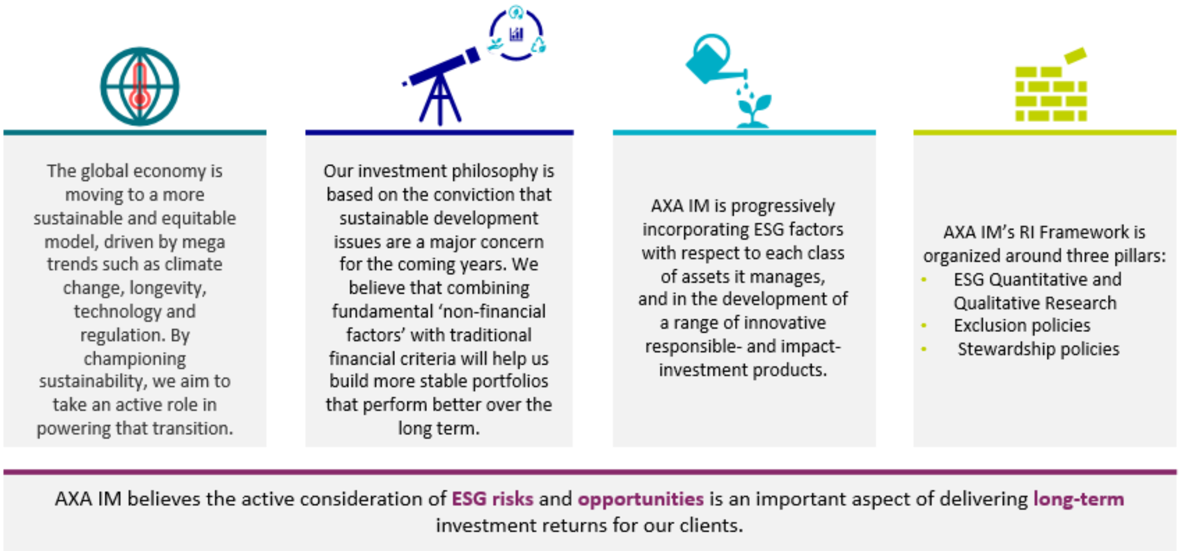
AXA IM has been involved in responsible investment for more than 20 years and is actively engaged in progressively incorporating Environmental, Social and Governance ("ESG") factors into each area of management expertise, and in the development of multiple range of responsible- and impact-investment products.

We believe that ESG factors must influence, not just the management of investment portfolios across all asset classes, sectors, companies and regions, but also a range of interests affecting clients and other stakeholders.

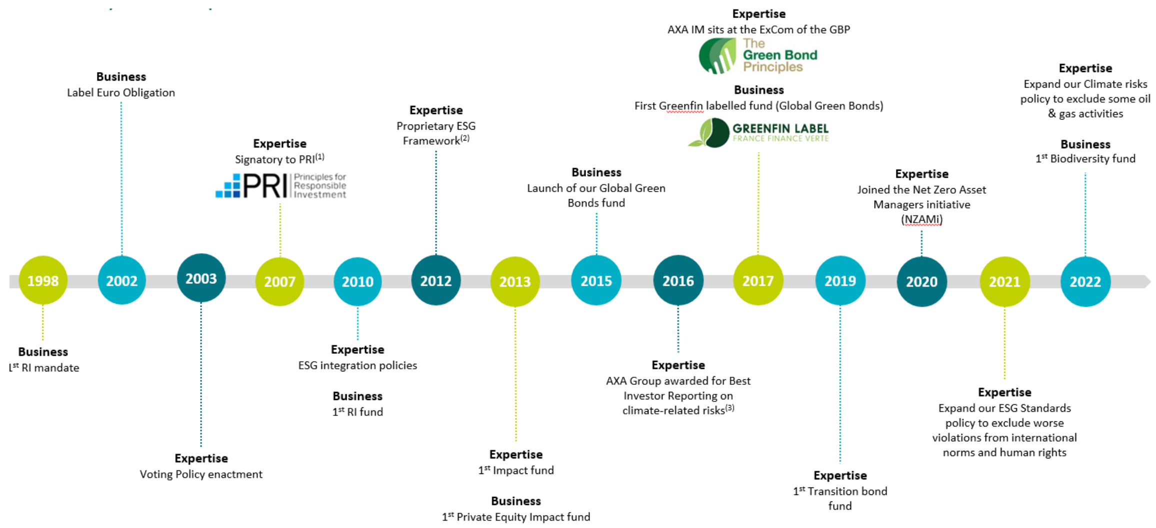
Our investment philosophy is based on the conviction that sustainable development issues are a major concern for the coming years. We believe that combining fundamental 'non-financial factors' with traditional financial criteria will help us build more stable portfolios that perform better over the long term. The non-financial approach has become a necessity in many ways:

- It is instrumental in removing companies and investments from portfolios when they cause exposure to high levels of ESG risk, which would ultimately affect financial performance;
- It focuses on companies and investments that have implemented best practice regarding managing their environmental impacts, governance and social practices, and whose responsible practices leave them better prepared, in our view, to meet the major challenges of the future;
- It may support improved performance by means of active dialogue with companies on managing ESG concerns around investments and limiting our clients' exposure to reputational risk.

AXA IM's RI framework, policies and processes are built to consider both impacts, at varying degrees depending on the level of integration of our products – in line with the principles of the EU SFDR.



Source: AXA IM, 2023.



Source: AXA IM as of 16/12/2022. (1) Principle for Responsible Investment; (2) ESG ratings from in-house RI platform; (3) Awarded by the Environmental French Ministry in 2016[10].

1.2 AXA IM Responsible Investment Framework

AXA IM is a long-term, responsible investor with the aim of delivering sustainable returns for clients. We aim to achieve this goal via in-depth research, data analysis and the construction of portfolios which look to optimise both financial and non-financial factors. Our investment process reflects our core belief that a focus on sustainability can help deliver robust economic and financial performance over the long term.

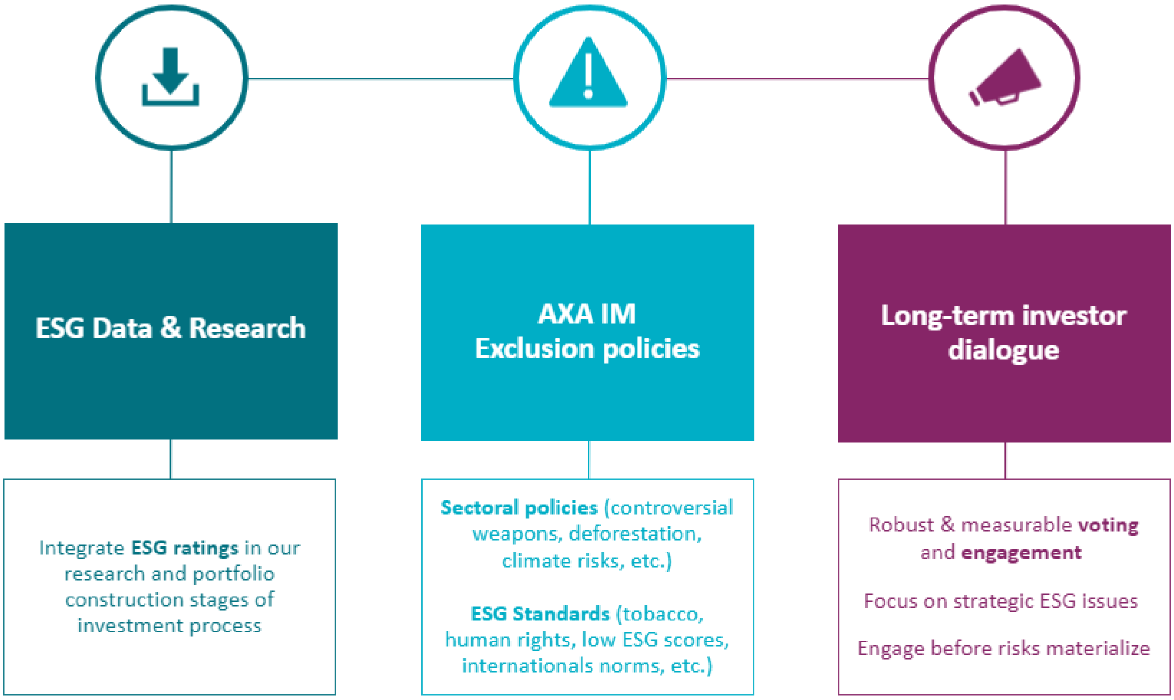
Our RI framework is based on **three pillars**:

1. ESG quantitative and qualitative research;
2. Normative and sectoral exclusion policies;
3. Stewardship strategy.

Our **ESG quantitative and qualitative research** is designed to help us better understand the materiality of ESG challenges for sectors, companies, and countries. This research feeds our integration and exclusion strategies by identifying where assets might be exposed to ESG risks that could have a detrimental and irreversible effect on the performance of our portfolios, as well as on long-term global sustainability. Our **normative and sectoral exclusions** set the red lines and send a clear message to companies and sovereigns on what we consider unacceptable from an ESG perspective. For assets where we remain exposed, we apply our voting and engagement strategies with the objective of supporting issuers in their transition journey. In applying our **stewardship strategy**, for engagement with objectives, we aim to set out meaningful objectives which are clearly communicated to management of the issuer with whom AXA IM engages a dialogue. We then hold meetings with such issuers to verify and evaluate their progress regarding ESG issues and we vote with conviction or pursue other escalation techniques when required which could lead to divestment in the case of most problematic engagement

[10] References to league tables and awards are not an indicator of future rankings in league tables or awards.

failures.



Source: AXA IM, 2022. For illustrative purpose only.

ESG quantitative and qualitative research

ESG scoring methodologies

We use ESG scoring methodologies to help portfolio managers integrate ESG considerations in their investment decisions by assessing assets' ESG performance. ESG scoring methodologies rely on data reported by companies which are still heterogenous due to the absence of global, mandatory sustainability reporting standard which means they should be used with caution. Through our advocacy efforts, we support the on-going development in the sustainability-reporting space, including at EU level with the revision of the CSRD and at global level with the work of the ISSB, and in particular advocate for a proportionate integration of the 'double materiality' concept and an effective inter-operability between the sustainability standards currently being developed.

Some of our strategies apply binding criteria in relation with the ESG score, which are described in their legal documentation.

2022 updates

In the course of 2022, we have consolidated our Corporate ESG scoring methodology to improve the coverage on small and mid-caps as well as on the global investment universe through the selection of a new third-party provider. Thanks to FinDox, specialised in the ESG data collection for European and US leveraged loan markets, we are able to report on more than 55 ESG KPIs and incorporate these KPIs, from quantitative metrics such as CO_2 emissions or the share of women on board to qualitative information such as the existence of an ESG incentive-based compensation mechanisms, into our proprietary ESG scoring and to score the full investment universe, including to leverage loans indices.[11]

ESG ratings for listed asset classes: corporates & sovereigns

In 2021 AXA moved from a "blended score" which was an aggregation of KPIs from different providers to a structured scored called Q². Q² stands for Qual and Quant.

Source: AXA IM, 2021. For illustrative purpose only.

Using the MSCI ESG scoring model as the starting point, the Q² methodology allows to increase the coverage provided by MSCI as when MSCI doesn't provide a rating for an issuer, AXA IM ESG analysts can provide a documented, fundamental ESG analysis, which in turn will be transformed into a quantitative ESG score following MSCI pillars aggregation methodology and scores normalization, such coverage-enhancing ESG scores are referred to as "qual-to-quant". In 2022, we created 111 additional ESG scores based on a qualitative analysis, and 247 in 2021.

Second, when MSCI does cover an issuer but AXA IM's ESG analysts disagree with MSCI's ESG assessment (for example because the assessment is based on scarce and/or outdated data), a documented, fundamental ESG analysis can be submitted to the peer review of the ESG Assessment and Review Committee (ESARC), chaired by the Head of AXA IM Research; if the ESARC validates the analysis, it will be transformed into a quantitative ESG score and will override the existing, previously prevailing MSCI score. In 2022, 13 scores have been corrected through this ESARC process.

Third, in the fixed income space, Q² will keep an instrument-level differentiation in ESG scores with a ESG score premium for sustainable bonds (green and social bonds) for which AXA IM's analysts (in RI Research) have a documented, fundamental positive or neutral opinion.

Finally, AXA IM will keep "cascading" ESG scores from root issuer to its affiliates after and beyond what MSCI does in this respect.

[11] *E.g.*, WELLI and LLI.

MSCI scores are used as a starting point, for corporates and for sovereigns, which enables Q² to provide consistent ratings between the two asset classes. MSCI scores range from 0 to 10.

- Corporate ESG rating

Identified "key issues" are industry-specific environmental, social and governance externalities that may impact a company or industry. MSCI ESG Rating methodology identifies 35 key issues within the three ESG pillars (see on graph below) comprising 5-30% of the total ESG Rating:

- To arrive at a final ESG Rating, the weighted average of individual key issue scores is normalized relative to MSCI ESG Rating Industry peers;
- The weightings consider both the contribution of the industry, relative to all other industries, to the negative or positive impact on the environment or society; and the timeline within which we expect that risk or opportunity for companies in the industry to materialize;
- The framework is such that a key issue defined as "High Impact" and "Short-Term" would be weighted three times higher than a key issue defined as "Low Impact" and "Long-Term";
- Level of contribution to social or environmental externality: similar to the process outlined above, each GICS (Global Industry Classification Standards) Sub-Industry is assigned a "High", "Medium", or "Low" impact for each key issue based on MSCI analysis of relevant data (*e.g.*, average carbon emissions intensity);
- Expected time horizon of risk / opportunity: The time horizon of each key issue (Short-Term, Medium-Term, Long-Term) is classified based on the type of risk or opportunity that each key issue presents to companies;
- The Governance pillar weight has been determined assuming a "High Contribution/Long Term" and "Medium Contribution/Long Term" assessment on Corporate governance and Corporate behaviour respectively across all sub-industries. Additionally, the weight on the Governance pillar will be floored at a minimum value of 33%;
- The Risk exposure score and Risk management score are combined such that a higher level of exposure requires a higher level of demonstrated management capability in order to achieve the same overall key issue score;
- A controversy penalty if it is judged to pose material risks can be applied to the key issue score. A controversy case that is deemed to indicate structural problems that could pose future material risks for the company triggers a larger deduction from the key issue score than a controversy case that is deemed to be an important indicator of recent performance but not a clear signal of future material risk.

Source: AXA IM, MSCI, 2021.

- ### Small and mid-caps corporates ESG rating

To complement our corporate methodology for specific asset classes as small and mid-caps, we expanded our coverage in partnership with Ethifinance. It relies on 45 raw scores sourced from Ethifinance & S&P Trucost, all rated on a scale from 0 to 10 and classified in 6 factors and 13 sub-factors. The sectorial weighting replicate MSCI 's one[12]. This expansion allowed the ESG coverage of the concerned financial products to improve significantly.

Since early 2023, we use an ESG rating provided by FinDox. It relies on 55 raw scores sourced from FinDox, all rated on a scale from 0 to 10 and classified as per the MSCI framework in 3 pillars, 10 themes and 35 key issues. The sectorial weighting also replicates MSCI's one[13]. This new expansion further allows the ESG coverage of the concerned financial products as well as the underlying investment universe to improve significantly.

- ### Sovereign ESG rating

MSCI ESG Government Ratings methodology identifies 27 key issues for sovereigns within the three ESG pillars (see on graph below), and reflect how countries' exposure to and management of environmental, social, and governance risk factors may affect the long-term sustainability of their economies:

[12] Detailed list of indicators and criteria available upon request.
[13] *Ibid.*

- The weight of an ESG pillar is determined after assessing the impact of that pillar on the long-term competitiveness over the short, medium and long term;
- Expected time horizon of risk / opportunity: time horizon of each key issue (Short-Term, Medium-Term, Long-Term) is classified based on the type of risk or opportunity that each key issue presents to the countries;
- The Governance pillar weight is assigned a higher weight (50%) than the Environmental and Social pillars (25%) as governance offers the most dynamic ways to influence the management of environmental, social and institutional risks;
- The Risk exposure score and Risk management score are combined such that a higher level of exposure requires a higher level of demonstrated management capability in order to achieve the same overall key issue score. Within this approach, a country's Government ESG score is constrained by its Risk management score.

Environmental

Natural Resource Risk

Risk Exposure: Energy Security Risk, Productive Land and Mineral Resources, Water Resources

Risk Management: Energy Resources Management, Resources Conservation, Water Resource Management

Environmental Externalities and Vulnerability Risk

Risk Exposure: Vulnerability to Environmental Events, Environmental Externalities

Risk Management: Environmental Performance, Management of Environmental Externalities

Social

Human Capital Risk

Risk exposure: Basic Human capital, Higher Education and Technology Readiness, Knowledge Capital

Risk Management: Basic Needs, Human Capital Infrastructure, Human Capital Performance,

Economic Environment Risk

Risk exposure: Economic Environment

Governance

Financial Governance Risk

Risk Exposure: Financial Capital and Trade Vulnerability

Risk Management: Financial Management

Political Governance Risk

Risk Exposure: Institutions, Judicial and Penal System, Governance effectiveness

Risk Management: Stability and Peace, Corruption Control, Political Rights and Civil Liabilities

Source: AXA IM, MSCI, 2021

- Green, social and sustainability bonds (GSSB) rating

A specific methodology for green, social and sustainability bonds (GSSB) has been designed to include the bonds' qualitative assessment made by the RI Research team into the Q² scoring frameworks. The scores rely on Bloomberg database and integrate Q² qualitative inputs, whether it is a corporate or sovereign bond, to produce an enhanced ESG score for GSSB issuances.

Thus, the scores given to these instruments are a combination of both quantitative and qualitative assessments. The ESG score of the bond can either be the same as its issuer or get a bonus depending on the qualitative assessment.

It allows us to differentiate these impact bonds from common bonds through ESG scoring and to favour investments participating in climate and social transition.

ESG ratings for alternative asset classes: Real Estate and Infrastructure

▪ Real estate direct property ESG rating

The real estate direct property ESG rating is a proprietary tool, initially developed in 2016, in line with various sectoral benchmarks, such as building certifications (*e.g.*, BREEAM in use) and GRESB, to integrate the expectations of the AXA IM's main stakeholders and to guarantee the coherence of actions carried out at asset level.

First, a preliminary ESG score is calculated at the time of acquisition, noting that many assumptions may be made as data availability is usually limited. Once under management, asset managers are responsible for undertaking an annual review and update the ESG score for the asset within our dedicated ESG data management platform. This assessment enables us to review the performance of an asset relative to AXA IM's portfolio at sector and country level, and establish short-, medium- and long-term action plans to improve their ESG performance.

Methodology

The ESG rating methodology for real estate assets has been developed around 3 pillars: Environmental (E), Social (S) and Governance (G), each covered by dedicated indicators. The assessment is linked to the performance of a building over a defined period. It uses actual consumption data collected by the property managers in the data management platform to measure energy (electricity, gas, district heating) and water consumption.

The ESG scoring has a total of 27 questions, 25 of which are scored, for a total of 200 points. The final score is calculated out of 10. In line with AXA IM Alts' ESG strategy, environmental criteria play a predominant role in the rating, representing 60% of the total score. Social and governance criteria represent an equivalent weighting of 20% each. Some themes have also been added in 2021 (*e.g.*, climate resilience, impact on local communities, biodiversity), to reflect the growing importance of these themes in AXA IM Alts' sector benchmarks and stakeholder expectations (see table below).

Scope

All properties under direct management by the real estate asset management team within AXA IM Alts are subject to an ESG score at the time of acquisition and while under management (parking, plot of land and assets under development are out of scope).

The rating has been developed to address the specificities of all real estate asset classes (residential, office, hotel, etc.) and their geographic locations, and considers all uses per asset, beyond the data and information for which AXA IM Alts, which encompasses the activities of AXA REIM SGP SA, exercises control.

OBJECTIVE: Assess the real performance of the building					
Category		#	Question	New topics	Points / 200
ENVIRONMENT	ENERGY	1	What is the level of this building of the local energy performance scheme?		12
		2	Is energy consumption data collected automatically and regularly?		5
		3	What is the annual final energy consumption of the whole building?		12
		4	Which energy efficiency measures are implemented on the building?		12
	CARBON	5	Is the building's electricity consumption provided by renewable energy sources?	NEW	5
		6	What is the energy source of heating the building?		5
		7	Have you set an greenhouse gas emissions reduction plan to align the asset's GHG emission intensity with the CRREM 1.5°C trajectory?	NEW	12
		8	Does the building enable the use of low carbon transport?		12
	WATER	9	How has the annual water consumption of the building evolved?		8
		10	Which measures are in place to reduce water consumption in the building?		10
	WASTE	11	Is the amount of waste produced in the building recorded and uploaded to Deepki?	NEW	4
		12	Are a waste sorting facility or a waste recovery or recycling contract in place in the building?		4
		13	Which measures are in place to optimize waste management?	NEW	4
	BIODIVERSITY	14	What % of the site area is vegetated?		Not assessed
	CERTIFICATION	15	Does the building have a valid third-party independent sustainability certification?		15
		15b	Have other environmental certifications been obtained for your building?	NEW	Not assessed
SOCIAL	COMFORT AND WELL BEING	16	Which measures are in place to evaluate the comfort and wellbeing of the tenants?	NEW	5
		17	Which measures are in place to improve the comfort and wellbeing of the tenants?	NEW	10
	ENGAGEMENT	18	Are ESG clauses (or green lease) included in the building's lease contracts?	NEW	10
		19	Which measures are in place to engage with the tenants?		5
		20	Which measures are in place to contribute to the social and economic development of the local community?	NEW	10
GOVERNANCE	ACTION PLAN	21	Is there an action plan in place to improve the ESG performance of the building?	NEW	10
	RESPONSIBLE PROCUREMENT	22	Is there an RFP process in place for all service providers operating on the asset?		5
		23	Are sustainability clauses included in contracts with service providers?		10
	CLIMATE RESILIENCE	24	Is the building significantly exposed to a physical risks linked to natural catastrophes and climate change?	NEW	5
		25a	Are risk management measures in place to adapt to the impacts of natural catastrophes and climate change?	NEW	5
		25b	Are measures in place to adapt to the impacts of climate change?	NEW	5

Source: AXA IM, 2022.

- ### CRE & Infrastructure debt ESG rating

For the asset classes of commercial real estate (CRE) debt and infrastructure debt, non-financial criteria are taken into consideration during the due diligence and investment committee process at the time of acquisition. A scoring methodology specific to these two asset classes was developed in 2016 for the purpose of providing an ESG score to all portfolios' underlying assets.

CRE debt ESG rating

Non-financial criteria are taken into consideration during the due diligence and investment committee process at the time of acquisition. A scoring methodology specific to the asset class was developed in 2016 for the purpose of providing an ESG score to all portfolios' underlying assets.

In 2022, the CRE debt ESG rating tool was enhanced to reflect the changing risks and take into consideration the most relevant ESG indicators for the asset class. The enhanced ESG rating methodology aims at helping the portfolio management team with investment selection while serving simultaneously as a data collection and a progress monitoring tool for the loans that are held in portfolio.

The updated framework helps initiate an ESG rating on investment opportunities during the due diligence phase, but also serves as a basis for an annual review and update of the ESG score for the assets that are held in portfolio (when updated information is available). The assessment is carried out using answers provided by the loan sponsor, the ultimate owner of the underlying asset, to a comprehensive ESG survey that is sent to them pre-investment and on an annual basis. Analysts are however encouraged to challenge that information whenever possible based on available data. Please bear in mind that sometimes assumptions are made, and proxy data used to circumvent data scarcity at the underlying asset level.

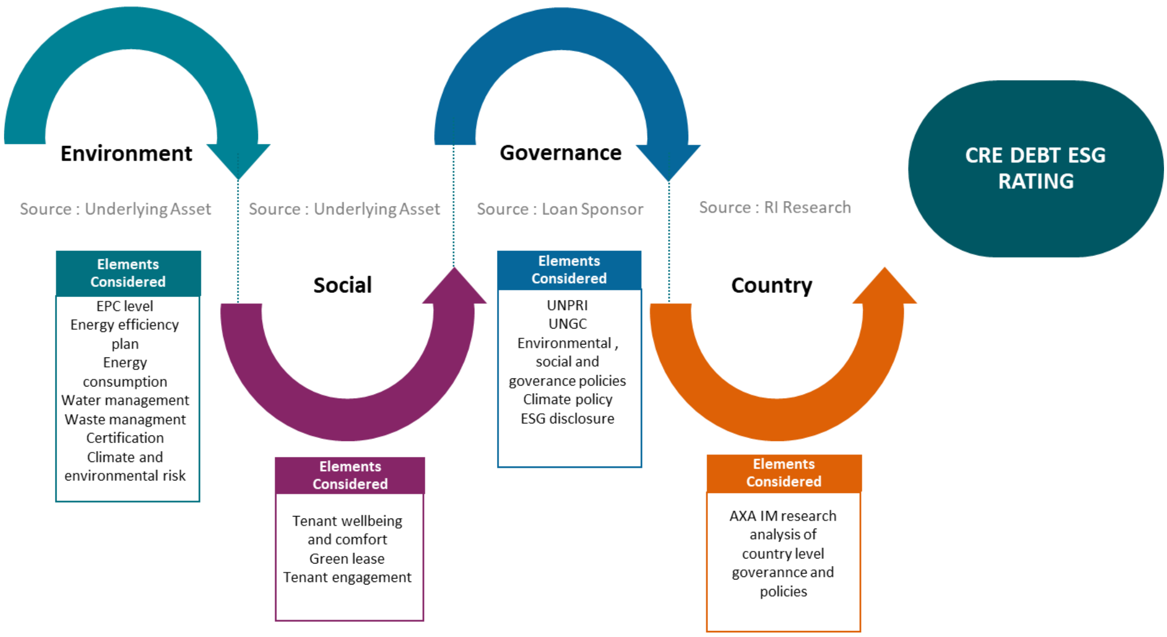
The CRE debt ESG rating tool emulates the approach in place on the real estate equity side, analysing key environmental and social criteria and KPIs of the underlying real estate assets to determine relative ESG performance at the assets and project level. It also accounts for the specificities of investing through private loan and debt instruments by further integrating an assessment of loan sponsors, based on ESG information they disclose first hand on topics such as their commitment to industry-wide ESG initiatives, the quality and transparency of their ESG policies and reporting disclosure.

The enhanced ESG rating tool has a total of 22 indicators 14 (up from 14 in the previous iteration); 16 criteria are assessed at the asset level and 6 at loan sponsor level to rate investments on a scale from 0 (worst) to 10 (best). Additionally, nine optional criteria are covered in the ESG survey to capture project's credentials on more challenging ESG topics such as building's decarbonization strategy alignment with CREEM pathways or assets' contribution to biodiversity loss for instance. Each mandatory indicator has a list of possible responses allowing us to determine a score.

Due to the nature of the asset class (*i.e.*, debt) and the standard holding period (3-5 years on average), there are limitations as to the ability to effect meaningful change in the underlying asset ESG performance. However, to actively manage the level of underlying assets sustainability risk within the CRE debt portfolio, the investment teams adjust the ESG scoring annually for any improvement or deterioration in the project or sponsor ESG credentials.

These indicators help to determine the overall ESG score of the project which serve as informative indicators of underlying ESG performance and sustainability risk.

If such sustainability risks materialize in respect of any investment, they may have a negative impact on the financial performance of the relevant investment. AXA IM does not guarantee that the investments are not subject to sustainability risks to any extent and there is no assurance that the sustainability risks assessment will be successful at capturing all sustainability risks at any point in time. Investors should be aware that the assessment of the impact of sustainability risks on the performance is difficult to predict and is subject to inherent limitations such as the availability and quality of the data.

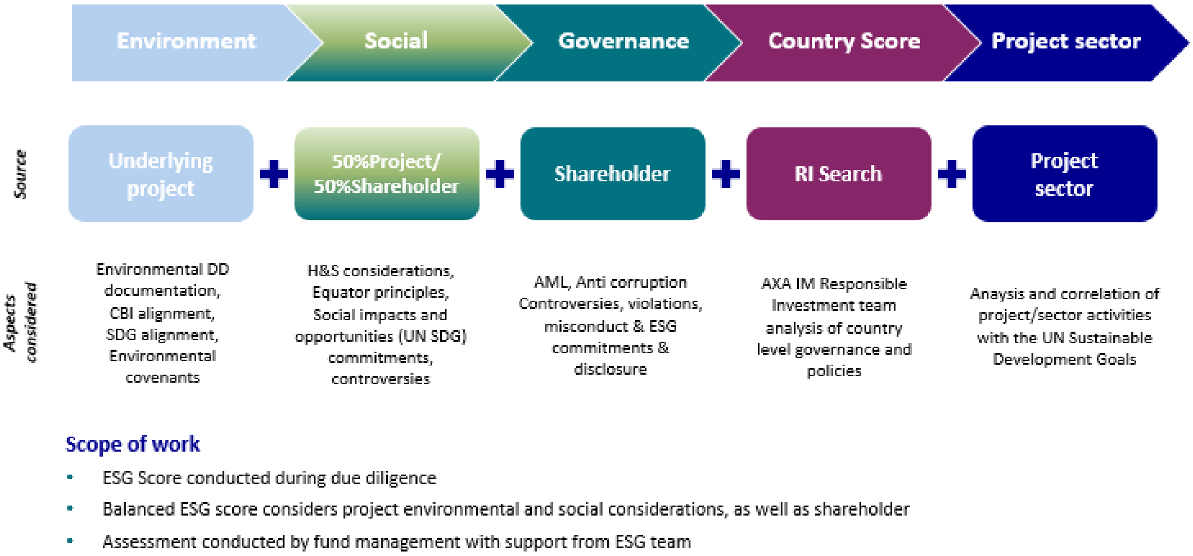


Source: AXA IM, 2022.

[14] Detailed list of indicators and criteria available upon request.

Infrastructure debt ESG rating

For Infrastructure Debt, the ESG assessment has a total of 33 indicators[15]. We require that borrowers provide comprehensive technical and environmental data to enable us to properly assess the investment. The indicators reviewed are based on the project sector, social utility, environmental impact and ESG commitments of shareholding companies.



Source: AXA IM, 2022.

To assess the environmental and social score of the transactions, our investment teams will take into account:

- The category of the project (*e.g.*, renewable energy, energy grids, transport, telecom etc.);
- Specific covenants related to environmental matters;
- Specific environmental risk in the due diligence process (biodiversity risk, water risk etc);
- Certification of the project by a recognized entity (BREEAM New Infrastructure, CEEQUAL, SuRe etc.);
- Environmental risks and opportunities aligned with the Climate Bonds Initiative (CBI);
- Environmental & Social risks and opportunities via alignment with UN SDGs;
- Specific health and safety risks.

To complement the project E and S performance, indicators for the S and G components also consider the following for the project shareholders:

- Public charter engagement (UN PRI signatory, UNGC signatory);
- Compliance analysis (KYC and AML screening, World Check database screening);
- Participation in ESG initiatives (Sustainability policy, GRESB participation, public membership association).

These indicators help to determine the overall ESG score of the project which serve as informative indicators of underlying ESG performance and sustainability risk.

[15] Detailed list of indicators and criteria available upon request.

- Infrastructure equity ESG rating

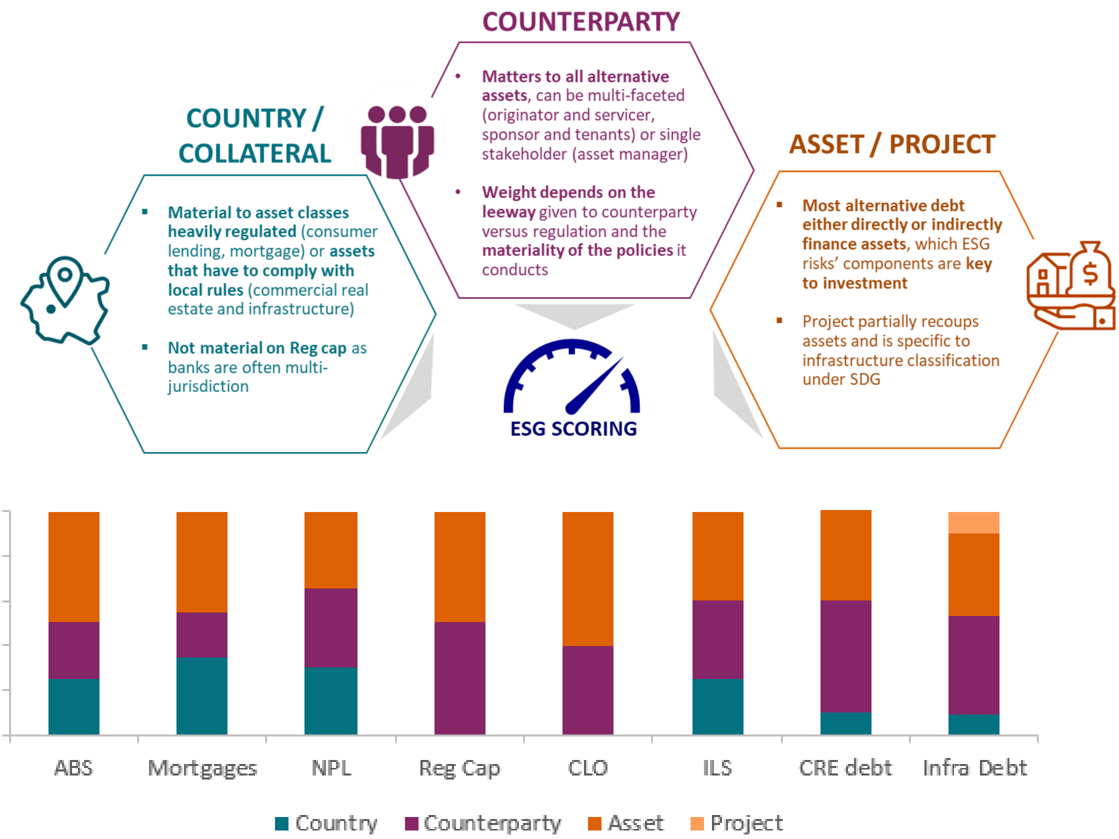
For the asset class of infrastructure equity, non-financial criteria are taken into consideration during the due diligence and investment committee process as well. A scoring methodology specific to this asset class has been developed for the purpose of allocating an ESG score to manage and monitor ESG risk in a consistent way across all platforms.

The ESG assessment has a total of 10 indicators[16]. Each indicator has a list of possible responses allowing us to determine a score. Our ESG evaluation accounts for criteria based on project's sector categorization under the CBI taxonomy and the EU Taxonomy for sustainable activities, including any specific environmental impacts. In addition, we assess the ESG commitments of shareholding companies or partners and review performance against specific indicators such as Health and Safety, Board gender diversity and compliance with the OECD Guidelines on Multinational Enterprises. Investment specific performance targets which are aligned with the above assessments are incorporated into the active management of direct equity infrastructure investments.

The ESG rating tool is scheduled for enhancement in the first semester of 2023 to integrate additional ESG considerations in our investment assessment.

ESG ratings for other alternative asset classes: Alternative Credit

Since 2021, ESG rating has been adapted to **Alternative credit specificities** in assessing country/collateral, counterparty and asset/project factor depending on the expertise as follows:



Nature of asset per type of alternative asset class. Source: AXA IM, 2022.

[16] Detailed list of indicators and criteria available upon request.

- ### Leverage loans and private debt ESG rating

For new loans and bonds issued by corporates that are not rated by the previous methodology, another scoring methodology is put in place. Until early 2023, it was based on Ethifinance data. This methodology relies on answers to 32 questions rated on a scale from 0 to 10 and classified in the same 6 factors and sub-factors as the corporate framework. The sectorial weighting and regional adjustment are also the same. The controversy level of the issuer is also evaluated by Ethifinance and integrated in the model in the same way as the corporate framework.

Since early 2023, we rely on FinDox to provide us with ESG data on leveraged loan issuers. Data is then used to compute the ESG rating, based on our internal methodology. This specific ESG scoring methodology relies on the same framework as MSCI: 3 pillars, 10 themes and 35 key issues. The KPIs collected by FinDox on each issuer are mapped to MSCI's 35 key issues. Among the data collected by FinDox, we selected 55 KPIs to perform the ESG scoring with each answer to these KPIs rated on a scale from 0 to 10 based on our proprietary scoring model[17]. The final ESG score is computed as the weighted average of the pillars scores using the MSCI sectoral weights. The controversy level of the issuer is also evaluated by FinDox.

As ESG assessment is relatively new in this asset class, disclosure for some issuers is very low, therefore we add bonus/malus scores for a few important KPIs on which coverage remains limited. This penalty or reward also helps communicating to the loan market, the importance of looking at all these topics while it is at the start of these ESG considerations.

- ### Other Alternative Credit ESG rating

Proprietary methodologies capturing other asset classes specificities through quantitative and qualitative assessment have been developed in 2021 for Collateralized loans obligations (CLOs), Insurance-linked securities (ILS), Synthetic Risk Transfer (RegCap), Asset-backed securities (ABS), Mortgages and Non-performing loans (NPL).

CLOs

We have created a proprietary methodology to assess ESG risks for new CLO investments. Both the CLO manager and the CLO portfolio are examined, which allows us a **dual and dynamic approach**.

The CLO manager score targets the seriousness of the CLO manager (not only when contemplating loan investments) and its ESG approach completed with calls/meetings dedicated to ESG. It allows incorporating the importance of reinvestment scheme in CLOs: a portfolio can be currently built with no strong attention for ESG but being managed by a CLO manager strongly committed to apply a solid ESG approach going forward.

We complement the analysis with questions directly focusing on loan investments which allows us to build a Portfolio score focusing more effectively on ESG rules regarding loan pools. The portfolio score assesses **the accuracy of ESG criteria for the CLO manager when selecting loans**. This approach still mainly relies on the CLO manager actions and convictions.

The portfolio score and the CLO manager score both lead to a **global ESG score** for the CLO.

[17] Detailed list of indicators and criteria available upon request.

ILS

We assess the 3 ESG pillars: Environment, Social and Governance using data related to the 3 key components of an ILS structure: Collateral, Sponsor and Ultimate beneficiary.

Regarding **Collateral score**, the scoring is performed by our Responsible Investment (RI) team for all the collaterals. We currently have an ESG rating for all our collaterals.

The **Sponsor score** is assessed by our RI team as well. However, for some counterparties, we currently do not have any rating that is the reason why we have defined an ESG questionnaire for our counterparties (sponsors). This questionnaire serves as a basis to the assessment when there is no internal rating. We also base our research on an external provider, MSCI, to complete the assessment.

Finally, we estimate the **Ultimate beneficiary score** through the answers to a dedicated questionnaire which is sent to the sponsor. The ultimate beneficiary in ILS deals is usually different than the sponsor and might be difficult to know. Regarding this assessment we focus mainly on the Environment and Social pillars with limited questions on the "Governance" component.

When assessing the ultimate beneficiary score, we are trying to know who will get the cash at the end if there is an event:

- Are we hedging ultimately some corporates involved in the coal, tar sand… industries? We want to be more in line with the exclusion lists at the sponsor level buy putting some penalties on these industries without having a real exclusion like for the sponsor;
- Are we covering low-income or green insurance policies? We want to add more value on the deals such as those covering some developing countries.

AXA IM's proprietary ESG framework is based on the most relevant and material ESG risks and opportunities identified for ILS. Each component (collateral, sponsor & ultimate beneficiary) uses different weightings to reflect the accuracy of the underlying investment.

These indicators help to determine the overall ESG score, ranking from 1 to 10, of the project which serve as informative indicators of underlying ESG performance and complement the sustainability risks analysis.

RegCap

In RegCap investments, **the originating bank** generally designates a systemic commercial bank which sources and underwrites exposures included in the initial portfolio and replenishments. The originator is responsible for workout process when defaults occur and is the counterpart of the protection agreement and often the recipient of the deal cash collateral.

The underlying portfolio designates the portfolio structure we invest in: it sits on from the originator's balance sheet and comprises between hundreds to thousands of underlying exposures. AXA IM's proprietary ESG framework is based on the most relevant and material ESG risks and opportunities identified for RegCap investments: our methodology to assess ESG risks for RegCap investments is based on research from internal and external data providers and each new investment undergoes a specific **ESG questionnaire-based analysis** sent to our counterparties (originator).

In RegCap investments, each transaction is categorized through **an assessment of the originating bank** which focuses more effectively on ESG rules of the bank issuing the portfolio. This ESG assessment can be made either if the bank is already **rated by RI teams**, with an unadjusted ESG score split by E, S and

G components, or if the originating bank has not yet been rated, we send it a **corporate ESG questionnaire**. The answers are then subjected to "fact checking" in order to investigate the effectiveness of the declared ESG processes and rules. To conclude this analysis, we attribute an **ESG score**, ranking from 0 to 10, which composes 50% of the transactions' ESG total score.

Regarding the Underlying Portfolio assessment, we focus on the Originating Bank's ESG policies and exclusions in its **underwriting process** through the sending of an **underwriting questionnaire** and on a country score based on an external provider, MSCI, country-data if the underlying portfolio is mono country. Once received, the results of the ESG questionnaire are analyzed by our teams, with **"fact checking"** involved. We ask for examples and/or toolkit from originator to assess the seriousness of their declared ESG processes. An **ESG score** is then attributed based on these elements, which composes **50% of the transaction's final ESG score.**

Those 2 individual ESG studies are then compiled into a **global ESG score** ranking from 1 to 10 for the RegCap considered transaction.

ABS, mortgages & NPL

AXA IM ABS, mortgages and NPL team decomposes its investment universe into three categories: **Counterparty, Asset** and **Country**. We assess the ESG pillars: E, S and G using data related to these 3 categories. Our methodology to assess ESG risks for ABS, mortgages and NPL is based on research from internal and external data providers (such as counterparty, country or portfolio assessment). Each new investment undergoes an **ESG analysis.**

Taking into account the abovementioned general exclusions, AXA IM ABS, mortgages and NPL team then categorize all new potential investment through a **Counterparty assessment**. This assessment relies on either an ESG questionnaire sent by the investment team or on the ESG counterparty indicators performed by AXA IM RI teams when available.

As a key element of the securitization, **Assets** attract a large weight in the AXA IM ESG framework. Assets are valued based on portfolio data and during the due diligence process considering the specificity of each expertise (ABS, mortgage or NPL).

Country-related indicators form parts of the asset analysis and are based on data from an external provider: MSCI. The country score captures macro risks following the three ESG pillars.

AXA IM's proprietary ESG framework is based on the most relevant and material ESG risks and opportunities identified for ABS, mortgages and NPL. Each expertise (ABS, mortgages & NPL) uses different weightings for counterparty, asset & country to reflect the accuracy of the underlying investment.

These indicators help to determine the **overall ESG score** ranking from 1 to 10, of the project which serve as informative indicators of underlying ESG performance and complement the sustainability risks analysis.

AXA IM ESG Dashboard

2022 ESG Dashboard on listed assets

We produce on an annual basis an ESG Dashboard at AXA IM level aiming to summarize asset classes' contributions to the global ESG score. Using the Q² methodology, the dashboard below is based on AXA

IM worldwide holdings' but specifically focuses on traditional asset classes – equities, sovereign bonds and corporate bonds – at the end of year 2022[18].

		Asset under management (AuM) at end of year[19]	Scores				
			Aggregated ESG score (weighted)	E score	S score	G score	Coverage
		[in M€]	[0-10]	[0-10]	[0-10]	[0-10]	[%]
AXA IM traditional assets	***2021***	***479,491***	***6.15***	***5.93***	***6.37***	***6.06***	***94%***
	2022[20]	***388,479***	***6.74***	***6.12***	***6.33***	***6.33***	***98%***
Equities	*2021*	*87,153*	*7.10*	*6.69*	*5.43*	*5.39*	*95%*
	2022	*59,358*	*7.37*	*6.84*	*5.54*	*6.04*	*98%*
Corporate Bonds	*2021*	*186,862*	*6.92*	*6.89*	*5.14*	*5.24*	*89%*
	2022	*161,192*	*7.08*	*7.32*	*5.20*	*5.84*	*97%*
Sovereign Bonds	*2021*	*205,476*	*6.18*	*4.54*	*7.74*	*7.00*	*100%*
	2022	*169,457*	*6.21*	*4.79*	*7.64*	*6.87*	*100%*
Benchmarks[21] *(equally weighted result on the 3 benchmarks below)*	***2021***			***6.10***	***5.98***	***5.51***	***98%***
	2022		***6.44***	***6.27***	***6.06***	***5.93***	***98%***
MSCI All Country World Index (ACWI)	*2021*			*6.50*	*5.06*	*4.83*	*100%*
	2022		*6.7*	*6.54*	*5.24*	*6.04*	*100%*
ICE BofA Global Broad Market Corporate	*2021*			*6.85*	*4.87*	*4.97*	*95%*
	2022		*6.67*	*7.16*	*5.07*	*5.77*	*96%*
JP Morgan GBI Global Govies	*2021*			*5.00*	*7.97*	*6.72*	*100%*
	2022		*5.96*	*5.09*	*7.88*	*6.41*	*100%*

Source: AXA IM, MSCI, 2022.

2021 to 2022

Compared to 2021, we report an overall increase of our ESG scores for listed equities and corporates bonds which is the consequence of both structural market moves regarding ESG criteria (looking at the increase on E, S and G scores between 2021 and 2022 for benchmarks) and of both the implementation of AXA IM RI framework.

[18] Worldwide holdings include the assets managed by AXA IM Paris SA.
[19] Accounted assets under management (AuM) are the sum of the net asset value of assets managed by AXA IM, readjusted to take into account double counting (i.e. for holdings in funds managed by AXA IM) and carve-outs. It is aligned with the approach taken to account for the defined "current value of all investments" within the SFDR Delegated Regulation 2022/1288 at entity-level.
[20] The significant decrease in reported AuM is representative of the market evolution in listed markets, as AXA IM Core AuM went down from €594 billion AuM at end of 2021 to €482bn at end of 2022.
[21] The aggregated ESG score is not reported for benchmarks for 2021 as the rebased weighted ESG score is not available for this year. The weighted ESG scores reported in the previous report were non-rebased scores.

The increase in the G pillar score is primarily due to a change in the methodology. The assessment of board independence was improved by adding key performance indicators, and the Accounting Key Issue has been redesigned to focus on auditor independence and tenure.

On the E pillar, the financial environmental impact which measures the risk of credit defaults from exposure to industries with high environmental risk has been redesigned. Seven metrics as for example "does the company offers consulting services" have been removed as these factors did not provide sufficient differentiation to assess a company's effort to mitigate environmental credit risk.

We also report an increase in data coverage, especially for listed corporate bonds, which is due to the increase of the coverage of our data provider, MSCI, and of AXA IM qualitative assessments with 111 additional ESG scores based on a qualitative analysis compared to 2021. ESG Scores of corporates also remains above the benchmark, for equities and bonds. As for sovereign bonds, the ESG scores are overall steady and, while the environmental score is below the compute benchmark, the weighted ESG score remains above it.

2022 ESG Dashboard on alternative assets

Since 2016, AXA IM Alts has developed ESG scoring methodologies for alternative asset classes as described above. The table below shows the results of the implementation of these methodologies, all rated from 0 to 10 for each pillar and aggregated ESG scores.

		AuM at end of year[22]	Scores				Coverage
			Aggregated ESG score (weighted)	E score	S score	G score	
		[in M€]	[0-10]	[0-10]	[0-10]	[0-10]	[%]
AXA IM alternatives assets	*2021*	*134,180*	5.60	5.39	5.78	6.35	*87%*
	2022[23]	*84,685*	5.76	5.77	5.74	6.06	*95%*
i) Real Estate & Infrastructure	*2021*	*80,679*	5.83	5.72	6.13	6.50	*90%*
	2022[24][25]	*37,778*	6.26	6.61	5.78	6.67	*93%*

[22] Accounted assets under management (AuM) are the sum of the net asset value of assets managed by AXA IM, readjusted to take into account double counting (i.e. for holdings in funds managed by AXA IM) and carve-outs. It is aligned with the approach taken to account for the defined "current value of all investments" within the SFDR Delegated Regulation 2022/1288 at entity-level.

[23] Figures aggregated across alternative assets are the sum of real estate & infrastructure assets on AXA REIM SGP scope only and Alternative credit, Natural capital & Impact assets on worldwide holdings (see two following footnotes). Thus aggregated ESG scores in 2022 are only for information and comparison with 2021 but not representative of the full scope of alternative assets managed by AXA IM.

[24] In 2021, the scope of this reporting was based on worldwide holdings AuM for real estate and infrastructure assets. In 2022, in line with the scope and requirements of Article 29 of the French Energy and Climate law which has now come into force, this reporting should be based on AuM from French regulated entities only. For real estate and infrastructure assets, this reporting is therefore limited to assets managed by AXA REIM SGP for 2022, while figures for 2021 incorporated worldwide holdings. As a result of this variation in the regulatory scope, overall AuM reported have significantly decreased in order to align with the requirements of the regulation and figures provided in 2022 are not comparable to the ones reported for 2021.

[25] For real estate & infrastructure assets, as for 2022 figures, E, S, G & ESG scores have been computed taking into account unlisted and listed assets scores. For real estate perimeter, real assets funds and buckets of listed assets of ASI & ASIS have been included. As for infrastructure perimeter, buckets of listed assets for AXA Avenir Infrastructure have been taken into account. Scores have been computed based on asset weighting for each portfolio. Theses listed assets were not included in 2021 figures.

Real estate	*2021*	*68,590*	5.70	5.26	6.24	6.44	*91%*
	2022	*28,730*	6.24	6.08	5.85	6.53	*89%*
Infrastructure	*2021*	*12,089*	6.54	8.21	5.46	6.74	*100%*
	2022	*13,089*	6.43	7.46	5.52	6.88	*100%*
ii) Alternative credit[26]	***2021***	***53,501***	**5.21**	**4.84**	**5.17**	**6.10**	***81%***
	2022	***46,907***	**5.39**	**5.13**	**5.69**	**5.56**	***95%***

Source: AXA IM, MSCI, FinDox, 2022.

2021 to 2022

In 2021, the scope of this reporting was based on worldwide holdings AuM for real estate and infrastructure assets. In 2022, in line with the scope and requirements of Article 29 LEC, this reporting should be based on AuM from French regulated entities only. For real estate and infrastructure assets, this reporting is therefore limited to assets managed by AXA REIM SGP for 2022, while figures for 2021 incorporated worldwide holdings. As a result of this variation in the regulatory scope, AuM reported have significantly decreased in order to align with the requirements of the regulation and figures provided in 2022 are not comparable to the ones reported for 2021.

ESG ratings for infrastructure investments held in portfolio in 2021 have not changed in the course of the 12 months leading to December 2022, new entrants and exits alongside partial pre-payments and amortisations have all had an effect on the infrastructure debt portfolio level ESG weighted average score. Additionally, as the scope has changed, some of the newer vintage investment vehicles have been excluded, resulting in a decrease in portfolio level weighting. It is noteworthy to mention that the infrastructure debt team has been increasingly financing assets with strong ESG credentials in recent years though.

In 2022, real estate ESG scoring has significantly increased in performance, reflecting the central role of ESG in managing real estate assets and the global implementation of our ESG strategy across our portfolios. This increase reflects the integration of non-EU countries (US, Japan, Australia) in our data management platform and ESG reporting process, as well as the significant improvement in the data collect process over these past 2 years. The average scoring improved from 5.70/10 in 2021 to 6.24/10 in 2022, an increase of ~12%, which is explained by several factors and actions deployed along the year:

- The deployment of a performance monitoring feature in our data management platform, providing visibility on each asset performance for each ESG topic as well as comparison to peers (internal buildings of a same typology), as well as an action plan feature providing recommendations on the most relevant actions to implement based on scoring and company priorities;
- training sessions to improve property managers and asset managers understanding of the rating and ESG in general;
- the integration of dedicated targets in asset managers' annual objectives to incentivise increasing assets ESG performance.

The methodologies and process developed over the past 2 years have proven efficient in supporting our ambition to improve the ESG performance of the real assets we manage.

[26] Worldwide holdings including asset managed by AXA IM Paris SA.

The score will continue to evolve over time to reflect market requirements and best practices, with the objective to continue improving assets performance between acquisition and disposal.

Out of the €9.9bn of CRE debt loans AuM, 72.22% (€7.16bn) have been analyzed and rated with the ESG rating methodology developed in 2016, which was still in use as of December 2022. This coverage rate increased 9 basis points (up from 63% in 2021) due to the additional data collection achieved thanks to a new ESG questionnaire circulated to borrowers. ESG scores have not moved significantly since 2021 as the methodology used to report on those remained unchanged through December 2022.

However, as mentioned above, the CRE debt ESG rating has evolved at end of 2022 and the CRE debt investment team has undergone in the first quarter of 2023 a review to update its entire standing loan portfolio's ESG scores based on the new methodology. Going forward, the enhanced ESG rating methodology shall apply to all the loans held in portfolio.

Meanwhile, in 2022, the asset weighted average ESG score for our infrastructure equity remained fairly aligned with 2021's even while AuM increased by more than 22%. A major addition to the infrastructure equity portfolio was the investment in Hornsea Two, the world's largest offshore wind farm which achieved one of the highest scores based on our ESG rating framework thanks to its strong ESG credentials.

The ESG score of infrastructure debt loans included in this report's scope 23 assets averaged 5.75 through the end of 2022. While the underlying loans' ESG ratings have not changed in the course of the 12 months leading to December 2022, new entrants and exits alongside partial pre-payments and amortisations have all had an effect on the portfolio level ESG weighted average score.

Additionally, as the scope has changed, some of the newer vintage investment vehicles have been excluded, resulting in a decrease in portfolio level weighting. It is noteworthy to mention that the infrastructure debt team has been increasingly financing assets with strong ESG credentials in recent years; 2022 was no exception with 3 out of 9 new additions being aligned with the CBI taxonomy.

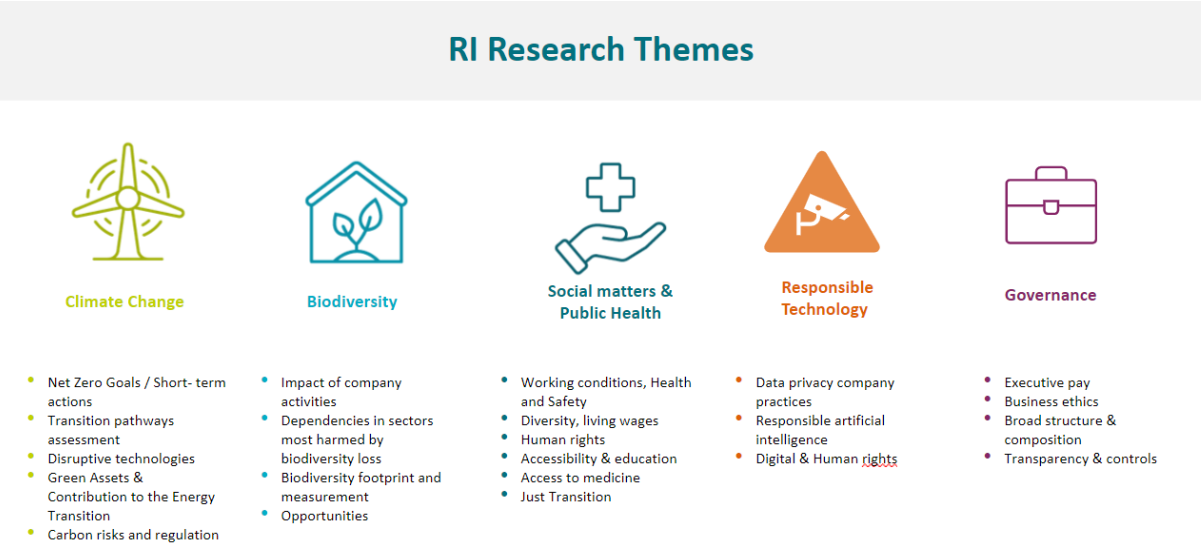
As for the Alternative credit business line (incl. Natural capital & Impact investments), compared to 2021, 2022 marked a significant increase in the data coverage of assets with ESG ratings. All alternative asset classes have reached (or almost) 100% of ESG data coverage.

ESG Qualitative Research

ESG qualitative research for knowledge management and engagement purposes

At AXA IM, we produce in-house ESG research on key themes including Climate change and Just transition, Biodiversity, Gender diversity and human capital, Human rights, Cyber security and data privacy, Corporate governance notably. Research papers are published on the Investment Institute page of our website[27], and listed further below in this report (see Appendix 5). This research allows us to identify ESG risks, understand and anticipate their impacts on the assets in which we invest as well as the impact of our investments on environmental and social aspects. Key findings from this research also inform adjustments to our stewardship and exclusion strategies. AXA IM's thematic research papers are published on our Investment Institute.

[27] Sustainability | AXA IM Corporate (axa-im.com)



Source: AXA IM, 2022. For illustrative purpose only.

Challenges inherent in the transition to a low-carbon economy are massive, global and multi-facetted, touching on the very nature of sustainability. The purpose of RI research is to identify key themes at stake in the field of Responsible Investment, in order to feed thoughts, anticipate and manage those material risks & opportunities, informing accordingly both policies and investment decisions.

The usual suspects that Climate and Biodiversity must be complemented by new social themes such as Human Rights and the Just transition, which act as transversal dimensions that have to be integrated to all aspects of the transition.

Concretely, 2022 RI Research publications have focused on many areas and paved the way for reinforced engagements: as for climate, digging into promising but still limited in scale technological developments has fed our assessment of how companies in some high emitting sectors move forward and need to enhance their climate strategies. More recently, our analysis of Scope 3 CDP data has helped set the scene around this much scrutinised segment of climate policies, highlighting how corporates can contribute to the whole ecosystem change that is required, despite the lack of control they have, and how as asset managers and engagers we can influence them to play an active role.

As for Biodiversity, we have extended our efforts beyond deforestation, focusing on specific biodiversity impacting drivers such as plastics and waste but also water, to set a broad picture of where risks but also opportunities are. Alongside the use of Iceberg Data Lab (IDL), it will pave the way for strengthened engagements in many sectors including food. This will be further supported in 2023 by our joining two new collaborative engagement initiatives, focused on Hazardous Chemicals (with ChemScore) and Waste & Pollution (with FAIRR), that will nicely complement our active participation in Nature 100.

In the wider transversal segment of Social, we have dug further in the analysis of human rights risks, gathering experts' "on the ground" views in the field of child/forced labour, with the aim of raising companies' awareness on the first steps to take to limit the risks to the person, which unsurprisingly start by a cartography of most at-risk activities and geographies. This will help us to increase the pressure on companies too slow to enhance their sustainability practises and accompany those genuinely willing to enhance their practises. As we all know, this is crucial in some sectors such as Mining or Technologies, still key for the transition though.

2023 will for sure require sustained efforts on all those fronts and new ones as well, tackling the supply chains and embarking emerging market companies in our journey. Whatever the thematic retained, the need for a just transition remains acute and efforts will have to be strengthened.

Focus on our approach to address the 'Just transition'

Over 2022, in a more complex world, we extended our interactions to cover human rights and the 'Just transition' to mitigate increasing social risks. As an asset manager, we want to start integrating this nascent concept of 'Just transition' into our investment decision-making. This will require different approaches for different sectors – but it will certainly entail a consideration of how business models are evolving, how human capital is managed and how companies develop their role as employer and stakeholder. Moving to low-carbon energy, buildings, transportation and industrial production will bring dramatic adjustments and challenges to countries and industries – and therefore to workers and their communities. A failure to anticipate the social implications of those challenges could stall climate progress and contribute to political instability through increasing inequality. This would risk disrupting the fragile equilibrium between developing and developed economies. Issues of accessibility and affordability must also be integrated in our assessment.

From a bottom-up approach, we have walked the talk participating in a new collaborative initiative, the Just Transition Engagement initiative led by the French Institute of Sustainable Finance (*Institut de la Finance Durable* – IFD), which targets companies in 4 sectors: energy, construction, transport and agri-food. The objective of this initiative is to ensure the social implications of a transition to a low-carbon economy are sufficiently anticipated. The first takeaway from the first round of engagements that were held is to confirm the widely accepted view that the Just transition remains an immature topic, and quite logically it seems that companies in the energy sector were among the most responsive. A lot of efforts remain to be done though, to ensure that some local initiatives that may exist are not isolated cases. In other words and beyond the need to tackle this topic at board level, what is still crucially lacking is to reconcile local and global, *i.e.*, reconcile bottom-up approaches with a global and top-down approach, articulating the strategy into risk identification, key levers activated and ensuring that all relevant stakeholders are part of the dialogue, form employees to local communities and supply chain, the latter being obviously a huge challenge. Few KPIs have already been identified and will foster the use of enhanced practices for still a number of companies. As leader of the engagement with the energy sector, we have engaged directly with 4 companies from this sector within this initiative.

ESG qualitative research for investment decision-making: AXA IM Core 'Impact Investing in Listed Assets' framework

AXA IM uses a proprietary 'Impact Investing in Listed Assets' framework to identify companies that generate significant positive impact on society and the environment and contribute to progress towards the UN SDGs according to AXA IM. This framework is notably based on five pillars that characterize impact investing:

Intentionality	Materiality	Additionality	Negative Externalities	Measurability
Investments should be made with an upfront objective of positive social or environmental outcomes. Our research seeks to identify companies that demonstrate an **intentional, strategic commitment to positive impact.**	The investee companies should offer **solutions that are materially significant** to the beneficiaries and to the company.	We seek to invest in companies offering the **best and most accessible solutions**, for example through innovation, new technologies, lower prices, or better distribution.	We assess how companies are **addressing the negative externalities** of their activities which may undermine their positive impact.	Companies are expected to **measure and report data and KPIs** on the social and environmental impact of their activities.

Source: AXA IM, 2022. For illustrative purpose only.

We are continuously expanding our coverage. Below are two examples of companies that we deem to be "impact leaders" (the highest rating in our framework).

Impact Leader
Airtel Africa

Airtel Africa is a telecommunications solutions provider operating in 14 countries in Sub-Saharan Africa (Niger, Nigeria, Chad, Gabon, Republic of Congo, Democratic Republic of Congo, Uganda, Kenya, Rwanda, Tanzania, Zambia, Malawi, Seychelles, Madagascar). Sub-Saharan Africa is the region with the largest coverage gap[28] (19%) and is home to 47% of the world's uncovered population (estimated 210M people in 2020). The region's coverage gap is more than 3x the global average. However, the region is seeing an increase in coverage, with major 3G and 4G rollouts in West and East Africa, including Nigeria, Mali and Tanzania. Affordability remains one of the most pressing concerns in South-Saharan Africa, with the median cost of internet-enabled handset and 1GB of monthly data standing at 26% and 4% of monthly GDP per capita respectively (the highest in low- and middle-income countries).[29] Airtel Africa is contributing significantly to the attainment of SDG 9 (specifically to sub-goal 9.1)

Impact Leader
Neoen

Neoen is an independent renewable electricity generation and electricity storage provider. Neoen generates electricity for its clients via solar photovoltaic and onshore wind assets. At the end of 2021, Neoen operated 102 generating and/or storage projects, in Continental Europe, Australia, the Americas and in South-Eastern Africa. Annual consolidated renewable production was about 4.9 TWh in 2021, up by almost 130% compared to 2018. At the end of 2021, the group owned and operated 3.48 GW of generation capacity. This represented a year-on-year growth of 33% in operating generation capacity. Most of the electricity produced by Neoen is sold to public actors and utilities. In addition to these customers, Neoen also serves private off-takers, and it has cumulated over 1.3 GW of corporate Power Purchase Agreements (PPAs) with 13 off-takers since 2015. Neoen also owns and runs energy management and storage assets. As of the end of 2021, Neoen had over 941

[28] Coverage Gap refers to those who live in an area not covered by a mobile broadband network, it is calculated as a percentage of total population in a specific country/area.
[29] The State of Mobile Internet Connectivity 2021 - GSM Association. Available at https://www.gsma.com/r/somic/

through the rollout and operation of telecommunication infrastructure networks with a focus on connecting the unconnected in disadvantaged areas in rural Africa. Since internet accessibility can play a vital role in enhancing the socio-economic well-being of a society the company also contributes positively to SDG 1 (sub-goal 1.4) by allowing access to basic services, in particular to the poor and the vulnerable with limited access to financial and banking services. Similarly, the company contributes to the attainment of SDG 8 (sub-goals 8.3 and 8.5) by promoting rural job development, skilling and reskilling of local population. Positive contributions are also made with respect to SDG 4 (sub-goals 4.3 and 4.4) through specific initiatives designed to foster primary education and vocational training in rural areas.

MWh of energy storage assets in operation and under construction, a majority of which are in Australia. Neoen considers energy storage as an independent revenue-generating activity, given its role in responding to imbalances in supply and demand more rapidly than thermal power plants and reducing curtailment (voluntary reduction in output below normal capacity). Neoen contributes positively to the global efforts in power decarbonization and electrification, thanks to its pureplay approach in renewable generation and continuous investment in increased production and storage capacity. Neoen helps governments in achieving their national climate change objectives and enables corporate clients to reduce their Scope 2 emissions. At the end of FY 2021, Neoen's renewable generation assets permitted to avoid over 2.23 million tonnes of CO_2 per annum. Neoen contributes directly to SDG 7.2 via its renewable generation asset base, to SDG 7.3 and 9.1 via its growing energy storage asset base, and to SDG 13 via both clean energy and storage solutions, which also contribute to climate change adaptation.

Source: AXA IM, 2022. For illustrative purpose only.

Green, Social, Sustainability, Sustainability-Linked and Transition bonds

- ### Green, Social and Sustainability bonds

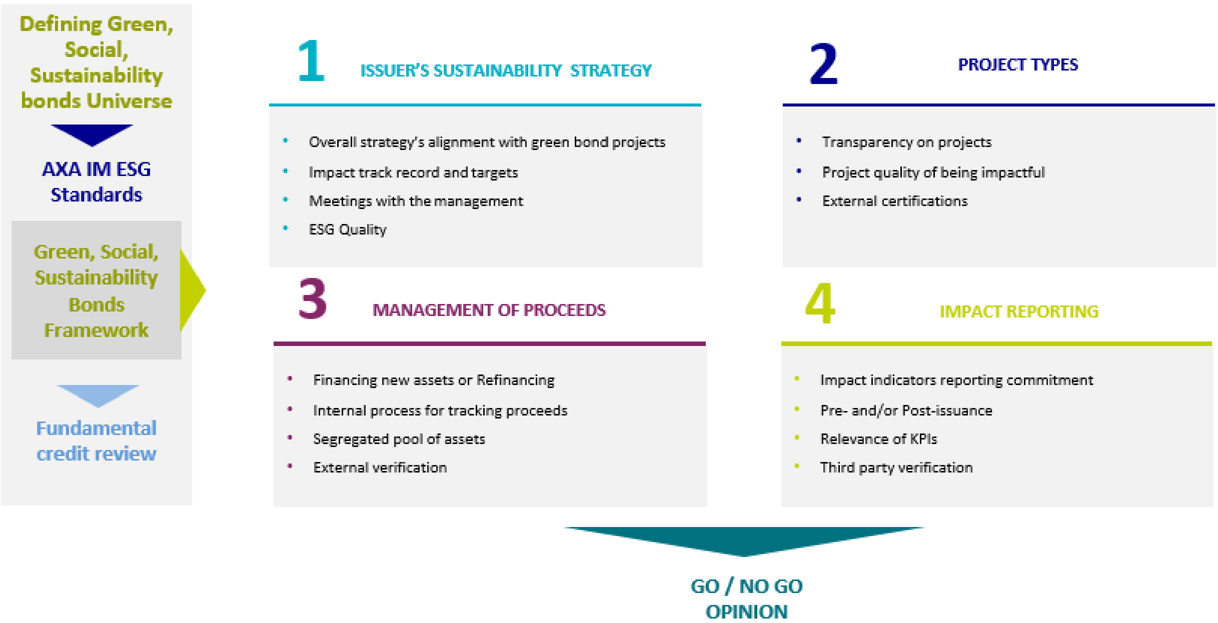
AXA IM has developed a proprietary green bond assessment framework. We then built on this to create new frameworks for social and sustainability bonds. These are very similar in terms of structure, but some aspects differ due to the specificities of social and sustainability bonds. This approach is stringent, but it is also continuously evolving and aims to fulfil three main objectives:

- Driving investments towards authentic and impactful green assets and social projects
- Raising the integrity and transparency standards of the Green, Social and Sustainability bonds (GSSB) market;
- Ensuring that GSSB issuers are committed to fight climate change and to address sustainability challenges, and that this commitment is reflected in business practices and operations.

Selectivity is key in ensuring that only the most relevant and impactful green and social projects receive the necessary financing. This framework relies qualitative assessment made by the RI Research team into the Q^2 scoring frameworks and on Bloomberg database, whether it is a corporate or sovereign

bond, to produce an enhanced ESG score for GSSB issuances. It is used in a systematic manner for our Global Green Bonds and Social Bonds strategies specifically, and also to inform the decisions of portfolio managers for other strategies but not applying in a systematic manner. This has so far been used to review more than 2100 GSSBs, and we believe this has helped us to avoid possible misuse of funds, risks of unethical practices and greenwashing. On average, since 2014, our green bond framework has led us to exclude around one in five bonds presented to us as green, social, or sustainable.
AXA IM's GSSB assessment framework, notably inspired by the Green and Social Bond Principles (GSBP) and the Climate Bonds Initiative (CBI), is made up of four pillars (see graph below):

1. The environmental, social and governance (ESG) quality and strategy of the issuer
2. The use of proceeds and the process for project selection
3. The management of proceeds
4. Impact reporting



Source: AXA IM, for illustrative purpose only. These are internal guidelines which are subject to change without notice.

For each pillar, our analysts review, assess, and monitor several well-defined criteria, many of which are mandatory. At the very least, the issuer must surpass our exclusion criteria and to comply with our "requirement" criteria in order to be investable. If a GSSB also meets our "expectation" criteria, it would place the issuer among the GSSB leaders. The factors outlined below are intended to be indicative and non-exhaustive. This is primarily because individual GSSBs can vary greatly and therefore their individual assessment involves subjective criteria, as is always the case in qualitative analyses.

At AXA IM, we believe that the use of proceeds of a green bond should reflect the issuer's efforts towards improving its overall environmental strategy and its alignment with the Paris Agreement on climate change. On the social side, the issuer should also make its ambition to deliver positive societal outcomes clear. Full transparency about the projects financed and on the tracking of the proceeds is therefore essential to our assessment. We pay particular attention to impact reporting, where both qualitative and quantitative indicators are expected.

To read more about our [Green, Social and Sustainability Bond (GSSB) Assessment Framework.](#)

CDPQ

Issuer's ESG quality & strategy

CDPQ is committed to achieve a net zero portfolio by 2050, and to reduce its portfolio's carbon intensity by 30% by 2030 as an intermediary objective. To reach this objectives, CDPQ aims at having $54bn invested in green assets - using the CBI criteria as a definition - by 2025, which is 3x more than in 2017. The issuer also has a $10bn transition envelope to decarbonize carbon-intensive sectors. Regarding its exposure to highly emitting industries, CDPQ will completely exit oil production financing by end 2022. With regards to coal, it will not fund any new thermal coal projects, will phase out from coal investment by 2030 in DM and by 2040 in EM. All in all, this green bond is fully consistent with CDPQ's ambitious climate strategy.

Project types

100% of the proceeds are directed to a rail transportation project located in Canada - the Réseau Express Métropolitain - that falls under our low carbon transportation category. We appreciate the fact that CDPQ relies on the CBI criteria to define projects eligibility.
The selection is done by a dedicated committee that includes climate specialists.

Management of proceeds

The proceeds are managed through a dedicated register, with a 24 months lookback period. The allocation is verified by CDPQ's external auditor.

Impact reporting

CDPQ does publish impact reporting and provides the following impact metrics: GHG emissions avoided, train users. We also appreciate the inclusion of social metrics such as jobs created in the reporting.

BFCM

Issuer's ESG quality & strategy

This inaugural social issuance is fully aligned with Credit Mutuel's 2019-2023 strategic plan. The banking group has set ambitious sustainability objectives amongst which achieving gender equality in board and management positions by 2021, training 100% of staff on transition/change management, increasing by 30% the financing of projects with clear environmental/climate change mitigation and social benefits, decreasing by 30% its group-wide carbon footprint, a coal exit by 2030, accompanied by an increasingly stringent exclusion policy (now for coal and non-conventional hydrocarbons, to soon include non-conventional oil & gas.

Project types

The proceeds of this inaugural deal will be directed towards 1) Local development through SME financing. The SME definition is clear and detailed. The target population is SMEs located in underperforming economic area. 2) Access to education and professional training. The aim is to promote the development to education to all, including individuals, farmers or professionals.

Management of proceeds

Portfolio approach, external verification.

Impact reporting

Impact reporting will monitor: Number of SMEs benefiting from the Eligible Loans, Number of beneficiaries for the Access to education projects.

Source: AXA IM, 2022. For illustrative purposes only.

- ## Sustainability-linked bonds

AXA IM is committed to the idea that investors will be better positioned if they acknowledge and address climate change and sustainability in their portfolios. This has prompted us to carefully monitor the arrival of a new type of fixed income asset class: Sustainability-Linked Bonds (SLBs).

SLBs differ from GSSBs, a market where we have worked to achieve a leadership position for some years now. Unlike GSSBs, SLBs are not "use-of-proceeds" instruments – just like conventional debt, they are general purpose bonds. However, they do represent a new opportunity to fund the climate transition and other environmental and social challenges. They may also have the potential to deliver long-term, sustainable performance for our clients.

The main difference between SLBs and conventional bonds is that SLBs integrate objectives linked to environmental, social and governance (ESG) factors. According to the SLB principles set out by the International Capital Market Association (ICMA) they are:

> "*…any type of bond instrument for which the financial and/or structural characteristics can vary depending on whether the issuer achieves predefined Sustainability/ ESG objectives. Those objectives are (i) measured through predefined Key Performance Indicators (KPIs) and (ii) assessed against predefined Sustainability Performance Targets (SPTs).*[30]"

[30] Source: Climate Bonds Initiative

Put simply, an SLB issuer will have to pay more to its investors if it fails to meet its predefined SPTs – and will still pay the same coupon if it succeeds. But this isn't about greedy investors hoping SLB issuers fail in their sustainability ambitions – it is about responsible investors like AXA IM using SLBs to incentivise companies towards behaviour that we believe will benefit them, and us, over the long term.

SLBs could therefore act as a powerful tool, in particular, but not only, for high-emitting issuers to finance their transition towards a more sustainable business model. While GSSBs focus on specific projects and assets to be financed, SLBs establish a link between the issuer's ESG ambitions and the financial characteristics of the bond. An issuer's sustainability strategy may already form part of our GSSB assessment process, but it becomes the core feature for an SLB. Despite the differences, we see a common issue in these two types of instruments: There is no consensus on what a high-quality SLB is. AXA IM has therefore decided to define its proprietary framework for evaluating SLBs, and we set out our methodology and criteria in the document available for download below.

We want to highlight that SLBs will not be part of our green and impact investments – as opposed to GSSBs – but rather of our transition investments. We consider that SLBs and use-of-proceeds transition bonds both relate to transition finance instruments that will allow AXA IM to take an active role in powering that transition – in addition to our green and impact investing strategies through GSSBs.

AXA IM's SLB assessment framework is made up of four pillars:

1. Issuer's sustainability strategy & KPIs relevance and materiality;
2. SPT ambition;
3. Bond characteristics;
4. SPT monitoring & reporting.

For each pillar, at the very least, the issuer has to surpass our "exclusion" criteria and comply with our "requirement" criteria in order to be investable. If an SLB also meets our "expectation" criteria, it would place the issuer among the SLB leaders, in our view. All of these criteria are set out for each pillar below. The factors outlined are intended to be indicative and non-exhaustive. This is primarily due to the fact that individual SLBs can vary greatly and therefore their individual assessment involves company-specific factors, as accepted within qualitative analysis approaches.

► Forecasts and our 2023 projects

If quantity matters and is critical to meet the Paris Agreement goals, the growth of the green bond market should not take place at the expense of its quality. AXA IM's green bond assessment framework is built to ensure that our expectations for green bond issuers are met. Our analysts aim to select green bonds that are in line with our clients' ambitious environmental strategies. In 2023, we will update our GSSB assessment framework to reflect the latest developments of our eligibility criteria and assessment methodology – including the EU Taxonomy for sustainable activities and the inclusion of AXA IM Climate colour framework (see section 6.4).

AXA IM's call for transition bonds in 2019 reflected our view that the green bond market should keep its standards in terms of quality and integrity, while providing solutions to support issuers in their transition journey. We welcome the recent development of sustainability-linked bonds, which are innovative tools to finance the transition to a more sustainable economy. In 2021, we published our framework for assessing Sustainability-linked bonds. We will also update our assessment framework for SLBs in 2023, in the light of our upgraded expectations on this market.

Focus on the EU Green Bond Standard

The EU Green Bond Standard (EU GBS) is meant to be a voluntary, non-legislative standard to enhance the effectiveness, transparency, comparability and credibility of the green bond market and to encourage the market participants to issue and invest in EU green bonds. Building on the ICMA Green Bond Principles notably, the EU GBS is based on four key components:

1. Alignment of the green projects/assets with the EU Taxonomy for sustainable activities;
2. Mandatory publication of a green bond framework;
3. Mandatory reporting, both on the allocation of proceeds and on environmental impact;
4. Mandatory verification of i) the green bond framework and ii) the allocation report by an external reviewer.

AXA IM provided feedback on the consultation around the proposal for the EU GBS. We welcome this initiative as it will bring mandatory, high-quality requirements for green bond issuers that aims at issuing EU GBS-certified green bonds. The EU GBS is similar to AXA IM's proprietary green bond assessment framework on many aspects – *e.g.*, high quality of green projects, mandatory reporting. That said, we will keep using our internal assessment methodology, notably because we will keep excluding fossil fuel and nuclear-related projects from our green bond investments – gas and nuclear might be part of the EU Taxonomy Regulation. In addition, the EU GBS does not address the issuers' ESG quality and strategy, which is a key aspect of our assessment framework. Lastly, as a global investor, we cannot only rely on the EU GBS as it will predominantly target EU green bond issuers.

The European Parliament's Committee on Economic and Monetary Affairs recently approved a draft of the proposed EU GBS. Regarding next steps, investors and issuers are waiting for a final validation of the standard before we start to see the first EU GBS-aligned green bonds on the market.

On 28 February 2023, the EU Council and European Parliament reached a provisional agreement on the creation of the EU GBS.

We generally welcome the development of the EU GBS which we view as lifting voluntary standards in the right direction. The few elements that have been disclosed thus far and throughout the negotiations are generally in line with the overall standards that we want to see in the green bond market – standards that are already reflected in our internal framework and approach.

The creation of the EU GBS is likely to have a neutral overall impact on our internal analysis, but rather facilitate our analysis and conversations with issuers as standards rise. Its entry into force is likely to create more discernible tiers of green in the overall market, with EU GBS positioned as a best-in-class standard whose uptake will likely depend on the onerousness of compliance and incentives.

Exclusion policies

Our ESG quantitative and qualitative research help us to better understand the materiality of E, S and G challenges on sectors, companies, and countries. This research feeds our integration and exclusion strategies by identifying ESG risks that could have a detrimental and irreversible effect on the performance of our portfolios as well as on long-term global sustainability objectives if we were to be exposed to assets that carry these risks. Our **normative and sectoral exclusions** set the red lines and send a clear message to companies and sovereigns on what we consider it is not acceptable to contribute to a climate and social transition.

On assets on which we remain exposed, we apply our voting and engagement strategies with the objective to support issuers in their transition journey (see section 4 on our Engagement strategy). In applying our stewardship strategy, we set clear and meaningful objectives communicated to management, we hold regular meetings to verify and evaluate progress; and we vote with conviction or pursue other escalation techniques when required.

Our top-level exclusion policies are regularly updated to reflect its convictions and comply with the latest recent regulatory developments, including the Shareholders' Rights Directive II (SRD II), the SFDR[31] as well as the EU Taxonomy Regulation. By ruling out certain activities or practices, our exclusion policies help us to address sustainability risks in both aspects of the double materiality, *i.e.*, financial risks & impact reduction.

Overall, as detailed in the table below, the vast majority of AXA IM assets[32] have implemented the sectoral exclusions related to the following AXA IM policies that are detailed in the table below:

- **AXA IM Climate risks policy**;
- **AXA IM Ecosystem protection & deforestation policy**;
- **AXA IM Soft commodities policy**;
- **AXA IM Controversial weapons policy**.

These policies are also proposed to our clients of portfolio management services or dedicated funds on an opt-out basis. In addition, AXA IM financial products which have ESG characteristics or which have sustainable investment as their objective (i.e., Article 8 and 9 funds under SFDR, including our sustainable/ACT fund range and our impact investments) have implemented additional ESG exclusions by following **AXA IM ESG Standards policy**. This policy is also proposed to our clients of portfolio management services or dedicated funds on an opt-in basis.

Exclusion policies	Share of third-party AuM applying the policy[33]
Climate risks policy	86.8%
Ecosystem protection & deforestation policy	97.1%
Soft commodities policy	97.4%
Controversial weapons policy	99.7%
ESG Standards policy	41.7%

Source: AXA IM, December 2022.

[31] We use our sectoral & normative exclusion policies as a mean to i) consider the 'Do not significantly harm' principle (DNSH) as for defining sustainable investment following Article 2(17) of SFDR, ii) integrate sustainability risks following its Article 3, and iii) consider adverse sustainability impacts following its Article 4.

[32] On December 1st of 2022, 87% of third-party assets under management apply all our sectoral exclusion policies. The remaining 13% comprise strategies which are out of scope of the policy for technical reasons (*e.g.*, index funds, funds of hedge Funds), client opt-out and exemptions. Joint ventures (JVs) are excluded from this figure.

[33] Our sectoral and normative exclusion policies apply to all direct product investments under AXA IM's management, excluding – for technical reasons – funds of funds composed of funds which are not under the management of AXA IM, index funds, funds of hedge funds, nor tenants in real estate portfolios. They apply to AXA IM and all its affiliates worldwide, to joint ventures where AXA IM's stake is 50% or higher, and to funds for which the management is delegated to one of our joint ventures. JVs are excluded from this figure. Assets managed for AXA Group (i.e., €424bn assets at end of 2022) are excluded from this calculation, as AXA Group applies its own Responsible Investment policies. This results in €343bn accounted assets.

These policies cover:

Set of Policies	AXA IM RI sectoral policies	AXA IM ESG Standards
Environmental	**Climate** (coal mining and coal-based energy production; oil sands production and oil sands-related pipelines; shale and tight oil and gas; arctic oil and gas) **Ecosystem protection & deforestation / Biodiversity** (palm oil & derivatives; soy meal, oil & derivatives; cattle products; timber products) **Soft commodities** (food commodities derivatives)	
Social	**Human Rights** (controversial weapons)	**Health** (tobacco producers) **Labor, society and human rights** (violations of international norms and standards; white phosphorus weapons producer; exclusion of investments in securities issued by countries where serious violations of Human rights are observed)
Governance		**Business ethics** (severe controversies, violations of international norms and standards) **Corruption** (severe controversies, violations of international norms and standards)

In some case grant exemptions to issuers which are close to the exclusion thresholds, and where a robust transition plan is being implemented successfully. This exemption process is overseen by a RI governance committee, with each exemption request reviewed on a case-by-case basis.

2022 & early 2023 updates

In February 2022, we updated the Climate risks policy by adding new exclusions in the unconventional oil & gas sector announced in November 2021:

- Adding a new ban on companies deriving more than 10% of their oil & gas production from the Arctic, as defined by the Arctic Monitoring and Assessment Programme (AMAP), or representing more than 5% of the global production from the region;
- Adding a new ban on companies deriving more than 30% of their oil & gas production from fracking (*i.e.*, shale and tight oil and gas) and producing less than 100 000 barrels of oil equivalent per day;
- Reinforcing the oil sands exclusion by adding an exclusion for companies producing more than 5% of the global oil sands production.

More recently, in April 2023, we have tightened multiple exclusion criteria on coal, oil & gas:

- On coal:
    - Putting a stricter exclusion threshold to companies generating more that 15% of revenues from thermal coal mining and/or power generation, against 30% before; threshold to be reduced at 10% starting 2026 in OECD countries as part of our commitment to exit from coal by 2030 in OECD countries;
    - Excluding all companies with new coal mining or power generation projects or expansion plans;
- On oil sands: putting a stricter exclusion threshold to companies generating more than 5% of revenues from oil sands production only (not transportation, i.e., pipelines), against 20% before.

1.3 Our Responsible Investment product offering

In an environment where regulators are putting in place new standards and requirements notably to address greenwashing concerns – in particular in the EU and specific countries (*e.g.*, France, Luxemburg, Belgium), AXA IM continually improves its RI categories and product offering to ensure they follow regulatory requirements (*i.e.*, notably following SFDR and the AMF Doctrine[34]) and are clear and understandable by clients. This classification system will continue to evolve in the coming years to integrate new requirements of existing and upcoming sustainable-related regulations.

AXA IM RI product categories

SFDR product classification

In March 2021, the European Union's Sustainable Finance Disclosure Regulation (SFDR) came into force. The SFDR is designed to help institutional asset owners and retail clients understand, compare, and monitor the sustainability characteristics of financial products by standardizing sustainability disclosures. One of the ways in which it does this is by requiring asset managers to classify their financial products by reference to whether, among other things, they have a sustainable investment objective (known as an "Article 9" financial product) or promote environment or sustainable characteristics (known as an "Article 8" financial product).

When it was introduced the SFDR did not define "sustainable investment", the expected level of sustainable investments in Article 9 financial products nor how issuers in transition and sovereigns should be treated. Therefore, pending the regulatory technical standards (called SFDR Level II), it was up to individual asset managers to develop their own position on what constituted a sustainable investment. Based on our interpretation of the requirements of SFDR at the time, we classified 90% of AXA IM funds and strategies distributed and/or managed in the EU within traditional assets (Equities, Fixed Income and Multi-Asset) as falling into Articles 8 and 9 of the SFDR, the most demanding and stringent classifications of the EU regulatory disclosures for sustainable investment funds. Knowing the upcoming Level II standards could potentially impact the classification of our products, we informed investors that the SFDR classification of our funds and strategies was based on our interpretation of SFDR and may evolve over time to reflect regulatory guidance and/or market views.

On April 2, 2022, the European Commission adopted SFDR Level II applicable from January 1, 2023. Despite the publication of SFDR Level II, we continued to see heterogeneous rules and advice in the market as regulatory definitions of what could be considered as a "sustainable investment" under SFDR have not yet been fully clarified and continue to leave room for interpretation. However, the advent of SFDR Level II has led us to refine our methodology for classification in 2022, which led to the reclassification of some Article 9 products to Article 8. In connection with this reclassification we developed a communication and engagement plan to ensure that we were accurate and transparent in the information we provide to our regulators and our clients.

[34] "Autorité des Marchés Financiers", the French regulator, which issued its 2020-03 position-recommandation in March 2020 [Informations à fournir par les placements collectifs intégrant des approches extra-financières | AMF (amf-france.org)]

We continue to support the long-term objective of the European Union to enhance transparency in the area of sustainable investing and are actively involved in industry groups aiming to positively influence investors and ultimately to channel flows into sustainable assets to support the transition to a Paris-aligned world.

In our view, data availability and comparability will be the main enablers to build a consistent and transparent ESG framework for investors. More efforts are required on that front and AXA IM will continue to advocate and contribute to this ongoing effort.

In that context, we disclosed the **methodology used by AXA IM Core on traditional assets** to qualify an issuer as sustainable under SFDR for Article 9 financial products that invest 100% of eligible assets in sustainable investments (eligible assets exclude investments used for hedging or related to cash held as ancillary liquidity), and for Article 8 financial products that can invest partially in sustainable investments[35].

We continue to monitor market practices and regulatory / supervisory guidance, and as such our interpretation SFDR Levels 1 and 2 may evolve over time to reflect regulatory guidance and/or market views.

Implementation of SFDR Level II resulted in the following figures of eligible funds and strategies being classified as Article 8 or 9:

		As of 31/12/2022	
AXA IM business units	Net AuM managed by business units	Net AuM managed in scope of SFDR classification	Net AuM of SFDR Article 8 or 9 funds from in-scope assets[36]
AXA IM Core (traditional asset classes)	€482bn	€406bn	**€319bn**
AXA IM Alts (alternative asset classes)	€198bn	€109bn	**€19bn**

Source: AXA IM, December 2022.

SFDR categories for AXA IM Core

At end of 2022, **78% of AXA IM Core assets in scope of the SFDR (€319bn of AuM)** either promote environmental or social characteristics and/or demonstrate a sustainable objective and are therefore categorised as respectively Article 8 or Article 9, against 88% (€406bn of AuM) at end of 2021. The remaining 22% of AXA IM Core assets in scope of the SFDR are integrating and assessing sustainability risks without promoting environmental or social characteristics or having a sustainable investment objective.

SFDR categories for AXA IM Alts

[35] Sustainable Finance | AXA IM Corporate (axa-im.com)

[36] Non audited figures. The classification under SFDR may be subject to adjustments and amendments, since SFDR has come into force recently only and certain aspects of SFDR may be subject to new and/or different interpretations than those existing at the date of this press release. AXA IM reserves the right, in accordance with and within the limits of applicable regulations and of the Funds legal documentation, to amend the classification of the Funds from time to time to reflect changes in market practice, its own interpretations, SFDR-related laws or regulations or currently applicable delegated regulations, communications from national or European authorities or court decisions clarifying SFDR interpretations. Investors are reminded that they should not base their investment decisions on the information presented under SFDR only.

At end of 2022, **18% of AXA IM Alts assets in scope of the SFDR (€19.2bn of AuM)** either promote environmental or social characteristics and/or demonstrate a sustainable objective and are therefore categorised as Article 8 or 9 in 2022, against 13% in 2021 (€17bn of AuM). Due to the lack of or inconsistency of available data, most of Alts financial products are integrating and assessing sustainability risks without promoting environmental or social characteristics or having a sustainable investment objective.

AXA IM Alts' Articles 8 and Articles 9 funds focused on:

- For Real Estate and Infrastructure: **€18.7bn** of the business lines products promote environmental or social characteristics and are categorised as Article 8;
- For Alternative credit and Natural capital & Impact: **€0.5bn** of the financial products either promote environmental or social characteristics **and are categorised as Article 8** or are impact funds having a sustainable investment objective and are therefore categorised as Article 9.

As part of the application of the Article 29 LEC, assets managers are required to publish on their website the list of financial products Article 8 and Article 9 funds under the SFDR. This list is available below (see appendix 11) and on our website.

Sustainability-related labels

AXA IM supports the development of sustainability-related labels across European countries, managing as of end of December 2022 c. €33.7bn of assets under management awarded with at least one sustainability-related labels.

Sustainable finance labels emerged in the early 2000s, accelerating sharply after 2015 under the impetus of the Paris Agreement and are used as a tool to navigate within the responsible investment offer. The French Labels (ISR, Greenfin and Finansol) allows the national government to re-orient capital flows to the financing of sustainable, green and solidarity activities, under the auspice of the French Pacte Law[37] leading to a significant increase of the number of funds awarded with a sustainability label over the years.

Driven by local initiatives, sustainability-related labels have been created in other areas in Europe, including in Belgium (Label Towards Sustainability) and in German-speaking markets (FNG-Siegel), which have their own requirements specifications and objectives adapted to their markets. While labels participate to the evolution of the sustainable finance practices, its fragmentation in several regions combined with the specificities of each of them complexifies the navigation and the understanding of the sustainable investment offer for end-investors. As an asset manager distributing financial products in several countries and in an overall context characterized by the complexity and heterogeneity of reference frameworks and tools, we pay attention to clarity for end investor by supporting overall consistency and harmonization of frameworks and regulations.

Several funds managed by AXA IM have been awarded sustainability-related labels. They follow the requirements defined by each of the label rulebooks and are subject to an annual audit by external auditors. Transparency codes available on AXA IM Fund Center[38] provide more information on the processes in place for these funds.

[37] Article 29 - LOI n° 2019-1147 du 8 novembre 2019 relative à l'énergie et au climat (1) - Légifrance (legifrance.gouv.fr)
[38] Funds - AXA IM Global (axa-im.com)

Sustainable Labels	As of 31/12/2022 Number of labelled funds	Net AuM (M€) managed by Labelled funds	As of 31/12/2021 Number of labelled funds	Net AuM (M€) managed by Labelled funds	As of 31/12/2020 Number of labelled funds	Net AuM (M€) managed by Labelled funds
Label ISR[39]	70	29,869	53	30,078	36	13,598
Greenfin[40]	3	1,495	1	1,331	1	658
Towards Sustainability[41]	23	8,110	16	8,355	11	3,841
FNG[42]	0	n/a	1	1,102	1	852

Source: AXA IM, December 2022.

Sustainable & ACT family of funds

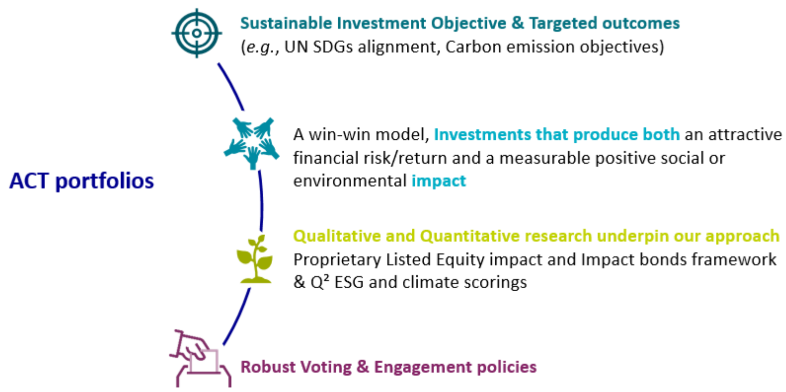
At end of 2022, **€41bn** of our AuM are part of our Sustainable & ACT (including Impact) fund ranges, within those funds, the part which is distributed in France is classified as "significantly engaging" by the French market authority (AMF)[43][44].

All these funds follow some ESG objectives by targeting one or more specific objectives related to the ESG pillars (*e.g.*, carbon footprint, biodiversity positive impact) to further refine the investment universe.

Among these funds, all our Impact funds (representing around **€4bn** from both listed and alternative asset classes at end of 2022) also target businesses and projects that can have an intentional, positive, measurable and sustainable impact on society and/or the environment and report against impact criteria aligned to specific UN SDGs (see below).

Focus on our ACT fund range

Our ACT fund range is designed to help clients target specific ESG goals around issues such as climate change and inequality while continuing to adopt the reinforced approach to sustainability risks and good governance practices as described above.



Source: AXA IM as of 01/12/2022, for illustration purpose only.

[39] Label ISR - Pour des placements durables et responsables (lelabelisr.fr)
[40] Le label Greenfin | Ministères Écologie Énergie Territoires (ecologie.gouv.fr)
[41] Towards Sustainability Initiative | Towards Sustainability
[42] Application – FNG-Siegel
[43] When in scope of the AMF Doctrine 2020-03, those funds belong to the category "significantly engaging".
[44] The Sustainable & ACT family of funds may not invest all their assets into sustainable assets as per article 2(17) of the SFDR Regulation. The percentage of sustainable investment of our funds are set-out in the legal documentation of the funds.

Our fund range with various approaches and for various asset classes as follows:

	Planet	People	People & Planet
EQUITIES	Clean Economy Carbon offset Biodiversity Plastic & Waste Transition	Social progress Human Capital	Eurozone Impact
FIXED INCOME	Green Bonds Low Carbon Carbon Transition	Social Bonds	
MULTI ASSET			Multi Asset Impact

Source: AXA IM as of 01/12/2022, for illustration purpose only.

Strategy[45]	Underlying investment theme	Labels (at end of 2022)	Related SDGs[46]
Clean Economy (Equity)	Diversified access to **multi-decade growth opportunities** arising from the energy transition, reduction of GHG emission and resource optimization across four key areas: **Low Carbon Transport, Smart Energy, Agriculture & Food Industry and Natural Resource Preservation**.		7, 11, 12
Carbon offset (Equity)	A **low volatility, high quality** portfolio with **lower carbon footprint** and significant exposure to companies that **support the transition to a low carbon economy through their products and services**. **Carbon Offset** contracts compensate for the portfolio's remaining emissions, while supporting **projects which integrate conservation and sustainable economic development**.		7, 13, 15
Biodiversity (Equity)	Diversified access to **multi-decade growth opportunities** in companies that are preserving life on land, water and air through sustainable alternative products and services which are protecting and supporting ecosystem preservation across four key areas: **Sustainable Materials, Land & Animal Preservation, Water Ecosystems and Recycling & Recirculation.**	n/a	6, 12, 15

[45] The products above may not be registered nor available in your country.
[46] AXA IM supports the Sustainable Development Goals. The targeting of specific SDG does not imply the endorsement of the United Nations of AXA Investment Managers, its products or services, or of its planned activities and does not constitute, explicitly or implicitly, a recommendation for an investment strategy.

Plastic & Waste Transition (Equity)	Diversified access to **multi-decade growth opportunities** in companies that are reducing plastic and waste either through their operational behaviors or the products they offer.	n/a	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Green Bonds (Fixed Income)	Aiming to deliver investment returns with **low volatility**, while supporting the transition to a low-carbon economy. Only invests in green bond projects which provide a material benefit to the environment across four key areas: **Smart Energy, Green Buildings, Low Carbon Transportation and Sustainable Ecosystems**	GREENFIN LABEL FRANCE FINANCE VERTE; TOWARDS SUSTAINABILITY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 11 SUSTAINABLE CITIES AND COMMUNITIES; 13 CLIMATE ACTION
Low carbon (Fixed Income)	Excluding the most carbon-intensive sectors: metals, mining and steel producers and most sub-sectors within the energy and utility sectors Aiming for at least a 30% reduction in carbon intensity and water intensity[47] Applying a decarbonization trajectory	n/a	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 11 SUSTAINABLE CITIES AND COMMUNITIES; 13 CLIMATE ACTION
Carbon transition (Fixed Income)	Aiming to keep its weighted average carbon intensity (WACI) lower than the fund manager's carbon emissions benchmark while maintaining a low turnover of bonds held by the fund. The benchmark is calculated **initially** as a **30% reduction of the WACI** of the Index. Thereafter, the benchmark will be calculated as a **further 7% reduction** of the WACI per year, based on the WACI of the benchmark from the previous year	n/a	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 11 SUSTAINABLE CITIES AND COMMUNITIES; 13 CLIMATE ACTION
Social progress (Equity)	Leveraging AXA IM proprietary impact framework, the strategy addresses a range of **social needs** from **the most basic to more advanced** that **sustain human progress** across 4 areas: **Inclusion, Health, Protection, Elevation**	Label ISR; TOWARDS SUSTAINABILITY	3 GOOD HEALTH AND WELL-BEING; 8 DECENT WORK AND ECONOMIC GROWTH; 11 SUSTAINABLE CITIES AND COMMUNITIES
Human Capital (Equity)	**Leveraging our** proprietary impact framework, the strategy focuses on **working conditions, career development** and the **social dialogue of companies**, which we believe will translate into high productivity and financial returns	Label ISR; TOWARDS SUSTAINABILITY	1 NO POVERTY; 4 QUALITY EDUCATION; 8 DECENT WORK AND ECONOMIC GROWTH
Social Bonds (Fixed Income)	Aiming to support sustainable activities and deliver positive social impact by targeting **Employment, Health and Basic Needs**. A global and diversified solution that invests at least 75% in social and sustainability bonds and provide a material benefit to the social areas**: Health & Safety, Empowerment and Inclusion**	Label ISR; TOWARDS SUSTAINABILITY	1 NO POVERTY; 3 GOOD HEALTH AND WELL-BEING; 8 DECENT WORK AND ECONOMIC GROWTH

[47] For corporate assets, the water intensity is provided by S&P Trucost and represents water consumption, i.e., the amount (in cubic meters) of water diverted for use by the organization from all sources, including but not limited to surface, ground, saltwater, and municipal. Includes cooling water. For sovereign assets, the metric is provided by the World Bank and represents water stress, i.e., a ratio between total freshwater withdrawn by all major sectors (i.e., agriculture; forestry and fishing, manufacturing, electricity industry, and services) and total renewable freshwater resources, after taking into account environmental water requirements. The metric is calculated for each asset type bucket (corporates or sovereigns) as a weighted average on those assets.

Eurozone Impact (Multi Asset)	Aiming to **leverage on the leadership of this region on sustainability** to invest in companies answering environmental and social issues such as clean energy, resource usage and basic social needs in areas such as inclusion, healthcare, and safety		
Multi Asset Impact (Multi Asset)	Aiming to generate simultaneously financial returns with a positive and measurable impact, focusing on the environment – especially **energy transition** – as well as social themes – especially **healthcare & Inclusion**		

Focus on Impact investing in private markets

AXA IM has a long history in investing for impact in private markets, with a first fund launched in 2013. These are investment strategies that aim to generate objectively measurable and intentional environmental and social impacts alongside financial returns, both integrated into investment management incentives. These strategies continued to gain momentum in 2020.

Our first strategy, with €200M of AuM, focused on Financial Inclusion, Access to Healthcare and Education. In 2016, our clients allocated €150M to a new fund, to invest in both environmental and social impact generation.

In 2019, we launched our third impact investing strategy focusing on Climate & Biodiversity, with AUM of $175M, seeking solutions to climate change and loss of biodiversity (see below). In 2020 and our clients committed an additional $175M to the Climate & Biodiversity strategy and $103M to a fund promoting financial inclusion and access to healthcare for underserved beneficiaries in Low-and-Middle Income countries.

- ### Healthcare strategy

In 2022, we launched a Global Health strategy[48], which has a mission to ensure healthy lives, promote well-being and address inequalities in access to quality healthcare. The strategy will contribute tangibly to SDG 3 Goals and Targets by increasing the availability of innovative products and services targeting global disease burdens; and delivering solutions at accessible price points by addressing high volume, mass markets, serving the healthcare needs of the many and not the few.

The strategy will achieve its objective by investing in companies focusing on clinical development or early commercialization of: Medical Devices, Biopharmaceuticals, Vaccines, and Diagnostics delivering intentional, measurable, and positive health outcomes relative to the strategy's priority healthcare pillars: Women, Maternal & Child; Vision; Infectious diseases; Diabetes/Obesity; and other health conditions with prevalence in high volume markets.

Our strategy demonstrates the tangible role clients are playing in the achievement of the UN Sustainable Development Goals (SDGs) through the allocation of much needed capital to underserved

[48] AXA IM Alts launches $500 million private equity healthcare strategy alongside two senior appointments - AXA IM - Real Assets (axa-im.com)

social and environmental challenges. Our preliminary review of our impact strategy SDG alignment yielded positive results, demonstrating that our clients are providing capital to businesses that directly address the SDGs highlighted below.

As of December 31st, 2022, this strategy represents approximately €300M commitments from both AXA Group and third-party clients and is under commercialization phase

- Natural Capital strategy

The Natural Capital strategy (first through Climate and Biodiversity fund) was developed in response to increasing concerns about climate change, its impact on nature and the increasing and resulting loss of biodiversity.

In 2022, we launched a dedicated Natural Capital strategy, which has a mission to not only protect biodiversity but also address the climate crisis by focusing on avoidance and removal of CO_2. This urgency and plan for action through Nature-Based Solutions was echoed by the leaders from the Glasgow COP26:

"We, the leaders of the countries identified below, emphasise the critical and interdependent roles of forests of all types, biodiversity and sustainable land use in enabling the world to meet its sustainable development goals; to help achieve a balance between anthropogenic greenhouse gas emissions and removal by sinks; to adapt to climate change and to maintain other ecosystem services"

Emissions from deforestation and land degradation are cumulatively responsible for around 20% of GHG emissions. Beyond the critical contribution to climate mitigation and adaption, forests play a fundamental role in water provision, biodiversity conservation and community livelihood.

Developing a solution to these challenges requires an intentional approach to allocating capital to companies and projects that conserve, protect, and restore natural capital - forests, preserving nature's ability to act as a natural climate solution, and high value habitats necessary for conservation and biodiversity. Our investments have tackled these challenges by

- Financing the direct protection of primary natural capital - *e.g.*, forested land, peatland etc, mangroves;
- Implementing sustainable land use programmes which alleviate incursion into protected primary natural capital and providing enhanced livelihood for stakeholder communities *e.g.*, smallholder farmers;
- Contributing to climate change mitigation, evidenced by the issuance of verified emissions reductions credits and other ecosystems service credits. These credits provide a sustainable means for landowners to monetise the environmental benefits provided by their forests while preserving the significant environmental, biodiversity and social outcomes provided by standing forests.

We have translated our mission into real world activities that lead to the conservation of natural capital, protection of critical habitats, and climate mitigation globally. These include:

- Reforestation of degraded lands in Kenya, providing climate mitigation benefits and improved income resilience for smallholder farmers;
- Protecting and restoring degraded peatland in Indonesia, preventing the release of CO_2 stored in peatland;
- Conserving family-owned forests in the United States;

- Preventing the deforestation of Forest Protected Areas in Guatemala, protecting the MesoAmerican biodiversity corridor;
- Promoting sustainable agroforestry practices in Madagascar, thereby protecting the rich and unique biodiversity of Madagascar including four lemur species listed on the IUCN Red list of Threatened Species;
- 69,000 hectares of Land under Sustainable Management; 55,000 hectares of Critical Habitats protected globally.

Our strategy with its intentional focus on natural capital is contributing to the significant environmental, biodiversity and social outcomes provided by nature.

The Natural Capital strategy is making good on its promise to fund credible, investable solutions that deliver positive outcomes. To date the strategy has made a number of investments that align with its mission. Examples of our investments include:

Investments	Activity description	Expected Impact/ Illustrated Investments
Forest Carbon Indonesia	Project developer specialized in the conservation and restoration of degraded tropical forests, peatland and wetland ecosystems in Indonesia, Malaysia and Cambodia. The company has operated for more than ten years with its most notable project to date being the Sumatra Merang Peatland Project in Indonesia. This project led to the restoration of over 22,000 hectares of peatland forest, the delivery of close to 7M tons of CO_2 emissions reduction (as evidenced by the generation and sale of verified voluntary carbon credits), and the strengthening and conservation of over 20 species.	Impact targets: • 74,000 hectares of peatland, mangrove and tropical forests conserved/restored • 26M tonnes of GHG emissions reductions • 22M verified carbon credits generated and • A minimum of 10 IUCN Red List endangered species protected, including the Bornean Orangutan, Proboscis Monkey, Sumatran Tiger, and the Irrawaddy Dolphin
Sanergy	Sanergy was founded in 2011 with the objective of improving waste management systems in Kenya, Sanergy adopts a circular economy approach, collecting and transforming sanitation and organic waste and into sustainable, environmentally aligned products such as insect protein for animal feed, organic fertilizer, and biomass briquettes	Impact targets: • 1.2M tons of waste processed • 50,000 tons of bio-fertilizer produced
Madecasse	Madecasse is a cocoa bean-to-bar chocolate company working with smallholder farmers primarily in Madagascar to implement sustainable agroforestry practices that enables the conservation of habitats to support Madagascar's unique biodiversity, where 85% of the country's plant and animal species are found nowhere in the world. The company	Impact targets: • 528 hectares of critical habitats for biodiversity conserved
Fundaeco	Fundaeco's operations focus on the creation, management and conservation of Forest Protected Areas in Guatemala. These Protected Areas are of significant global ecological importance, acting as habitats for critical species and providing a natural carbon sequestration solution, evidenced by the issuance of verified carbon credits.	Impact targets: • 60,500 hectares of land under sustainable management • 4.6M tonnes of carbon emissions avoided • 4.1M verified carbon credits generated

Sistema Bio	Sistema works with small-holder farmers in Latin America, India and East Africa to tackle methane emissions from waste within their operations. Sistema's biodigesters provide a sustainable solution to the treatment of organic waste, sequester methane from manure that would otherwise be emitted into the atmosphere; and the resulting biogas and biofertilizers provides low-carbon alternative to fossil-fuel derived products for the farmers.	Impact targets • 5M tonnes of waste treated • 200M cubic metres of biogas produced • 16M tonnes of biofertilizer produced • 1.8M tonnes of carbon emissions avoided

As of December 31st, 2022, this strategy represented €150M commitments from AXA Group, with a firm agreement to reach €500M by 2024.

- ### Our impact performance framework

Our impact management and measurement framework covers initial assessment, evaluation, due diligence, investment, monitoring and exit. The objective is to ensure that the generation of impact is intentional, focused, and a key driver for investment decisions and managing investments over the investment period.

The table below shows the contributions of our platform to key environmental and social challenges aligned with the mission of our strategies:

Theme	Deal type	Geographic focus	KPI
Climate and Biodiversity	Equity shares, project financing, primary funds	Global	- Avoided emissions (tCO_2e) - Land under sustainable management (hectares) - Critical habitats protected (hectares) - Avoided waste (tonnes)
Financial Inclusion	Equity shares	Global	- Lives Improved - Lives Saved - Lives Empowered - Product Reach (#LMICs)
Quality Healthcare	Equity shares	Global*	- Number of lives improved - Number of lives saved - Product reach (# countries reached)

AXA IM is also a founding signatory to the Operating Principles for Impact Management (Impact Principles). AXA IM publishes an annual Disclosure Statement affirming the alignment of the impact measurement and management system of AXA IM Alts Impact Investing Strategy with the Impact Principles. An independent verification of our impact management systems was conducted by EY Associes in 2020 and confirmed to be aligned with the principles.

Focus on AXA IM Impact Philanthropy Mechanism

Starting 2020, to further deliver a positive impact on society in the long-term, AXA IM implements an innovative philanthropic mechanism for its impact fund range, across listed and private markets.

5% of this range's management fees are now used to fund additional projects aimed at developing solutions with a societal impact. These projects are focused on the themes which are at the heart of AXA IM's Corporate Responsibility and Responsible Investment strategies, and aligned with selected UN SDGs, such as:

- SDG 3 – Good Health and Well-Being
- SDG 4 – Quality Education
- SDG 13 – Climate Action
- SDG 15 – Life on Land

Partnerships with four charities have been put in place thanks to the mechanism:

Charity	Missions	SDGs[49]
EPIC	Epic aims at supporting the development of a world in which every child and youth has access to safety, empowerment and equal opportunity. To do so, it finds, selects, backs and monitors high impact organizations in order to catalyze their impact on underserved children and youth and the systems affecting their lives. It relies on a thorough and cutting-edge sourcing, vetting and monitoring process, bringing trust, transparency and accountability.	4 QUALITY EDUCATION
World Land Trust	World Land Trust is an international conservation charity that protects the world's most biologically significant and threatened habitats. Through a network of partner organisations around the world, WLT funds the creation of reserves and provides permanent protection for habitats and wildlife. Partnerships are developed with established and highly respected local organisations who engage support and commitment among the local community. In 2019, WLT supported the restoration and conservation of 38,000 acres, across 22 countries and 82 reserves, also planting 39,000 trees.	13 CLIMATE ACTION 15 LIFE ON LAND
Ligue pour la Protection des Oiseaux	LPO is one of the oldest nature conservation association in France and is affiliated with the BirdLife International network, LPO implements national restoration projects for some of France's most threatened birds, coordinates European	15 LIFE ON LAND

[49] Disclaimer: The targeting of specific SDG does not imply the endorsement of the United Nations of AXA Investment Managers, its products or services, or of its planned activities and does not constitute, explicitly or implicitly, a recommendation for an investment strategy.

	species conservation programmes and manages the reintroduction of endangered birds. LPO manages over 24,000 hectares of natural capital spread over 27 nature reserves in France.	
Doctors with Africa	Doctors with Africa CUAMM cooperates with local hospitals, health centres, villages and universities, to improve the health conditions of the most vulnerable communities of Sub-Saharan Africa. The organization designs and implements healthcare cooperation projects, also carrying out capacity-building activities and conducting and disseminating scientific research.	3 GOOD HEALTH
Access to Medicine Foundation	The Access to Medicine Foundation is an independent non-profit organisation based in the Netherlands, seeking to transform the healthcare ecosystem by motivating and mobilising companies to expand access to their essential healthcare products in low- and middle-income countries. Their approach involves defining the actions that healthcare companies should take, analysing what companies are actually doing, and promoting best practices across the private and public sectors.	3 GOOD HEALTH

Real estate direct property certification schemes

GRESB

GRESB is an organisation committed to assessing the ESG performance of real estate portfolios (public, private and direct) around the world. Its objective is to provide a dynamic benchmark to help institutional investors engage in their investments and improve the ESG performance of their investment portfolio. Entities are given a GRESB score that measures their ESG performance in absolute terms, along with a GRESB Rating that ranks them among their peers. Participants also receive a summary analysis of performance, showing strengths and weaknesses across categories such as leadership, policies, risk management, health and safety, greenhouse gas emissions, building certifications and stakeholder engagement.

AXA IM Alts has been participating the Global Real Estate Sustainability Benchmark (GRESB) since 2011 and has been taking an active role on the GRESB Benchmark Committee. In 2022, we submitted larger than average scope of assets to GRESB ($33.6bn of AUM in total against $3.3bn average for our peer group), across 19 funds, within diversified sectors.

We have reached our company target to obtain the 4-star status, with an average score of 82/100 (+6 points compared to 2021, +13pts compared to 2020) which reflects our leading ESG position. 14/15 of our funds (participating for at least 2 years) improved their GRESB score, of which 6 have increase by more than 10 points. These results demonstrate our ability to integrate ESG at scale within our Real Estate portfolios.

Other real estate certifications

AXA IM launched a large-scale certification programme, which aims at first assessing potential to certify in priority high performing assets and deploy relevant action plans to achieve high certification level on others.

Certification brings significant advantages to stakeholders in an asset. We believe that over time, investors will increasingly favour buildings with strong sustainability performance. Certification is an important indicator of long-term performance and is becoming a market standard. It can also be beneficial to tenants, who tend to benefit from lower occupational costs and better building comfort. Finally, the process of certification offers positive benefits, as it brings together all stakeholders in an asset, raising awareness of sustainability issues and opportunities.

Asset management teams in local countries select the most relevant certifications for their country and type of asset. A large proportion of our certifications are issued by BREEAM. We also use LEED, and respected local certifications such as HQE in France and Minergie in Switzerland, which are the industry standard in their home countries. Issue-specific or local certifications make up the remainder of our certifications.

In 2022, we submitted a large part of our buildings and developments to voluntary green certifications such as ENERGY STAR, LEED, BREEAM and HQE. As of end of 2022, 67% of our real estate AuM in scope was certified, with an additional €3.5bn of AuM certified compared to 2021. We have a roadmap in place to achieve milestones in each country, with a final target of certifying 75% of our total AuM by 2030.

1.4 Our ESG disclosure communication

We believe it is vital to communicate with clients in the most transparent and comprehensive way possible for those assets which integrate ESG considerations, to give them a complete analysis of our RI framework and help them understand it, and its importance. All the main financial and non-financial information on every fund that has integrated ESG criteria into its investment process is available on our Fund Centre. This is in accordance with European and local regulations.

As described in detail below, we publish RI-related reports at entity and fund levels, for those products which integrate ESG considerations on a substantial and significant manner (*i.e.*, classified as "significantly engaging" by the AMF).

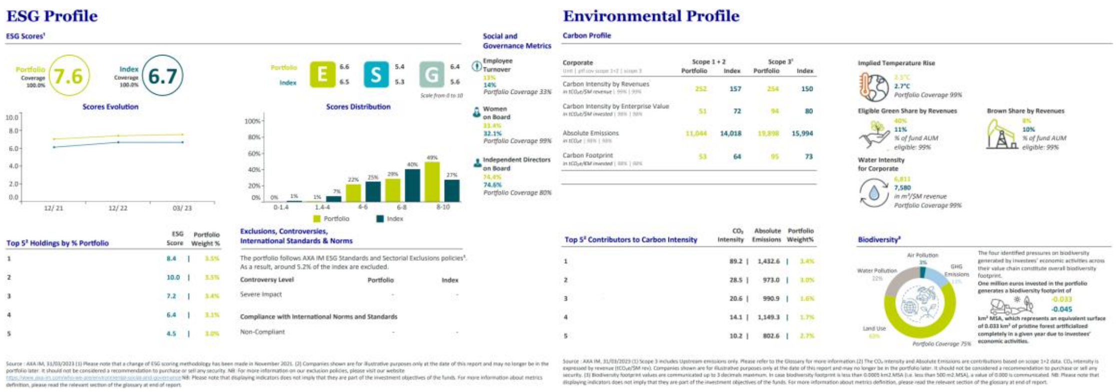
We have noted over recent years a growing interest from our clients for a more comprehensive and enriched ESG reporting offer.

In 2022, an industrialized ESG Report solution designed on Tableau has been developed by our IT Teams in collaboration with RI and Reporting teams, which was made possible through the development of a data platform by our IT teams to store RI and other financial data. In 2022, we started to roll out this new and upgraded ESG report across some of our Sustainable and ACT portfolios which include a range of new metrics, with a particular focus on biodiversity as well as climate and carbon in line with recommendations from the TCFD, but which also include voting and engagement metrics and dedicated page for Label ISR KPIs. This complements our existing Engagement and Voting reports which, in 2022, were re-designed and their production automated following the integration of the engagement and voting data in our data platform.

ESG Report: Environmental profile

Partnering with S&P Trucost, AXA IM discloses the carbon intensity of portfolios in the climate section of the ESG reporting of its RI funds, and in the standard reporting of all portfolios along with the ESG score. Carbon intensity of portfolio relative to benchmark is analysed by distinguishing between a sector allocation effect and an issuer selection effect. Carbon intensities are performed focusing on both direct emissions (Scope 1), emissions from electricity suppliers (Scope 2) and from business travel (Scope 3).

From 2022, the ESG reporting available for funds which integrate ESG considerations classified as “significantly engaging” by the AMF include an enhanced climate section, combining historic metrics (carbon intensity for Scope 1 and 2 as well as upstream Scope 3) as well as forward-looking ones (incl. Implied Temperature Rise and proportion of companies with Science-Based Targets validated or committed in the portfolio).



AXA IM ESG Impact reporting: ESG Profile and Environmental Profile sections. Source: AXA IM, 2021.

AXA IM is now able to provide a full package of RI reports made up of an ESG report, dedicated engagement report and voting report, in French and English, available on the Fund Center for its range of Sustainable and ACT funds[50].

In 2023, AXA IM has the ambition to continuously improve its reporting offer alongside data availability is increasing to meet market best practices and answer clients’ needs. We focus our efforts on enhancing the dedicated page on Climate-related key performance indicators as well as the engagement report to provide more qualitative information and increase our level of transparency, relying on the expertise of our IT and Reporting teams.

Client interactions, inputs and expectations

As an active manager, we continuously engage with our clients to understand their needs and understand how we can help them to make informed investment decisions and invest in a sustainable

[50] For traditional asset classes.

future. We are committed to answering their questions whether this is about market movements, regulatory changes, asset allocation or future trends. We do this via surveys as well as conversations at our own proprietary or industry events, and regular interactions with our sales teams. This enables us to improve our product offering as well as ensure that we have the right content and communications in place to stay relevant to clients' changing needs and to answer the questions on top of their minds.

We are focused on empowering our clients across the institutional, wholesale and retail segments to be able to confidently invest for a better planet, society and sustainable economy. In this context, providing clients with relevant and timely information is key. We do this by creating thought leadership, market commentary and educational content across multiple formats, such as research papers and articles, webinars, events, videos, and infographics to provide clients access to our investment experts, and at the level of detail they require. This content is then shared through a variety of channels, such as our website, email, social media, and third-party websites for clients to access.

Our RI experts regularly interact with our institutional clients through joint meetings with our investment teams when specific insights are required. Furthermore, our clients regularly send us due diligence questionnaires through which we can identify new trends and requirements.

At AXA IM we aim to be very attentive to market and client needs, best practices and new expectations and these interactions are one of the ways through which we can identify our areas of potential improvements.

Company-level disclosure

The following content is available on our website:

- Annual Stewardship Report;
- Annual Climate Report (aligned with the TCFD recommendation and Article 29 of the French Energy Climate Law);
- Annual Principles for Responsible Investment (PRI) report;
- Policies;
- SFDR-related disclosures.

Going into more detail about our stewardship reports, we are committed to provide transparency and regular reporting on active ownership and engagement, both internally and externally.

AXA IM's RI activities are published and available publicly. Our full voting records are accessible publicly and detail how we voted at general meetings of companies held on our clients' behalf. In addition, we publish an annual Stewardship report which includes information on RI issues, engagement with companies, aggregated voting records and details on our policy advocacy approach for the relevant year.

We also provide bespoke and customised reports aligned with specific client requests – the decision whether to make the report public or private is made by the clients. This includes a statistical overview and analysis of engagements conducted including breakdowns by theme and by the UN SDGs. There is also information on progress made through engagement and details of where we consider success has been achieved. We also provide a list of all issuers engaged with and on which specific themes.

Fund-level disclosure

We have mentioned broader fund content above. For some financial products including Sustainable and ACT funds in the AXA IM range, the following content is made available to clients on our Fund Centre:

- Transparency code (only for funds awarded with a Sustainable Label);
- Voting Report (for equity and multi asset funds only) – with the AGMs voted and rationales for any vote against the management;
- ESG Report (when relevant);
- Impact Report for our range of Listed Impact funds;
- Engagement Report;
- Legal documentation;
  - Prospectus or offering memorandum;
  - Key Information Document;
  - Annual reports and semi-annual reports (including funds' inventories);
- Monthly comments from the portfolio manager.

1.5 Our Corporate Responsibility strategy

At AXA IM our purpose, to "act for human progress by investing for what matters", is central to every action we take as an investor - but equally as an organisation and employer. As an organisation, we believe we have a powerful role to play in finding solutions for the most pressing current and future societal challenges. Just as we are an active player in responsible investment, we equally recognise our role as a business and employer to hold ourselves to the same high standards that we ask of others. Our framework is aligned with the United Nations' Sustainable Development Goals (UN SDGs) and based on the same ESG framework that we adopt as an investor.

Environment

As a leading responsible asset manager, we recognise our role in driving the transition to a low-carbon economy, as both an investor and organisation. As an organisation, we have committed to become net zero by 2050 at the very latest. To achieve this, we are working on a programme to measure and reduce our footprint across all key emissions, with an initial milestone of 26% reduction by 2025 compared to 2019.

In 2023, we are continuing efforts towards our "Measure – Reduce – Offset" strategy.

To provide transparency and accountability on our net zero journey, we now measure our global footprint annually across all offices worldwide and across Scopes 1, 2, and crucially 3 (excluding investments) – and communicate annually on our progress. This measurement study is managed and verified by ClimateSeed, to ensure the accuracy and integrity of data. With our footprint calculated at a global and country level, we worked with each of our country management teams, to build a CO_2 reduction roadmap per region – setting goals that are fair but ambitious across key emissions of energy, water, waste, paper, car fleet, and business travel.

Incorporating Scope 3 emissions into our reduction targets

We have been measuring Scopes 1 & 2, and business travel as a business for almost ten years now. However, we decided to account for the emissions incurred across our entire value chain, known as Scope 3 emissions. We can also see that the shift in working patterns post-pandemic requires us to account for an increasing number of hybrid or digital only activities and events, many of which take place outside the scope of our own office emissions measurement. Since 2021, we have therefore included into our measurement study all Scope 3 emissions beyond business travel – including our supply chain, home working, digital tools, client and corporate events and our own office refurbishment programmes.

Our Scope 3 emissions also include the footprint generated by the activities of AXA IM providers and suppliers. We now measure this footprint and will continue to find ways to encourage all those who work with us to manage their own operations for us as sustainably as possible. Indeed, supply chains are the biggest source of carbon emissions at AXA IM (around 75% of our global carbon footprint)—and are central to the achievement of our targets and to the battle against climate change. Therefore, supply chain sustainability is an essential step in getting to net zero. One of the key actions to achieve supply chain sustainability will be to engage with our most material suppliers and service providers regarding their net zero roadmap, to ensure that we can influence change across our value chain. By doing so, AXA IM expects to boost its climate impact, enable emission reduction in hard-to-abate sectors, and accelerate climate action in companies where it would otherwise not be high on the agenda.

Business Travel

While face-to-face client meetings are essential, we recognise the need to optimise business travel, which is a high generator of emissions at AXA IM. In 2022, AXA IM decided to go further than targets set by Group (25% by 2025), and therefore committed to achieve a 40% reduction in travel per FTE by 2025, vs a baseline of 2019. In context, our footprint on travel was far lower in 2020 and 2021 due specifically to the pandemic, but we are keen to leverage the subsequent evolution in our digital tools and increased home working, to prioritise critical travel only and see if we can reduce further on our initial target.

That's why our internal travel policy has been adapted to ensure that travel is considered only where necessary and undertaken in the most sustainable way. It means for example taking trains only for journeys of less than 3 hours and reducing long haul business travel, leveraging instead digital solutions to replace some of the face-to-face meetings.

Office emissions

As part of the ongoing management of our environmental impact, we continually seek further ways to implement recycling and energy saving schemes across our offices, in order to achieve a reduction in energy, paper consumption, waste and water.

We have set out a series of targets to reduce our carbon emissions in three areas, including energy, car fleet and business travel, and to reduce our use of natural resources through our consumption of paper, water and the waste and rubbish we generate. These are to be achieved by 2025 vs. a 2019 baseline. Of course, we track progress on these targets annually.

In parallel to our efforts to reduce our impact, we want to lead the transition to more renewable energy. AXA IM's commitment for an increased proportion of renewable energy supplied in offices form part of wider efforts to ensure we meet our ambition to reach net zero emissions by 2050 or sooner. Our main European offices (Paris, London, Frankfurt) are already supplied by 100% renewable energy. AXA IM is aligned with RE100, which brings together influential businesses committed to renewable energy and we are currently 100% renewable energy across our three largest offices. We are now exploring with AXA Group how we can achieve 100% renewable energy in all our offices by 2025.

We have also developed some new standards for implementation, to ensure that we act in the most sustainable way:

- First, we have created a guide to run sustainable events, the Sustainable Events Standard, which promotes for example the reuse of branding materials in our different events or the reduction of event-related travel. In addition, the standard proposes vegetarian menus first and ask that locally sourced ingredients are used by our providers. When meat is served, we will systematically exclude red meat from our catering;
- Then there is the Corporate Gifts Standard, which includes ending the distribution of corporate gifts in order to reduce the CO_2 from the manufacture, distribution, and end-of-life processes of these gifts that are often unwanted. Instead, money will be donated to charity.

Offsetting only as a final step in our roadmap

We are realistic enough to know that even with strong reduction targets in place, we will not be able to run our business without generating some carbon emissions. We do not consider carbon offsetting a solution – it is a tool to support us while we work towards our net zero goal. We used ClimateSeed to calculate our global emissions and organise our offsets using nature-based solutions. In 2021 we bought carbon credits to offset our carbon footprint in the areas that we are responsible for but cannot yet avoid. The first of these carbon credits helped to fund the Conservation Coast project in the Guatemalan Caribbean. This project protects forests which are a critical migratory corridor for biodiversity, including hundreds of bird species that travel between North and South America.

Key to reaching net zero by 2050 is employee awareness of the climate and the impact we collectively have on the planet. Recognising this, one of the objectives of our parent AXA Group is to train 100% of our employees on climate by 2023 – already achieved – through the launch of the AXA Climate Academy, which AXA IM is fully aligned with.

2022 GHG Inventory for AXA IM – GHG Protocol format

Following AXA IM's commitment to reduce carbon emissions in three areas including energy, car fleet and business travel, and to reduce our consumption of paper, water, and waste we generate, we are disclosing our carbon footprint for AXA IM in all offices for the year 2022. This GHG inventory was prepared using the GHG Protocol Corporate Standard, the most widely used international accounting tool to understand, quantify and manage GHG emissions.

For 2022, ClimateSeed calculated AXA IM offices emissions to be 32,937 tCO2e, considering a location-based approach. Considering a market-based approach, total emissions amount to 32,406 tCO2e. According to the GHG Protocol, there are two methods for reporting a carbon footprint: the location-based and the market-based approach. The location-based method calculates Scope 2 emissions based on the emissions intensity of the local grid area where electricity usage occurs, while a market-based method calculates Scope 2 emissions based on electricity that companies have purchased through instruments like Renewable Energy Certificates (RECs) for example.

For greater transparency and consistency, we chose to report emissions in both methods (dual reporting) as it provides disclosure in a way that allows all stakeholders to be satisfied.

On another note, it is to be noted that some sub-categories of emissions are excluded from this GHG inventory as they are not relevant to AXA IM. Indeed, some of the sub-categories relate to specific activities or sources of emissions that are not typically part of the operations of financial services companies like AXA IM. For example, category 3-12 covers emissions from the waste disposal and treatment of products sold by a company. AXA IM, being primarily service-oriented, does not have direct involvement in such activities.

Category of emissions	Sub-category	Emission sources	Total GHG emissions (tCO_2e)
Scope 1	1-1	Direct emissions from stationary combustion sources	105
	1-2	Direct emissions from mobile sources with combustion engine	499
	1-4	Direct fugitive emissions	126
Scope 2	2-1 (location-based)	Indirect emissions from electricity consumption	818
	2-1 (market-based)	Indirect emissions from electricity consumption	378
	2-2	Indirect emissions from steam, heat, or cooling consumption	221
Scope 3	3-1	Purchased goods or services	24,843
	3-2	Capital goods	427
	3-3 (location-based)	Emissions related to fuels and energy (not included in scope 1 and scope 2)	407
	3-3 (market-based)	Emissions related to fuels and energy (not included in scope 1 and scope 2)	317
	3-5	Waste generated in operations	93
	3-6	Business travel	4,192
	3-7	Employees commuting	1,205
TOTAL (location-based approach)			**32,937**
TOTAL (market-based approach)			**32,406**

Source: AXA IM, ClimateSeed, 2023.

Social

Our people are our most valuable assets. We thrive to nurture the progress of our employees by developing a work environment in which they can realise their potential to drive progress and bring our purpose to life every day.

Empowerment and inclusion are central to the culture we want to create at AXA IM

We want to provide our talented employees with the opportunity they need to grow their potential, shape the way they work through flexibility/hybrid working and thrive within a diverse community where differing ideas, backgrounds and viewpoints are encouraged. We actively listen to our employees, to understand how they feel about the work that we do and their role in driving our organisational purpose. We conduct two to three engagement surveys per year, in which we measure the ENPS (Employee Net Promoter Score) and have seen a year-on-year score increase since 2017. We support a culture of open feedback on topics such as gender, disability and ethnicity and conducted our first 'Inclusion Survey' in 2021.

On Diversity, equity & inclusion (DEI) topics, we also use our voice as a leading asset manager, to push for progress on key topics, such as gender equality, disability, LGBT, to name a few. On gender, we publish our own pay gap reports annually in France and the UK and we are members of the 30% Club Investor Groups in France and the UK, which look to increase the representation of women in executive management. We have also signed the Women in Finance charter and are EDGE (Economic Dividends for Gender Equality) certified. We have also begun the process of Edge re-certification in 2022, in recognition of our global commitment to gender equality in the workplace.

AXA IM is committed to supporting gender equality at all levels, including in management teams and among those making investment decisions. As of June 2022, the percentage of women in our Management Board is 33%. In line with the Rixain Law, we have committed to improving the representation of women among those making investment decisions from 20% to 25% by 2030.

Protecting the rights of all those who work with us

We are committed to disclosure as required through regulation, in all geographies in which we operate. This includes the Modern Slavery Act (UK) and any others pertaining to DEI or human rights.

Our role to support and protect those who work alongside us also extends to our supply chain. We have a procurement process in place to ensure that our partners and suppliers act with similar integrity, responsibility and sustainability principles towards their own employees and suppliers, as we expect of our ourselves as a business.

Extending our purpose into our communities

Just as we are committed to 'invest for what matters' for our clients and employees, this equally extends to our local communities – supporting them to similarly grow and prosper alongside us. We focus on projects with a tangible societal impact, across climate change/biodiversity, education and health.

AXA IM donates 5% of the fees from some of our Impact Funds to a number of organisations that are aligned to our corporate priorities. Within these charities, we are supporting several UN Sustainable Development Goals.

Our volunteer community 'AXA Hearts in Action' also enables our employees to dedicate their time and expertise to local charities focused on supporting climate-related and other projects with a positive societal impact. Our calendar of activity runs all year but culminates with a week (AXA Week for Good) for our employees, which is dedicated to increasing awareness, engagement and involvement in climate change and biodiversity related activities.

We are also committed to the topic of financial education and continue to partner on a number of school outreach programmes. Together, our goal is to support school children and young people in developing their financial literacy skills and to understand the value of savings.

We have also launched a new volunteering policy in UK in 2022. The purpose of this policy is to support employees who wish to undertake volunteer work whilst employed by AXA IM in the UK. Supporting our communities is an important element in AXA IM's Corporate Responsibility framework and we believe that offering the opportunity for our employees to volunteer their time and/or skills to a registered charity which has personal meaning can provide great value, both to our employees and to the communities in which we live and work. All eligible employees can request to take up to two days per calendar year to volunteer as an individual, or alongside other AXA IM UK colleagues, with a charity registered with the UK Charities Register. These two days can be taken in addition to the AXA Hearts in Action volunteering day, organised each year as part of AXA Week for Good. The policy is currently being tested in the UK and will gradually be extended to all countries.

Governance

Maintaining a strong, resilient and sustainable business for the long term

We believe that a responsible resilient business is in the optimal position to perform in the long term, supporting our clients, employees and communities to grow alongside us. As a responsible investor, we actively use company engagement and voting to positively influence the corporate behaviours needed to drive long term sustainable growth. As a business, we similarly work to nurture a relationship of accountability, security, transparency and trust with our clients, employees and all those who engage and partner with us.

Holding ourselves to the highest standards of behaviour and conduct

Earning and retaining the trust of our clients and stakeholders is key. Our AXA IM Standards framework details the policies and processes followed by everyone across AXA IM, to ensure that we manage risk robustly and run our business ethically and transparently for all our stakeholders. The AXA IM standards are reviewed and each year, to ensure compliance across all teams.

Our code of conduct includes processes on topics such as anti-bribery, whistleblowing and handling of data, with topics reinforced by regular communication and employee training. Our staff are all required to undertake regular training to ensure they understand their responsibilities for the security, privacy and transparency of our organisational operations.

Understanding, assessing and mitigating risks

As a firm with a long-term outlook, we also recognise our responsibility to grow and adapt to new challenges as they arise, by continually exploring emerging risks and key topics. We operate under a Global Risk Management framework, which assesses and addresses all key risks as an investor and business. Cyber security is recognised as a key risk and our staff undertake regular training and checks, to ensure that everyone understands their own responsibility for the safekeeping and security of any information and intelligence intrusted to us. We have business recovery plans, which are reviewed and updated regularly, to ensure that our service to our stakeholders can continue in any unforeseen scenario.

We finally have processes in place to protect the confidentiality and privacy of all data selected, handled or communicated by us – with adherence to all data laws and regulation.

2- Our internal resources and ESG capacity building

2.1 Our human resources

Since 2020, our RI capabilities are embedded within each AXA IM's business units, including AXA IM Core for traditional asset classes and AXA IM Alts for alternative asset classes. RI is now embraced by all investment teams which perform RI-related activities as part of their day-to-day. AXA IM Core and Alts teams work collaboratively in the implementation of AXA IM's RI Strategy described in this report, notably to reach net zero greenhouse gas emissions by 2050 across all assets under management. At end of 2022, c. **2%** of AXA IM employees[51] are fully dedicated to RI topics (excluding employees contributing partially to these topics on a day-to-day basis).

For AXA IM Core

AXA IM has invested significant resources into recruiting RI experts and analysts who work with our investment teams to integrate ESG issues into their investment processes. The range of backgrounds includes fund management, sell-side research, quantitative analysis, strategy and project management, in addition to relevant RI experience; ensuring that RI issues are integrated using an investment-relevant approach. In total, 30 employees are involved at full-time in RI / ESG activities. There are other professionals who are not included but whose ESG work is embedded in their day-to-day routine.

More specifically, since 2021, the RI research capabilities within AXA IM Core is organised as follows:

- RI Experts teams:
  - A **RI Coordination and Governance** team responsible for coordinating the definition of the Sustainability roadmap and for steering transversal RI projects. The team is also in charge of research and engagement on corporate governance topics and develops and implements our voting policy on key themes mentioned above. The Stewardship strategy is built and led jointly with the RI Research team. This team also helps to ensure consistency between the different business units of AXA IM in their approach to sustainability. Finally, given its involvement in the implementation of sustainable finance policies in different locations, this team is also a major contributor to advocacy efforts on sustainable finance themes;
  - A **RI Research** team responsible for thematic research with a focus on climate, biodiversity, human capital & diversity as well as data privacy, ensuring it translates into implementable investment decisions across platforms. This team also leads shareholders engagement on those themes. Within this team, dedicated RI Analysts are in charge of defining the eligible Green, Social and Sustainability bonds universe. They rely on our proprietary framework notably inspired by the Green and Social Bond Principle (GSBP) and the Climate Bonds Initiative (CBI) Standards;
  - An **ESG Research and Impact** team responsible for conducting ESG and Impact analysis at company level, working closely with fund managers. Dedicated Impact Analysts perform qualitative impact analysis on companies based on five key pillars, reviewing their products or services and operational activities to demonstrates whether a company contributes to the Sustainable Development Goals or to a specific outcome;

[51] As of 31 December 2022, AXA IM accounted 58 employees fully dedicated to RI topics (excluding employees partially contributing to RI topics) out of a total of 2,675 employees including permanent and temporary contracts and excluding internship. The last figure includes 766 employees for AXA IM Paris SA and 101 for AXA REIM SGP.

   - A **RI Solutions, Tools and Models** team dedicated to the development of ESG quantitative solutions. As such, the team is providing portfolio managers and analysts with ESG raw quantitative data, KPIs, internal and external research and proprietary ESG scores, including tools to assess corporate alignment at issuer and portfolio levels, and ESG scoring and SDG alignment at issuer level;

- RI Champions within the business:
   - RI Champions within investment teams in charge of coordinating RI-related projects within their investment platform, of the integration of ESG criteria in decision-making process, supporting investment teams on RI-related topics and make the link between RI-dedicated teams and investment teams;
   - ESG product and quantitative specialists within the Investment Specialist and Quant Lab teams oversee respectively product and business development activities and support the integration of ESG criteria and RI approaches within portfolio construction and decision-making processes.

In addition to these teams, 9 employees from Operational functions within Core and within the Global COO department are fully dedicated to ESG, to ensure the adaptation of our operational and IT framework to ESG integration and proper level of oversight from control functions.

For AXA IM Alts

In addition to the breadth of Responsible Investment experts embedded within the asset management business to provide thematic research, coordination and governance, AXA IM Alts has a dedicated central team of seven fully dedicated experts to support investment teams in identifying and managing ESG related risks and opportunities specific to Alternative asset classes. For Real estate equity, the Responsible Investment teams coordinates a network of ESG leads, ESG experts within the Asset Management team, who are in charge of the operational deployment of our ESG strategy within Real estate assets:

- Responsible Investing team: a dedicated team which supports the ESG integration of the Real estate and Infrastructure businesses through the specific research and analysis of portfolio ESG performance, climate related risk assessment and reporting in addition to day-to-day support for all investment teams.
- AXA IM Alts also relies on 7 Local ESG Leads who oversee the integration of ESG across real estate assets in geographies they cover by leading sustainability related projects.
- AXA IM Alts has more ESG resources servicing the Natural capital & Impact and Alternative Credit business lines including a dedicated Impact Investing team which analyses and selects impact projects in alternative assets such as private equity, venture capital, private debt, real assets and project finance with the aim to address the needs and aspirations of underserved people globally while protecting natural environment and contribute to the UN SDGs.

Finally, AXA IM has a dedicated Corporate Responsibility team, guided by the three pillars of ESG: Environment, Social, and Governance. The team actively engages with all areas of the business to explore opportunities to push for progress on our key pillars to ensure we ‘walk the talk’ and do ourselves that which we ask of others. It also benefits from our parent AXA Group, which is a leading industry voice fighting for progress on topics such as climate change and social inclusion.

2.2 Our training & internal capacity building resources

Our employees are regularly trained on ESG and RI through internal and external training:

- Our flagship AXA Group-wide 'AXA Climate Academy' programme was launched in October 2021 with the aim to support our collective effort to mitigate the effects of climate change. AXA committed to train 100% of its staff by 2023 as part of AXA's Driving Progress 2023 plan. Over several hours, our employees learn why climate matters increasingly to our clients; the main risks associated with climate change; the impact all along the value chain for insurance and investment companies; as well as how they can contribute to reducing the carbon footprint of our company through professional and personal practices. To go one step further, AXA IM will continue to build on the AXA Climate Academy programme in 2023 with the 'ACT playlist' from AXA Climate School, with a role-specific content available for functions including HR, technology, purchasing, finance and legal to help employees understand how sustainability impacts their jobs.
- The AXA IM ESG Academy was launched in 2020 to increase access to ESG upskilling for all employees. That same year, the major analysts' associations launched ESG certifications including an ESG Certificate from the Chartered Financial Analyst (CFA) Institute as well as a Certified ESG Analyst (CESGA) programme from the European Federation of Financial Analysts Societies (EFFAS). The widespread access to this external training and certification has been provided since 2020, with a particular focus on the participation of Core and Core client group teams. This upskilling journey has been accelerated by live sessions, delivered in partnership with external training companies, as well as by the encouragement of investment, research and sales professionals to make progress towards achieving major industry qualifications – including the newly-introduced CFA Certificate in Climate Investing.
- A foundational Real estate ESG training was also launched at Q4 2022. Developed uniquely for AXA IM by training provider Hillbreak, internal Responsible Investment team and Talent Development team; this 3-hour course aims at developing the knowledge and understanding of this increasingly dynamic, rapidly evolving and critical agenda for Real Estate investment markets of all employees related to real estate investment. 80 people have been trained in 2022 and an additional 300 people are targeted for 2023.
- In addition, RI teams organize regular training on ESG issues for AXA IM staff. These sessions cover notably sustainable regulations, real estate ESG fundamentals and AXA IM's RI strategy (*e.g.*, net zero commitment and methodologies, scoring methodologies, engagement and voting activities).

Finally, we use Workplace and SharePoint to share any RI update internally. We have a dedicated RI and Corporate Responsibility SharePoint accessible to all AXA IM employees, which details our ESG strategy, actions implemented, and includes all materials we produce (*e.g.*, standards, policies, presentations). We communicate regularly on various Workplace groups, including groups dedicated to local offices (*e.g.*, Paris, London, Greenwich) to hundreds of AXA IM employees worldwide on our RI framework and actions we take to reach our NZ objectives.

2.3 Our technical resources

The RI Solutions, Models and Tools team bases its analysis models on a range of internal and external data sources: ESG rating agencies, broker research, and company and press publications. In 2022, AXA

IM spent more than €2.36 million in third-party ESG-related product and services (6.1% of the total market data expenditures in 2022[52]), including ESG data, in particular from the following data providers:

Suppliers	Expertise	Added value	Scores and Research	Raw Data and KPIs
MSCI	Leader on corporate and sovereign ESG rating with a strong track-record and expertise on climate analysis for corporates	ESG and climate research	✓	✓
Vigeo Eiris	Strong expertise in social issues and European small & mid cap	Methodology based on analysing stakeholders from the leadership, implementation, and results perspectives	✓	✓
Sustainalytics	Controversies analysis / exposition to some activities and compliance with international norms	Controversies and reputational risks	✓	✓
Ethifinance	Strong expertise on European micro and small caps	ESG KPIs used for Leverage loans and private debt asset classes.		✓
FinDox	Strong expertise on ESG data collection for European and US leveraged loans markets	ESG KPIs used for Leverage loans and private debt asset classes		✓
Bloomberg	Full range of ESG services	ESG KPIs used for investment and reporting purposes.		✓
ISS - ESG	Offers expertise across a full range of ESG issues, and expertise in Impact analysis	Ethical filters and controversial weapons, Impact research and UN SDG alignment assessment	✓	✓
S&P Global Trucost	Full range of quantitative environmental and social key performance indicators (KPIs) – including SFDR PAIs – and taxonomy alignment metrics	Full range of quantitative environmental KPIs, SFDR PAIs and taxonomy alignment metrics		✓
Beyond ratings	Expertise in Climate analysis	Climate research for Sovereign assets	✓	✓
Carbone 4	Offers a climate risk package	Measures the carbon impact of investments	Only used for green bonds reporting	

[52] Total expenditures in market data represented €39M excl. value added taxes (VAT) in 2022.

Iceberg Data Lab (IDL)	Measurement of investors' investments impact on biodiversity	These two data providers joined forces to develop metric quantifying companies' impact on biodiversity and nature to help investors integrate this into risk assessment and research	✓	✓
Urgewald (NGO)	Coal, oil and gas research	Coal, oil and gas research with GCEL and GOGEL		✓

To adapt to the ongoing evolution of market practices (whether regulatory or client driven) that are more and more demanding in terms of ESG assessment, AXA IM constantly monitors and refines ESG methodologies and accordingly adapt the tools provided to portfolio managers to achieve advanced ESG integration.

To do so, we monitor the quality and service offerings of all ESG data providers in the market, and regularly interacts with them to understand and challenge – when necessary – methodologies and related changes. As investors, we seek the best information possible, which requires using different ESG providers leveraging their strengths on specific areas.

In terms of challenges, the following points can be noted:

- Methodologies are still in the works, and complex (*e.g.*, climate / alignment). ESG data relies on these methodologies, and is therefore subject to changes, and to challenge. This makes it more difficult to integrate in the investment decision than a traditional financial information, based on well-know and shared standards;
- Lack and cost of ESG data – although initiatives to encourage issuers to report in a more homogeneous, transparent, and usable manner are multiplying (TCFD on climate data, Workforce Disclosure Initiative on social data, TNFD, etc.), with new sustainability standards in the works at policy-makers level, for now, ESG data remains heterogeneous and therefore complicated to use when investing and reporting. We encourage initiatives at the European and Global level to reinforce the availability of ESG information at issuer level, but also to make it available in an easy and less costly manner. AXA IM supports initiatives aimed at ensuring convergence and cooperation at global level, to develop standardized, mandatory ESG data. We support the work of the EFRAG taskforce as part of the CSRD preparation, and advocate for convergence including via our participation to ISSB Investor Advisory Group.

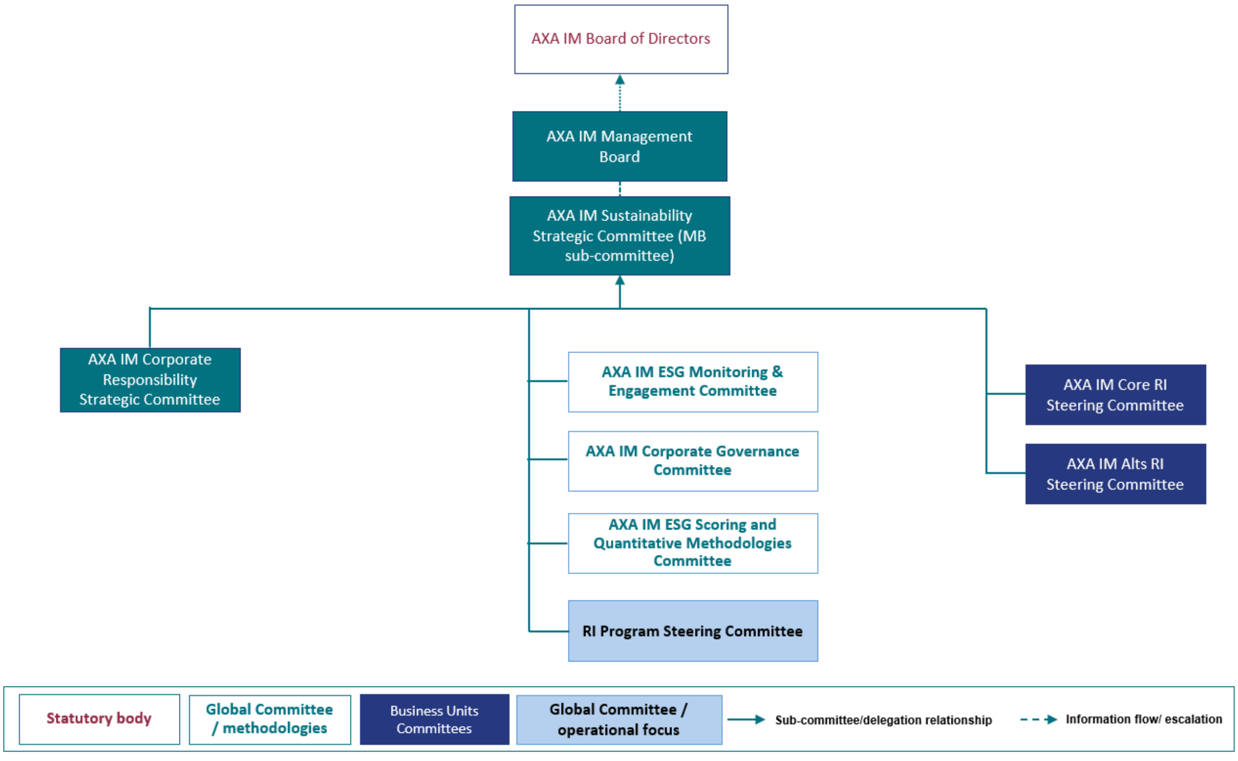
3- Our ESG governance & remuneration policies

3.1 Our RI governance & committees

As part of the reorganisation of the RI and Corporate Responsibility (CR) activities undertaken by AXA IM's Management Board in 2020, the governance structure has changed in 2022 with significant enhancements to continue to embed ESG within AXA IM Core and AXA IM Alts business units. This new organisation allows AXA IM to:

- redefine and strengthen its RI Strategy across its activities, covering both traditional and alternative assets classes;
- improve collaboration and synergies between the two main business units and better consider specificities of each asset class;
- ensure alignment with our own operations and practices through a joint work with the CR team.

This governance structure helps us to ensure our integration of sustainability risks into investment decisions is sufficiently robust and transparent for all our clients and external stakeholders.



Source: AXA IM, February 2023.

Main committees	Objectives
AXA IM Board of Directors	- Discusses and oversees key components of AXA IM ESG strategy and regulation directly or through the sub-committees of the Board (Audit and Risk Committee / Remuneration and Nomination Committee)
AXA IM Sustainability Strategic Committee	- Leading body in charge of defining AXA IM's strategy and roadmap with regards to Sustainability (encompassing RI and CR) and monitoring its delivery

	- This includes the definition of sectoral policies and RI product framework as well as piloting efforts on selected themes such as climate change or biodiversity - It also reviews how AXA IM and AXA Group Sustainability strategies interact
AXA IM Corporate Responsibility Strategic committee	- Defines AXA IM CR strategy, taking into AXA Group strategy, with concrete roadmap - Animates a community through communication and business actions - It reports to the AXA IM Sustainability Strategic Committee
AXA IM ESG Scoring and Quantitative methodologies committee	- Ensures coordination of ESG integration focusing on more quantitative aspects - Validates quantitative methodologies
AXA IM Corporate Governance committee	- Provides strategic oversight of AXA IM's corporate governance, stewardship and voting activities in relation to investee companies and ensuring clients' rights and obligations are exercised in a manner consistent with good practice standards
AXA IM ESG Monitoring & Engagement committee (and sub-committee)	- Ensures views developed on ESG risks and opportunities, from exclusion to engagement topics are discussed collegially, and considers possible implications for AXA IM, including on controversies - Facilitates coordination between various stakeholders in the implementation of the engagement strategy. This includes priorities for engagement on certain sectors, which can encompass listed and non-listed assets - Acts as a gatekeeper of AXA IM exclusion policies - Oversees the ESG scores override process ("ESARC")
AXA IM Alts and Core RI steering committees (and sub-committees)	- Endorses the RI strategy of the business units based on the AXA IM strategy agreed at AXA IM level, implements and monitors ESG methodologies, scores and RI processes for both business units. It keeps the AXA IM Sustainability Strategic Committee informed where appropriate, with the aim of ensuring consistency - Defines (and adapts when needed, *e.g.,* to regulatory standards) our common impact investment framework
RI Program Steering Committee	- Monitors progress of RI-related projects with an operational focus

Source: AXA IM, February 2023.

As AXA IM employees, all RI committee members are regularly trained on ESG and RI through internal and external training (see section 2.2). The Chair and Secretaries of committees listed above have RI related roles, and senior representatives from RI Experts team participate to those committees alongside other teams, therefore ensuring an effective integration of ESG criteria into business considerations. All committees' members are selected based on their RI expertise (*e.g.*, portfolio managers represented by their respective asset class RI Champions: see section 2.1).

3.2 Integration of ESG factors into remuneration policy & ESG objectives

ESG and RI considerations are included in the appraisal process of different teams including Responsible Investment dedicated teams. Since 2018, all heads of investment platforms at AXA IM have had ESG objectives included in the target letters they cascade to the relevant teams in their department. Since January 2021, individual and collective objectives for investment teams have also included elements related to the sustainability risk framework as well as updated investment processes which include the monitoring of these risks. Thus, the individual level of the variable portion of compensation will depend on the achievement of individual qualitative and quantitative objectives, as well as collective performance criteria. From 2023, an ESG development goal will have to be shared by everyone at AXA

IM. It aims to embed responsibility as an AXA IM employee. More specifically, Real estate equity asset management teams are assigned individual ESG objectives with targeting data collection coverage, asset certification and decarbonization measures.

At AXA IM, we believe variable remuneration must account for appropriate qualitative criteria, such as sound and effective risk management (including regulatory compliance) and client service which delivers fair, high-quality outcomes. As AXA IM variable pay is potentially composed of cash and deferred variable pay, from 2023, the deferred part of the variable pay is indexed to an ESG performance Index, aligned with the AXA IM net zero ambition [53]. From 2023, the deferred compensation of c. 400 people that will start to be paid in 2024 will include, alongside existing criteria, the ESG metrics according to the employee's business area and remit:

- The weighted average carbon intensity (WACI) to reach the target of 25% reduction in carbon intensity for corporate portfolio by 2025: for the ESG part of the deferred compensation, this metric accounts for 75% for AXA IM Core and 37.5% for transversal functions' employees in scope;
- The target of having 50% of directly managed AuM from Real estate portfolios aligned with the CRREM trajectories by 2025: for the ESG part of the deferred compensation, this metric accounts for 75% for AXA IM Alts and 37.5% of transversal functions' employees in scope;
- The reduction of the corporate operational GHG emissions, to reach the interim target to reduce it by 26% by 2025: for the ESG part of the deferred compensation, this metric accounts for 25% for all AXA IM Core, AXA IM Alts and transversal functions employees in scope.

This new policy is reflected in the **AXA IM for Progress Monitor**[54], launch in early 2023, a set of metrics selected due to their material contribution towards AXA IM's ambition of becoming a leading responsible asset manager. AXA IM for Progress Monitor brings together a selection of existing metrics in a simple and transparent way, to better communicate and showcase our journey to net zero.

Initially comprised of eight metrics selected for their strategic importance and material contribution towards our goal of becoming net zero as a business and investor by 2050, AXA IM for Progress Monitor represents the way we know we can effect change on the road to net zero:

- **Decarbonization** across the main asset classes and for our own operations;
- The importance of **active engagement** as an active asset manager, both internally and externally;
- **Providing solutions to encourage clients to consciously channel capital** to companies and projects that can help accelerate the transition.

Progress towards these targets will be reported annually from 2023 and the AXA IM for Progress Monitor will evolve in time to factor in AXA IM's commitments towards E, S and G criteria. Our progress towards these interim targets will be reported annually with the first update due in July 2023.

The **AXA IM Remuneration Policy**[55] sets out principles relating to remuneration, which accounts for AXA IM's business strategy, objectives, risk tolerance, and the long-term interests of AXA IM clients, shareholders and employees. It also seeks to ensure sound and effective risk management and behavior which is consistent with the risk profile, strategy, objectives and values of the managed portfolios. In the 2022 update of the Remuneration Policy, the importance of equity and gender equality has also

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53 AXA IM aligns compensation of senior executives to its ESG ambitions | AXA IM Corporate (axa-im.com)
54 AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
55 Remuneration | AXA IM Corporate (axa-im.com)

been re-emphasised. AXA IM aims to reward equal performance free from discrimination or irrelevant personal factors such as age, nationality, ethnic origin, gender, sexual orientation, gender identity or expression, religion, marital status, or disability.

4- Our ESG engagement strategy

One of our key ambitions is to play a leading role in financing the transition to a greener and more sustainable world. Part of this involves encouraging companies and key stakeholders in their transition journey through focused stakeholder engagement and open dialogue to enable change. Through our voting and engagement strategies, we have an opportunity to use our influence to drive a broader change for the benefit of society and the planet. This is a central pillar of responsible investment at AXA IM, and we therefore continuously review ways to make this dialogue as efficient and impactful as possible.

For **traditional asset classes**, we see three essential ways to do this: i) clear and meaningful objectives communicated to management; ii) regular meetings to verify and evaluate progress; and iii) voting with conviction or pursuing other escalation techniques when required. Our active dialogue with companies allows us to effectively monitor our investments, and ensure we maintain open channels which can enable change to the benefit of society, the planet – and ultimately our clients.

For **real assets**, we engage directly with the tenant of our real estate assets through different means aiming at informing them and involving them in our strategy.

Here are reference materials describing our voting and engagement strategies and the result of their implementation:

- Corporate Governance and Voting policy
- Engagement policy
- 2022 Stewardship report
- Full voting records

4.1 Engagement, collaboration and escalation

Engagement in 2022: highlights and data[56]

The financial sector faces increasing scrutiny about how it addresses climate change and global societal challenges. Our **exclusion policies set clear red lines** and send a strong message to companies on what we consider unsustainable practices and activities, **but we also rely on our stewardship strategy to push investee companies to address key ESG risks and implement best practice**.

We put great emphasis on having a direct dialogue with companies on issues that can have a material impact on long-term financial performance. Our Responsible Investment (RI) thematic research on key ESG issues such as climate change, biodiversity, responsible technology, human capital and human rights and governance feeds our stewardship strategy.[57]

Last year was pivotal for our engagement activities. Our focused thematic engagement approach has now been in place for more than three years and we are already seeing the outcomes of these efforts. Engagement objectives set at the start of our dialogue with seven investee companies are now being achieved, but there have also been five instances where we consider the objective has not been achieved, partly due to an increasingly complex macroeconomic context. We continue to reinforce

[56] Figures in this section may be rounded
[57] Investment Institute: Sustainability, AXA IM, retrieved February 2023.

continuity in our stewardship approach, escalating concerns when engagement is stalling (in 20 cases last year), including through our votes.

As part of our commitment to reporting transparently and clearly on our RI activities, we adjusted our engagement policy in early 2022 to draw clearer lines between different types of dialogue. And so **'engagement with objectives'** is led by thematic experts with an explicit goal to achieve change within a company, whereas **'sustainability dialogue'** is less intensive, and focused on companies where the continued enhancement of sustainability practices aims to help support the robust, long-term profitability of the company. The latter is often led by portfolio managers or credit analysts.

We believe this distinction has allowed us to reinforce the governance, resourcing and oversight of our focused engagement and helped maximise the chance of success, while also enabling better reporting on the breadth of discussions happening on sustainability matters.

Overall, in listed markets, we conducted 596 engagements with 480 entities in 2022, representing an increase of our engagement activity by 111% compared to 2021.

Climate remained our main theme (28% of engagements), while the trend we identified in 2021 of an increase in corporate-governance-related engagement also continued this year. A lot of environmental and social topics are now addressed alongside governance-related topics, showing increasing integration of environmental and social considerations into the heart of corporate strategy, which we see as very positive. We also note that discussions on sustainability aspects with investee companies are now held further up the management hierarchy. Compared to 2021, we discussed more at senior executive and board level (36% of engagements in 2022 versus 25% in 2021). This was even more pronounced for our 'engagements with objectives'.

Engagement with objectives

In 2022, we conducted 355 'engagements with objectives' with 287 entities. Governance was our key theme of discussion, with 24% of cases covering corporate governance matters. However only 15% of those meetings were solely focused on governance issues: We are convinced that effective governance policies and practices are a prerequisite to appropriate handling of environmental or social issues. As such, we often address governance when engaging on any environmental or social topics.

In 2021, a significant proportion (30%) of climate change engagements were linked to governance. While this was still the case in 2022 (at 33%), corporate governance issues were addressed in half of our meetings about human capital issues. These results were driven by an increase of DEI topics, requiring the development of dedicated policies, the use of top management objectives and incentives, and appropriate board oversight.

Ecosystem protection and human capital were key engagement themes too as we pursued engagement programmes on diversity, as well as biodiversity and deforestation. We also strengthened engagements in many sectors including technology, where we focused on companies exposed to responsible tech issues. The Corporate Governance team, responsible for voting proxies at general meetings, also reached out to a number of companies that had been targeted by environmental, social or governance-related shareholder resolutions with a high level of support, with the aim to investigate where they stood in the implementation of the proposals.

We favour direct dialogue with issuers but have continued to join new collaborative initiatives which now represent 13% of all engagements. We believe that joining our efforts with other investors can improve the efficiency of the engagement process and the materiality of results, on the condition that we share clear shared goals and expected outcomes. On a number of occasions in 2022 this common purpose proved a little elusive, due to a more complex macroeconomic environment which encouraged an emerging backlash to ESG efforts, most notably in the US.

We believe those debates and discussions between members of collaborative initiatives, including on the governance of the initiatives themselves, are also an illustration of their increasing importance.

In applying our stewardship strategy, for engagement with objectives, we aim to set out meaningful objectives which are clearly communicated to management of the issuer with whom AXA IM engages a dialogue. We then hold meetings with such issuers to verify and evaluate their progress regarding ESG issues and we vote with conviction or pursue other escalation techniques when required which could lead to divestment in the case of most problematic engagement failures. In 2022, we divested from a Swedish IT company following recurring and structural concerns of corruption.

Sustainability dialogues

In 2022, AXA IM introduced the 'sustainability dialogue' approach to better reflect the breadth of dialogue happening between investment teams and corporates or government-related agencies on sustainability topics. These discussions are key to proactively identify ESG issues, and often focus on companies where the continued enhancement of sustainability practices is expected to help support the robust, long-term profitability of the company. Where weaknesses are identified 'sustainability dialogue' may lead to using escalation techniques in certain cases, or to initiate a more formal 'engagement with objectives' led by thematic experts.

Climate change is the overarching theme of discussion with investee companies and government agencies, accounting for 38% of dialogues. We registered 234 discussions with 219 entities in 2022 and expect this number to continue to increase over time.

Real estate engagement

Stakeholder engagement is at the heart of AXA IM's ESG strategy, for the company is deeply convinced that the general and specific ESG objectives it has set itself will be achieved through better knowledge of, and greater attentiveness to, all the stakeholders involved in its assets. Given the multiplicity of topics, the complexity of making extra-financial information comprehensible and the growing number of regulations, we are constantly seeking to engage with other actors, particularly in this period of strong energy and ecological transitions.

Faced with the dual challenge of the energy and climate crises, AXA IM has strengthened its engagement with tenants and stakeholders to ensure its compliance with local regulations, such as France's Dispositif Eco Efficacité Tertiaire (DEET).

In 2022, we undertook again our engagement exercises as part of the active stewardship of our Listed Real Estate investment platform. A survey questionnaire is sent to all listed real estate companies to gain a better understanding of the qualitative and quantitative metrics associated with the ESG practices and performance within each company. This data gives us deeper insight into ESG-related risk within investee companies in our investment portfolios and, over time, allows us clearer insight into the alignment between the performance of the assets in the underlying investments, and the aspirations of our clients and organisation.

Moreover, to ensure that we stay abreast of upcoming developments, in 2022 AXA IM joined GRESB's first Net Zero Working Group, which explores how net zero is approached across the real estate and infrastructure sectors.

► Vision for 2023

In 2023, stewardship will remain a top priority on our RI roadmap. We will aim to:

- Increase the number of engagements while maintaining a high level of quality in our discussions and processes as we seek to improve the chances of seeing engagement succeed. This will require the continued collaboration with investment teams and analysts as key partners in the process, as we continue to integrate ESG and upskill the teams;
- Improve oversight of the engagement process to increase the chances of achieving the desired change within the company. This may lead us to using escalation more often or working with peers or asset owner clients as part of collaborative initiatives. In an ever-more complex world, it is our belief that collective action remains an effective way to facilitate this, and we will continue to play our role in collaborative initiatives;
- Develop engagement in alternative asset classes as a key priority for AXA IM as we reinforce our footprint in this market, including in the real estate space with tenant engagement;
- Pursue public policy efforts, on sustainable finance aspects, but also real economy issues, and acting with industry groups to do that, such as the Institutional Investors Group on Climate Change. We believe government action is needed to help accelerate an orderly transition to a more sustainable world, thus helping to improve the chances we can deliver long-term robust performance for our clients.

Transparency will remain a key priority for us, and we intend to improve our engagement reporting capabilities at fund level. We will also continue to set out clearly where we see challenges on our path to net zero.

For more details on our engagement activities on ESG themes and engagement process, please refer to our 2022 Stewardship report[58].

4.2 Public policy: involvement with industry groups and policy makers

At AXA IM we adhere to the principles, standards and codes which govern policies and practices in the markets where we are active. For many years, responsible investment processes were framed by 'soft', industry-led standards. But 2021 marked a step change for the European financial industry. The first stage of the EU Sustainable Finance Disclosure Regulation (SFDR)[59] and the EU Taxonomy Regulation[60] came into force, alongside its French counterpart, the AMF Doctrine 2020-03[61] and the International Sustainability Standard Board (ISSB) was established.

58 Stewardship and Engagement | AXA IM Corporate (axa-im.com)
59 Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector, European Union, 2020.
60 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, European Union, 2020.
61 Informations à fournir par les placements collectifs intégrant des approches extra-financières, AMF, July 2020.

As we enter 2023, the landscape has dramatically altered again. Sustainable investment teams across industry have spent much of 2022 working closely with their legal, compliance and reporting colleagues to analyze the regulatory updates and supervisory guidance published throughout the year, aiming to come up with interpretations of some key tenets of the regulations for senior management to review. These have included the SFDR Article 2 (17), which described in eight lines what a "sustainable investment" is, as part of the preparation for SFDR Level 2 deadline in January 2023 which introduced detailed disclosures for Article 8 and Article 9 financial products[62].

Corporates also published for the first time the eligibility of their activities to the EU Taxonomy for sustainable activities, a framework designed to define what counts as climate-friendly activity - and which is still in the works. For now, just two out of six objectives are completed with technical screening criteria[63].

While it was not an easy year for a wide variety of stakeholders, absorbing this new sustainable finance framework at EU level has paved the way for an enhanced, shared understanding of the key challenges to be addressed to make the framework more usable. This should help it reach its end goals of improving trust and facilitating the allocation of capital to support decarbonization and innovation in more sustainable solutions. The need for stakeholders to come together and regroup to find those "robust and workable" solutions also became clearer, from asset managers to corporates, policymakers and supervisors, making advocacy efforts even more relevant.

This fast-evolving backdrop in the European Union has been joined by fresh developments in the UK, Asia and the US, and our objectives for public policy engagement have been to encourage a regulatory framework for investors where sustainability and responsible investment are taken seriously. We encourage rules around disclosure and definitions in terms of defining what is 'green' or 'sustainable' and these must be robust, consistent and science-based where possible – and they need to be able to be used by the financial sector and by corporates, and understandable for all investor types.

We think such a holistic approach can help tackle greenwashing – where climate-related rhetoric is not matched by action. Our approach reflects and reinforces the practices, framework and disclosures we have developed over time, including in response to Article 173 of France's Energy Transition Law, then replaced by Article 29 of 2022's Law on Energy and Climate which goes a step further on decarbonization and biodiversity[64][65]. Our advocacy efforts in 2022 have focused notably on the following[66]:

- **Addressing the current shortcomings of the SFDR within the European sustainable finance ecosystem.** While we continue to support its overarching objective of providing increased transparency and comparability to our clients, several of the SFDR's key concepts have remained too vague in our view. These include the definition of what a sustainable investment is, resulting in

[62] What is SFDR? AXA IM, 2022. **Article 8** products are deemed to be those that promote environmental and social characteristics, taking ESG criteria into account as part of the investment process. **Article 9** products have a sustainable objective and therefore target specific sustainability outcomes – either environmental or social – alongside targets for financial returns.
[63] EU Taxonomy: Six key questions on the new flagship climate rules, AXA IM, March 2022
[64] ESG: France's Article 173: taking stock, IPE, January 2019
[65] France's Article 29: biodiversity disclosure requirements sign of what's to come, Taskforce on Nature-related Financial Disclosures, March 2021
[66] This list does not intend to be exhaustive, and we have as an example contributed to industry associations' responses on approaches being developed at local level, including in the UK with the Sustainable Disclosure Requirement Discussion Papers

uneven implementation across the market, and a wave of reclassifications from Article 9 to Article 8 towards the end of 2022 as asset managers chose to be more conservative. In our view, in order to avoid creating confusion for investors, such an implementation of the EU sustainable investment concept should lead to more clarity and convergence in interpretation by EU institutions - while society is particularly attentive to how the financial sector adapts to sustainability challenges.

- Given the interconnections between these key – but still unclear – SFDR concepts, EU Taxonomy and new sustainability preferences framework introduced in the EU's Markets in Financial Instruments (MiF) Directive in August 2022, we have focused our advocacy efforts on raising awareness at European level among policymakers and supervisors of the issues and the risks this lack of common clarity could represent. We have also addressed the subsequent and urgent need to improve the usability of the regulations. This advocacy has taken place within various industry groups including the European Fund and Asset Management Association (EFAMA)[67] and its equivalent in France, the Association Française de la Gestion financière (AFG), as well as the SFDR Advisory Group of the European Sustainable Finance Forum (Eurosif) which published the first key report on the shortcomings of the regulation, and the Global Policy Reference Group of the Principles for Responsible Investment (PRI) association. There have also been individual engagements with the European Commission, the French Treasury, and selected local supervisory authorities[68].
- Efforts were also made to **help educate some of our key stakeholders on the long-term benefits and goals of the EU sustainable finance framework as well as on short-term areas requiring attention.** Our objective has been to facilitate understanding and limit the negative impact on trust in the financial industry. As such we create content and organize webinars and educational programmes for our clients and employees. We also have regular interactions with the media, including to proactively explain our approach to SFDR reclassifications.
- Increasing expectations on asset managers' stewardship responsibilities resulting from the European sustainable finance ecosystem – including SFDR, but also the upcoming Corporate Sustainability Due Diligence Directive (CSDDD) also led us to **reiterate the technical obstacles we continue to face, despite the revised Shareholder Rights Directive, in exercising our voting rights** – which is key to the effectiveness of our engagement and stewardship activities. In that respect, we responded via several working groups (such as those implemented by the European Fund and Asset Management Association and by France's Association Française de la Gestion financière) to a call for evidence on the implementation of SRD2 provisions from the European Securities and Markets Authority (ESMA). In light of the growing importance of stewardship and engagement as a way for investors to comply with sustainable finance regulation, we will monitor any developments in 2023 (including any potential proposals to revise SRD II) that would aim to reduce the risks of so-called 'engagement washing'.
- **We have continued to advocate for relevant and comparable sustainability-related information to become available for a broader scope of issuers.** This data is absolutely crucial to allow investment teams to embed ESG into their decisions in a robust manner, and to enable us to provide meaningful, comprehensive reporting to clients and regulators – thus satisfying new disclosure requirements at fund and entity levels in the EU and beyond. This has been a key focus of our engagement in 2022 through our involvement in the Sustainability Accounting Standards Board's

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[67] The EFAMA is the European industry body for asset management.
[68] Eurosif Report 2022 - EUROSIF

(SASB) Investor Advisory Group (and its successor the International Sustainability Standards Board IAG), as well as through other individual and collaborative engagements; including at the level of our parent company with the European Financial Reporting Advisory Group taskforce working on European Sustainability Standards. In particular, we called for a 'double materiality' lens - looking at the impact ESG factors may have on financial performance, but also at the impact investments may have on the environment and the planet. This reflects our view of our role as responsible investors, and our wish for a better convergence at a global level, building where possible on existing and viable standards. As part of this focus on ensuring relevance and comparability in data, we have also been involved in the discussions on external ESG data and ratings and support the aims of the International Organization of Securities Commissions (IOSCO) to reinforce oversight and improve transparency.

- We continue to advocate for the adoption by issuers of best governance and sustainability-related policies and practices through our involvement in the Global Governance Policy Committee of the International Corporate Governance Network (ICGN), which notably resulted in the publication of viewpoints which sought to guide issuers in their implementation of effective oversight of their sustainability-related responsibilities.
- **Combining net zero efforts and sustainable finance policy implementation.** These major priorities continued to mobilize teams across the industry in 2022,[69] - it required a rethink of our way of working in order to further integrate environmental (and social) considerations across our organizations. Both priorities aim to efficiently ensure the funding of the transition to a world aligned with the goal of keeping global heating to well below 2°C or ideally 1.5°C. In 2022, in our engagement with policymakers as well as with net zero coalitions, we have advocated for further convergence between the two. This could be achieved in many ways, including with a 'Transition Label', with clear requirements in terms of investment process, forward-looking targets in terms of carbon-intensity reduction and robust stewardship policies. We have continued to promote this topic through our engagement in 2022, including by leveraging our role as co-chair of the Policy Advisory Group of the Institutional Investors Group on Climate Change (IIGCC) to help improve awareness and understanding of their Net Zero Investment Framework (NZIF)[70]. For example, we organized a session during which the French Treasury introduced Article 29 of the new energy and climate law to the IIGCC teams, and helped organize a session to introduce the NZIF developed by the IIGCC to the Comité du Label ISR. In 2022, we also became a member of the Carbon Risk Real Estate Monitor (CRREM)[71] Scientific Advisory Committee which operates as an advisory board to the CRREM project consortium. Together with external members, accomplished scholars at universities and think-tanks with relevant professional and policy experience, this group is expected to bring in industry-based expertise to the CRREM project.

We adopt a selective approach when deciding which initiatives we will participate in or support, focusing on topics and groups where we believe our involvement will have a material impact. Impact

[69] At AXA IM, we revised our net zero targets as part of our NZAM commitment in May 2022, with 65% of our assets under management now covered by net zero targets: 65% of AXA IM's total assets are managed to be in line with Net Zero | AXA IM Corporate (axa-im.com).

[70] The Net Zero Investment Framework (NZIF) has been developed by the Paris Aligned Investment Initiative (PAII).

[71] CRREM aims at developing a tool that allows investors and property owners to assess the exposition of their assets to stranding risks based on energy and emission data and the analysis of regulatory requirements. By setting science-based carbon reduction pathways, CRREM faces the challenge to estimate risk and uncertainty associated to commercial real estate decarbonization, building a methodological body and empirically quantify the different scenarios and their impact on the investor portfolios.

can often be greater by joining forces with other investors and stakeholders, and our public policy engagement is achieved through direct engagement with policymakers and regulatory authorities, participation in industry working groups, and responses to consultations.

► Vision for 2023

We think 2023 will be yet another landmark year on the public policy side – one where the lessons of 2021 and 2022 are learnt. This should focus policymakers' attention on the usability of the regulations, especially in the European Union. With that in mind, we are honored to have been selected as an expert member of the second mandate of the European Commission's Platform on Sustainable Finance, starting in March 2023[72]. We also look forward to seeing new regulations in the UK and the US and will continue to advocate for better global convergence.

We hope to see further momentum on the real economy policy side, while acknowledging the impact and influence of macroeconomic events. We aim to continue to engage with our investor base, providing educational content on those important and evolving policies, to encourage an understanding of how these may change our way of working and change the nature of portfolio investments.

4.3 Voting

2022 voting season highlights

The 2022 proxy season saw an increase in the number of environmental and social shareholder proposals, with around 356 resolutions voted on by AXA IM, compared to 216 last year. However, following several years of record support levels, 2022 also marked the rise of anti-ESG resolutions and activism, along with an overall decline in the level of support for environmental and social shareholder proposals.

This declining trend may be explained by the increasing number of proposals, due to a more permissive regulatory environment, at least in the US where most shareholder proposals are filed. This also allowed more prescriptive motions to go to a vote with the result that certain asset managers were therefore less willing to support them. Moreover, growing awareness of the climate emergency and the role of the asset management industry in combatting it led the focus of climate-related shareholder proposals to shift from transparency and disclosure to target setting. This raised questions in certain cases about whether those resolutions were in the best interests of the shareholders.

Additionally, the 2022 geopolitical backdrop marked by Russia's invasion of Ukraine and the energy crisis resulted in a growing reluctance, including from some of the largest asset managers, to support climate-related resolutions which could have been perceived as overly prescriptive.

Throughout 2022, at AXA IM, we have not only maintained, but significantly increased our high level of support on environment-related proposals, which reached 64% (versus 54% in 2021), despite the global energy crisis and emerging pockets of disquiet about ESG concerns. In short, we remained very conscious of the urgency around climate change and sought to stay in line with our net zero

[72] Platform on Sustainable Finance, European Commission, February 2023

commitments. Our 2022 support level reflects our approach to shareholder proposals, described in detail in a section below. Although we typically support ESG-related resolutions, we carefully review them on a case-by-case basis.

Traditional governance topics remain top of the agenda

On the governance front, 2022 was marked by the high-profile initial public offering of German carmaker Porsche; revisions to the UK Listing Rules, and the European Commission's Proposed Listing Act Reform which all reignited the never-ending debate on the differential voting rights system.

At AXA IM, the 'one-share-one-vote' principle, whereby voting rights should be proportional to a shareholder's equity stake in the company, is one of the key pillars of our corporate governance and voting policy. We see it as a proxy for management's duty of accountability towards shareholders. We have seen numerous cases of companies where engagement effectiveness is negatively impacted by their differential voting rights structure, notably because the threat of voting escalation is less credible. Indeed, in the absence of material risk that management-backed resolutions fail to pass, or that a shareholder proposal be approved, the company may be more reluctant to conduct open shareholder dialogue and to respond to our concerns, undermining the impact of our voting power and stewardship efforts.

Our corporate governance and voting policy increasingly put the focus on board accountability and responsiveness. But we remain vigilant via our engagement that companies effectively consider our concerns and our decisions at general meetings, to maximize the impact of our votes, notably in the case of shareholder proposals (see below). In that regard, we will seek dialogue with investee companies prior to, and after their AGM, to clearly communicate any potential questions or concerns. As an illustration, in 2022, we conducted 108 preliminary and/or post-AGM meetings with companies.

Our ESG convictions in our voting activity

Last year was rich and particularly eventful for ESG. As we begin 2023, we are taking the opportunity to look back at the impact of the 2022 updates of our voting policy, addressing ESG issues through voting.

ESG accountability of boards of directors

For companies particularly exposed to environmental or social risks, we sought guarantees that the most material issues are appropriately monitored by boards of directors. In our discussions with investee companies, we sought to ensure their board was sufficiently skilled and adequately structured to establish proper oversight of the company's ESG risks and opportunities.

This partly explains the fact that board-related matters were the most common topic of our engagements, discussed at about 28% of our corporate governance-related meetings with investee companies. In some cases, particularly when a significant controversy had arisen or when it was found that the board has not been sufficiently responsive to previous ESG concerns, we held the board responsible by voting against relevant directors (such as the chair of the ESG Committee or the board chair).

This led us to oppose a total of 24 directors for poor management of ESG issues.

Our approach to environmental and social shareholder proposals

At AXA IM, we seek to carefully analyze each proposal on its own merits. We believe that it does not always make sense to support such shareholder resolutions if they are not well targeted for the company in question or fail to acknowledge efforts and commitments that are in progress or in slightly different forms. We have a clear stewardship approach which frames how we decide whether to support ESG resolutions.

We do consider supporting environmental and social shareholder proposals as an effective escalation tool and supported 64% of them in 2022:

- 89% of the proposals were put forward in North America, where AXA IM supported 68% of environmental and social resolutions;
- AXA IM's overall support rate increased by 10 percentage points compared to 2021, illustrating our consistent objective of pushing our investee companies to adopt environmental, and social best practice;
- 67% of the shareholder proposals voted were related to social issues, and AXA IM voted in favour of 66% of such proposals;
- 33% of the proposals were related to environmental topics, and AXA IM supported 61% of them.

The main reason not to support a shareholder resolution is when the most material requests of the proponents are already disclosed by the company. Moreover, we have witnessed a growing number of proposals with a higher degree of prescriptiveness, which may in some cases interfere with the board's responsibilities, or not be in the best interests of shareholders. Other common reasons not to support a specific shareholder resolution are when we feel the demands are more appropriately addressed via supporting another shareholder resolution on ballot, or when we decide to oppose a management-related resolution instead.

In specific cases, we may support a shareholder proposal which does not fully match our expectations when the underlying objective is aligned with our main environmental or social concern, in order to send a signal to the company when we were dissatisfied with their current policies or practices.

Supporting a shareholder resolution, and then?

Most environmental and social shareholder proposals are being filed in North America, where the legal scope of such resolutions is only advisory. Therefore, majority adoption of a resolution does not necessarily mean it will be implemented. Moreover, the capital structures of some companies (such as those with super voting rights granted to the company's founder and CEO) may act as a barrier to the adoption of shareholder proposals to the detriment of board accountability.

Therefore, to ensure our votes on shareholder proposals are effectively followed through, and that boards remain accountable to their shareholders and responsive to their concerns, we have reached out to some portfolio companies after a resolution that we have supported, and which received majority support. Our aim is to urge the relevant boards to implement the proposals.

By the time of the 2023 AGMs for these companies, we may consider voting against the re-election of certain board members (such as the lead director or chair of ESG Committee) should the board remain unresponsive our request for implementation.

Our voting priorities for 2023

Voting is increasingly integrating ESG risks. In this context, we remain committed to evolving our practices and policies over time. We aim to continue integrating thematic issues such as climate, social and biodiversity challenges, as well as providing appropriate levels of transparency regarding our policies and their outcomes.

Learning from the 2022 voting season, including the emergence of new types of shareholder proposals on tax, corporate governance trends and of the economic context, we have updated our voting policy to address the following issues:

- **Board governance of ESG issues**: In 2023, we will continue to focus on the governance of ESG risks and request proper disclosure of governance around climate-related risks at companies particularly exposed to climate change. Insufficient disclosure may lead to a vote against the re-election of the governance committee chair or the board chair;
- **Biodiversity risks:** As part of our engagement policy on deforestation and ecosystem protection, we push companies with a material impact on biodiversity and natural capital to put in place detailed effective mitigation strategies within relevant timelines. For these companies, insufficient progress on specific engagement requests may lead to a dissenting vote cast against directors or in support of biodiversity-related shareholder proposals;
- **Responsible tax practices:** In light of the emergence of new shareholder proposals related to tax issues, we have formalized our main expectations for investee companies regarding tax transparency. We expect adequate tax disclosure to enable our understanding of board priorities, risk management, and adequacy with any potential public ESG commitment;
- **Executives' pay and wider stakeholders' experience:** In 2023, we will consider the cost-of-living crisis when voting on executive pay. We will carefully consider the impact of this period of significantly higher inflation and economic uncertainty when judging 2022 CEO pay outcomes and policies for 2023. We expect executive pay to be commensurate with that of key stakeholders including shareholders, and those most impacted by the cost-of-living crisis, such as lower-paid employees, vulnerable customers, and suppliers;
- **Unconflicted leadership:** We have been concerned by a tendency for former chairs or CEOs to retain core positions in companies through their appointment as non-executive board chairs. Given this, we have formalised our expectations for investee companies to prevent any conflict of interest or undue influence from a former executive. Therefore, we will expect companies to maintain certain mechanisms in place - such as through a lead independent director or a majority independent board - when they decide to appoint a former chair or CEO as non-executive board chair.

For more details on our voting activities in 2022 and our voting process, please refer to our 2022 Stewardship report.

5- Our share of assets in sustainable and fossil fuel sectors and activities

5.1 Green share of activities

Sustainable share of activities following the EU Taxonomy for sustainable activities

Since 2022, Corporates publish the eligibility and the alignment[73] of their activities to the EU Taxonomy. The EU taxonomy is a classification system, establishing a list of environmentally sustainable economic activities. It could play an important role helping the EU scale up sustainable investment and implement the European green deal. The EU taxonomy would provide companies, investors and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable. In this way, it should create security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed[74]. As of end 2022, two out of the six objectives were completed with technical screening criteria, Climate Mitigation and Climate Adaptation.

Based on data reported by issuers and collected by our data providers[75], as for our listed corporate assets, we accounted **30.05% of assets eligible to the EU Taxonomy** (**€76bn**) at end of 2022.

As for our alternative assets[76], on the scope of AXA REIM SGP SA (*i.e.*, €44.9bn of AuM at end of 2022) we accounted **91% of real assets eligible to the EU Taxonomy (€40.7bn at end of 2022)**[77]. This is particularly high as we manage €127.1bn of real estate assets (on a total of €198bn of alternative assets managed by AXA IM Alts overall) that are all eligible to the EU Taxonomy for sustainable activities.

Green share of activities following AXA IM approach

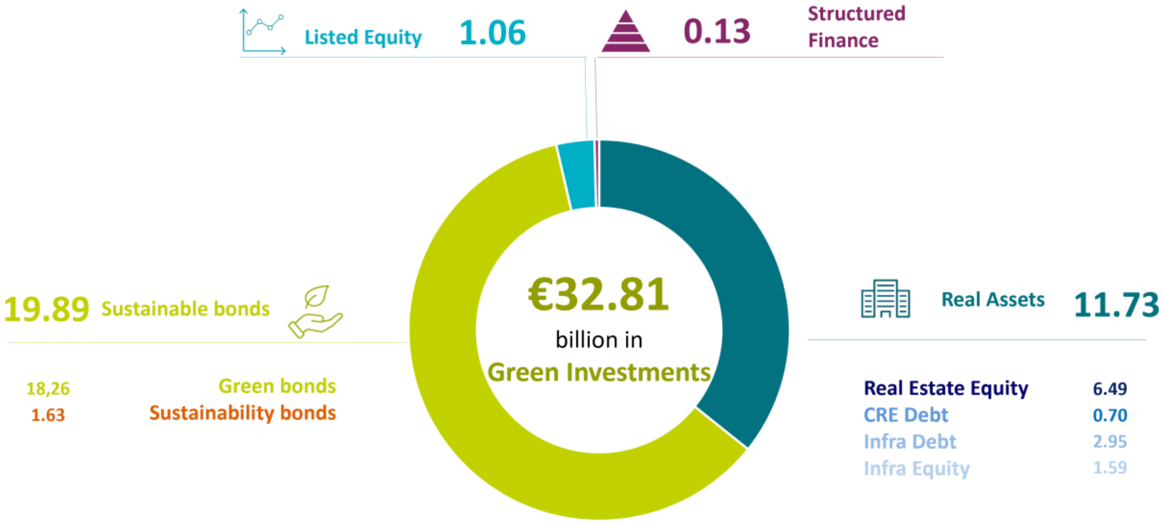
In addition to reporting of our alignment with the EU Taxonomy activities, we also consider green activities following various thematic or impact investment approaches.

Green investments (project-led green share): €32.81bn of AuM[78]

AXA IM has been an active investor in green bonds, green buildings and green infrastructure and is playing a key role in implementing the Green Investment initiative announced by AXA Group in

[73] Alignment refers to an eligible economic activity that is making a substantial contribution to at least one of the climate and environmental objectives, while also doing no significant harm to the remaining objectives and meeting minimum standards on human rights and labour standards, as defined by the EU Taxonomy Regulation.
[74] Source: EU taxonomy for sustainable activities (europa.eu)
[75] In accordance with the explanations provided by the European Commission in its draft notice of February 2, 2022 (question 18), we used the most recent information published by our counterparties to determine the level of eligibility of our assets with the EU Taxonomy for sustainable activities.
[76] As for alternative credit, private debt and other alternative asset classes (*e.g.*, derivatives), we chose not to report on EU Taxonomy eligibility as market data is not yet sufficiently available for such types of asset classes.
[77] We chose not to report on alignment for alternative asset classes as data availability remains overall very low on EU Taxonomy alignment as for 2022.
[78] Source: AXA IM as of 31/12/2022.

November 2019[79]. There are three categories of green investments: Real assets green buildings and Infrastructure, Green bonds and Green thematic equities[80]. See more details below.



Source: AXA IM, as of 30/12/2022. N.B.: the Listed Equity figure comprises four "green" open-ended equity fund assets managed by AXA IM. The Structured Finance (i.e., Alternative credit, Natural capital & Impact) figure comprises a dedicated fund's assets managed by AXA IM. The Green and Sustainability Bonds and Real Assets figures comprises all the mentioned financial securities financed by assets managed by AXA IM regardless of the legal form of financial product holding the investment. Refer to the section on green share for a more detailed assessment of the greenness of our investments.

Green Bonds

At end 2022, AXA IM managed **c. €18.3bn** of green bonds, an increase of **22.8%** vs 2021. In addition, we invested c. **€1.6bn** in Sustainability bonds.

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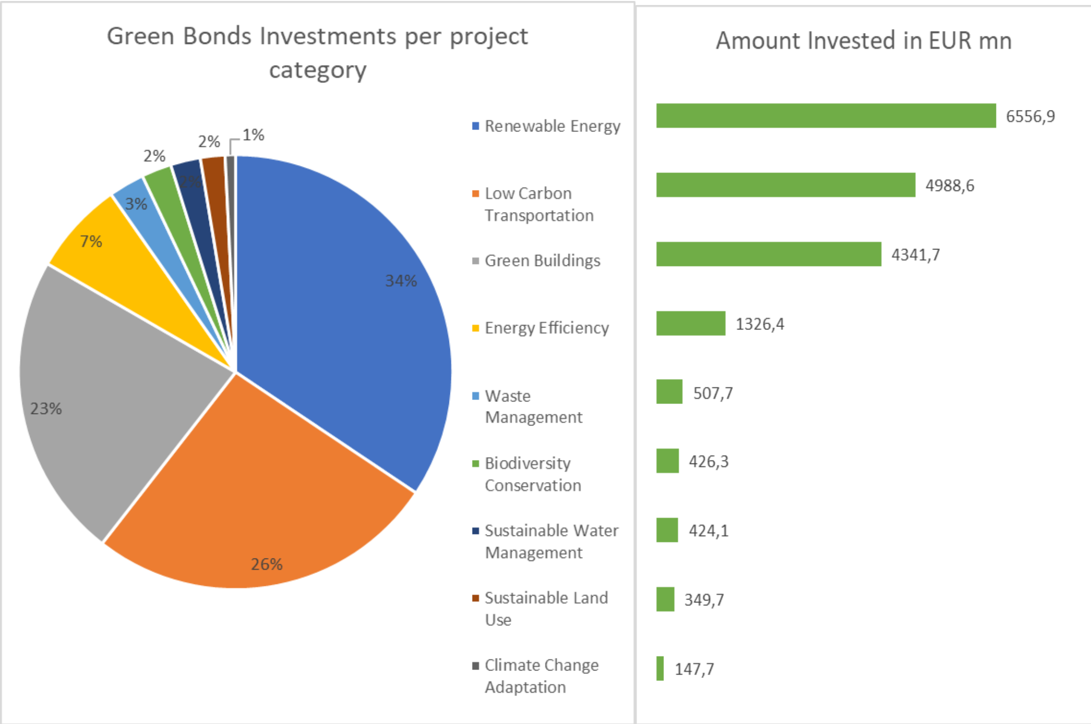
[79] See "AXA launches a new phase in its climate strategy to accelerate its contribution to a low-carbon and more resilient economy", AXA, 2019. [AXA launches a new phase in its climate strategy to accelerate...]

[80] For green bonds, we consider renewable energies as green. For listed corporate assets, we rely on S&P Trucost green taxonomy that includes the followings activities from Energy and Utility sectors classified as 'Core green' by Trucost: Geothermal Power Generation, Hydroelectric Power Generation, Solar Power Generation, Wave & Tidal Power Generation, and Wind Power Generation. We have decided to exclude nuclear activities from green activities. We also include activities classified as 'Green candidate' by Trucost to the green share which are green activities outside Energy and Utility sectors. The green share is calculated as percentage of revenues coming from 'Core green' and 'Green candidate' activities. For listed sovereign assets, we include the share of our holdings from the share of low-carbon energy in primary energy use in the country energy mix, including hydropower, wind, solar, geothermal, tidal, nuclear.



Source: AXA IM, as of 31/12/2022.

Real Estate & Infrastructure Green Investments

Real Estate and Infrastructure represent a significant portion to the AXA's Green Investment initiative. In order to define assets as "Green", specific criteria must be met for an individual asset as follows:

- **Real estate**: for property assets, our definition is limited to assets with a high level of third party independent environmental certification (minimum level "Excellent" or "Gold") and a minimum Energy Performance Certificate (EPC) rating of "B" or equivalent for non-European assets;
- **Forestry**: sustainably managed forests as demonstrated by an FSC or PEFC certification;
- **CRE debt**: similar to Real estate, we consider loans securitized by single assets with a certification (minimum level "Excellent" or "Gold") to be green;
- **Infrastructure debt & equity**: The definition for infrastructure is derived from accepted and demanding market-based approaches. We rely on the CBI taxonomy to classify the infrastructure as green.

Some examples of green investments in the real asset portfolio include:

Asset Class	Example of investment
Real Estate	AXA IM Alts completed the development of a 62-storey, 278-metre skyscraper in the City of London. The flagship development was completed with an EPC rating of A+ and obtained BREEAM Excellent and WiredScore Platinum labels. In operations, the building utilises 100% of electricity generated from renewable sources and offsets 100% of natural gas usage. Adding to the positive environmental impact of the asset, 98% of construction waste was diverted from landfill. 10% of floor space is dedicated to tenant amenity and well-being.

Forest	In December 2021, AXA IM Alts acquired a 24,800 ha PEFC-certified Forestry portfolio in Australia in an area known as the Green Triangle that spans the southern border of Victoria and South Australia. Sustainable management of the investment was at the core of the onboarding strategy set up at closing. In 2022, an estimated net sequestration (natural growth less harvesting and mortality) of more than 400,000tCO_2e carbon was achieved.
Infrastructure	Spanning an offshore area of 462km² located ca. 89km off the Yorshire coast, in the UK, Hornsea Two is the world's largest offshore wind farm. The UK government has set an ambitious net zero target for 2050 – Hornsea Two is a key project in achieving the milestone objective of 40GW offshore wind capacity by 2030. Hornsea was built and is operated by Ørsted. In March 2022, with the investment support of AXA IM, AXA acquired a 18% stake in Hornsea Two. The wind farm was under construction in 2021, but when construction was completed, installed capacity reached 1,386 MW as the wind farm became fully operational in August 2022.

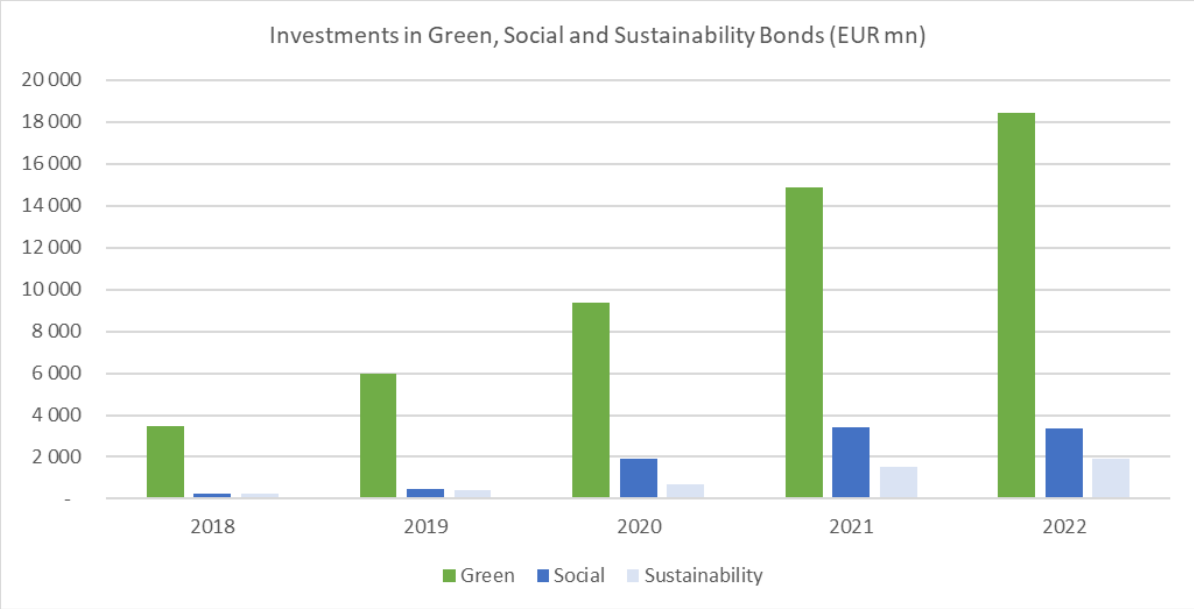
Transition Bonds

In June 2019, AXA IM called for new "Transition Bonds" to help companies go green. While green bonds have become established options for fixed income investors, AXA IM believes the asset class is at a crossroads, with the potential for the bonds to be undermined by a desire for further issuance which the sector cannot currently provide.

As such, AXA IM team called for a new type of bond that is required to help companies which are not yet green - and will therefore struggle to justify high quality and eligible for any "green taxonomy" green bonds - to instead issue debt which is tied to them becoming greener businesses.

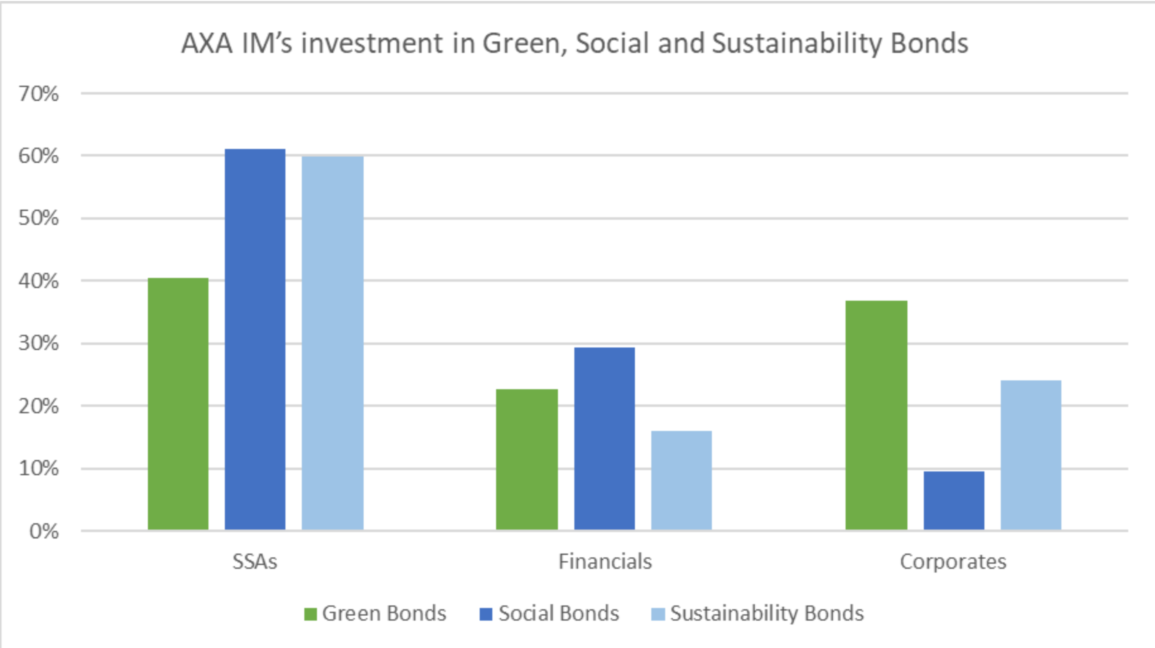
The bonds would be used by companies solely to finance transition projects, with a high level of transparency around the bonds and their use to give investors' confidence about how their capital is being deployed. These transition bonds would help investors overcome the major challenge of providing capital not just to companies which are already green, but to those which have ambitions to become so. A dedicated working group was created end 2019 at ICMA to work on this new asset class, and the first Transition Bond was issued in November 2019, and subscribed by our parent company.

Since then, the transition bond market did not grow as expected, mainly because the market lacks a clear and common definition of what transition assets are – compared to green assets notably. Sustainability-linked bonds (SLBs) seem to be the preferred type of instrument for climate transition financing. We believe that SBs and transition bonds are complementary tools to achieve transition objectives. Even if SLBs seem to have taken the lead over transition bonds when it comes to transition finance, we still believe that use-of proceeds transition bonds have their place in the broad spectrum of ESG-themed bonds.



Source: AXA IM, as of 31/12/2022.

We mainly invest in GSSBs issued by Sovereigns, Supranational and Agencies.

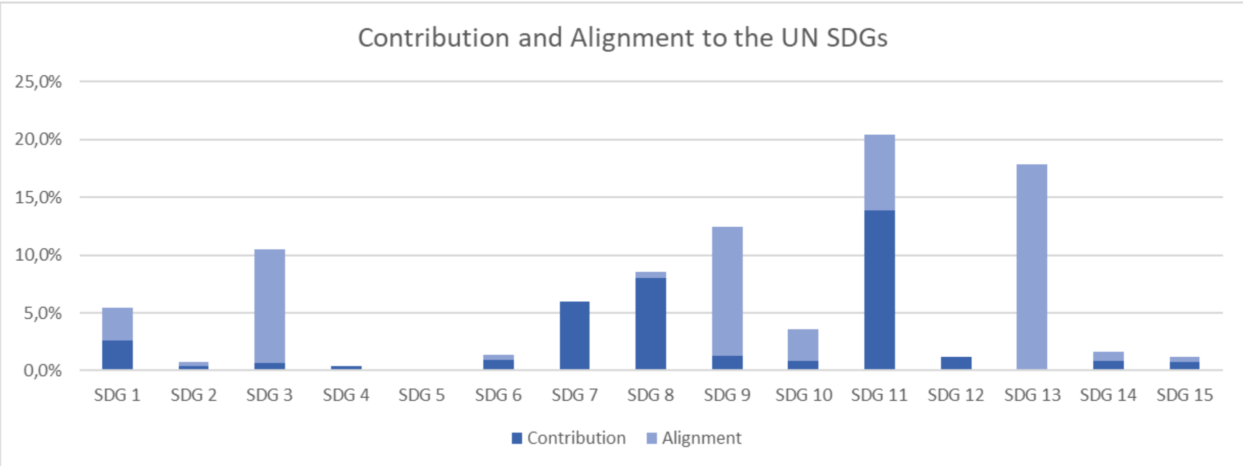


Source: AXA IM, as of 31/12/2022.

As part of our analysis of GSS bonds, we measure their contribution and their alignment to the SDGs. There is no consensus yet on the way to approach the SDGs in the GSSB market. We therefore built our own methodology and mapped the SDGs against our GSSB taxonomy. By doing this, we made a split between the green and social activities that directly contribute to some of the SDGs, and those that only align with it. Alignment is related to an indirect contribution to the SDG. Indeed, while they are not initially targeted, a project can also provide an indirect positive impact to other SDGs. For example:

- A renewable energy generation project directly contributes to SDG target 7.2 – "Increase substantially the share of renewable energy in the global energy mix" – and align with SDG target 3.9 – "Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination";
- A low-carbon transportation project directly contributes to SDG target 11.2 – "Provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport" – and align with SDG target 9.1 – "Develop quality, reliable, sustainable and resilient infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all".

The strong contribution to SDGs 7, 8 and 11 is explained by the importance of Renewable energy projects – which directly contribute to SDGs 7 and 8 -, Green buildings and Low-carbon transportation projects – which directly contribute to SDG 11 – within our green bond investments. The strong alignment with SDGs 3, 9, 11 and 13 is due to the same reasons, with Renewable energy and Low-carbon transportation projects aligning with SDGs 3, 9, 11 and 13.



Source: AXA IM, as of 31/12/2022.

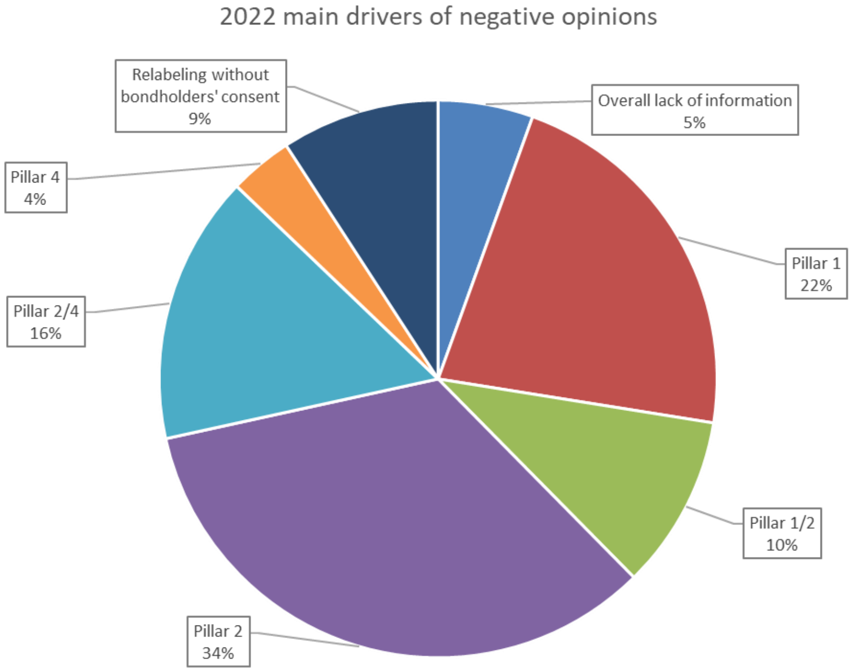
Green, Social and Sustainability Bonds (GSSB) eligible universe

Our GSSB eligible universe is made of issuances in line with our proprietary framework, on which our dedicated RI Analysts have a "Neutral" or "Positive Opinion". All GSSB that are not in line with our internal requirements are filtered out our eligible universe[81].

Sustainable Bonds type	Negative	Neutral	Positive	Total
Green Bonds	22%	43%	34%	100%
Social Bonds	9%	65%	27%	100%
Sustainability Bonds	21%	56%	23%	100%

Source: AXA IM, as of 31/12/2022.

[81] These frameworks are used in a systematic manner by our Green Bonds and Social Bonds strategies. They are used to inform the decisions of portfolio managers for other strategies without applying in a systematic manner.



Source: AXA IM, as of 31/12/2022.

In 2022 the main reasons for which we assigned negative opinions were:

- Use of proceeds that is not in line with our expectations – *e.g.*, lack of transparency, fossil-fuel related projects, development of airports;
- Issuers for which the ESG quality & strategy is not robust enough – *e.g.*, issuers under a severe controversy, banks that big fossil fuel financing providers.

Compared to previous years, we noticed improvements on factors that were drivers of negative opinions in the past, notably on commitment to provide impact reporting.

5.2 Exposure to fossil fuel activities

Our coal exposure

Our exposure to coal mining and power generation activities has been decreasing regularly since 2018 both in absolute amount invested and in share of total investments, following the exclusions of companies as part of our Climate risks policy and its regular reinforcements. This trend is in line with our objectives and our overall climate strategy to progressively reduce our exposure to coal and to exit all coal investments in OECD countries by the end of this decade, and throughout the rest of the world by 2040. This progress has been supported by the progressive strengthening of our exclusion criteria and of our efforts, through engagement and voting, to encourage companies to implement transition strategies.

While in the previous years, AXA IM calculated its coal exposure using S&P Trucost and Urgewald’s Global Coal Exit List (GCEL) databases, in 2022, the exposure is only reported using the GCEL, meaning that issuers which are exposed to coal but are below the GCEL thresholds are not captured in the metric below[82] with a change in methodology explained below. For issuers which are captured by the GCEL, like the previous years, AXA IM chose to keep the most conservative approach by not setting any threshold for considering an asset as coal exposed: if a company has 1$ revenue in coal activities, AXA IM accounts for all (100%) investments in this company for calculating its global coal exposure.

Nevertheless, as this approach leads to largely overestimate exposure to coal, starting this year, we also propose an adjusted" approach to account for coal exposure only considering the share of revenues in coal (from available data in the GCEL) of our exposed companies to account for our coal exposure, still based on our holdings in these companies.

		Exposure to companies with coal revenues (accounting entire exposure, starting from $1 of revenue)		Exposure to companies with coal revenues (adjusted from the share of revenues in coal based on GCEL data)	
		[M€]	[%]	[M€]	[%]
AXA IM Core (listed assets)	***2019***	***1,038***	***0.21%***		
	2020	***825***	***0.17%***		
	2021	***641***	***0.13%***	***219***	***0.05%***
	2022	***619***	***0.16%***	***76***	***0.02%***
Equities	*2021*	*162*	*0.19%*	*23*	*0.005%*
	2022	*169*	*0.28%*	*13*	*0.003%*
Corporate Bonds	*2021*	*1,080*	*0.58%*	*196*	*0.04%*
	2022	*450*	*0.28%*	*63*	*0.02%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***2.23%***		***0.53%***
MSCI All Country World Index (ACWI)	*2022*		*1.83%*		*0.35%*
ICE BofA Global Broad Market Corporate	*2022*		*2.39%*		*0.60%*

Source: AXA IM, Urgewald, 2022.

Our exposure to coal remains significantly lower than the ones of the main global benchmarks on which we compare ourselves.

With these elements in mind, and also noting that in early 2023, we have further strengthened our Climate risks policy regarding coal by i) putting a stricter exclusion threshold to companies generating more that 15% of revenues from thermal coal mining and/or power generation, against 30% before (and to further be reduced at 10% in OECD countries in 2026), and ii) by excluding all companies with new coal mining or power generation projects or expansion plans, we remain committed to phase-out from coal in OECD by 2030 and in the rest of the world by 2040.

[82] Please note that this metric is different from the one to be published as part of the Monitor progress tracking in September 2023 that accounts exposure from issuers both covered by the GCEL and Trucost databases. In addition, the results for previous years were not restated as such 2022 performance is not fully comparable.

Our oil & gas exposure on listed assets

As mentioned above, at the COP26, AXA IM announced the extension of its existing Climate risks policy to Oil & Gas. This new policy has been implemented in February 2022 – and resulted in divestments which are visible through the reduction of exposures in the table below. Those exclusion criteria were further reviewed in April 2023 with new criteria on oil sands (for more details, see section 6.2), not yet visible in the figures below.

To calculate the exposition, we rely on the Urgewald's Global Oil & Gas Exit List (GOGEL) database. While in the previous years, AXA IM calculated its oil & gas exposure using S&P Trucost and Urgewald's GOGEL databases, in 2022, the exposure is only reported using the GOGEL, as the very large majority of our exposure is concentrated in issuers covered by Urgewald's database. Like the previous years, AXA IM chose to keep the most conservative approach by not setting any threshold for considering an asset as exposed to oil & gas and unconventional oil & gas: if a company has 1$ revenue in oil & gas overall or unconventional activities, AXA IM accounts for all (100%) investments in this company for calculating respectively its global oil & gas and unconventional oil & gas exposures. Therefore, this approach does not measure the share of revenues from these activities on all our holding companies, but rather the evolution of the impacts of AXA IM's global investment decisions.

Nevertheless, as this approach leads to overestimate exposure to oil & gas and in particular to unconventional oil & gas, starting this year, we also propose an adjusted approach to account for unconventional oil & gas: we have estimated the share of unconventional oil & gas of the top c. 120 oil & gas companies on which we have the highest exposure, by retrieving their share of revenues and/or production in unconventional oil & gas activities directly from collected data (based on engagement or directly reported in the financial reporting). We followed the GOGEL classification of unconventional oil & gas to do so (for more details, see section 6.2).

		Exposure to companies with oil & gas revenues (accounting entire exposure, starting from $1 of revenue)	
		[M€]	[%][83]
AXA IM Core (listed assets)	***2021***	***8,014***	***1.67%***
	2022	***6,241***	***1.59%***
Equities	*2021*	*1,362*	*1.56%*
	2022	*1,690*	*2.85%*
Corporate Bonds	*2021*	*6,652*	*3.56%*
	2022	*4,551*	*2.85%*
Benchmarks *(weighted average on the 2 benchmarks below)*	***2022***		***5.80%***
MSCI All Country World Index (ACWI)	*2022*		*5.51%*
ICE BofA Global Broad Market Corporate	*2022*		*5.90%*

Source: AXA IM, Urgewald, 2022.

[83] Coverage is reported as the exposure for each asset class or group of asset classes respectively on reported scope of AuM, not on the total of AXA IM's AuM.

Using this approach, we report overall a significant decrease of our exposure to the oil & gas sector in absolute values between 2021 and 2022, coming from corporate bonds. In spite of the new implementation of our exclusion criteria on unconventional oil & gas, the strong outperformance of the energy sector in 2022 led to an increase of our overall oil & gas exposure on listed equities assets. Comparing our exposure with the reported global benchmarks, we can also note that our global oil & gas exposure as for listed corporate assets is significantly lower than the benchmarks' ones.

		Exposure to companies with unconventional oil & gas revenues (accounting entire exposure, starting from $1 of revenue)		Exposure to companies with unconventional oil & gas revenues (adjusted from the share of revenues in unconventional oil & gas based on collected data)	
		[M€]	[%][84]	[M€]	[%][85]
AXA IM Core (listed assets)	***2021***	***3,847***	***0.80%***	***1,188***	***0.25%***
	2022	***3,244***	***0.83%***	***889***	***0.23%***
Equities	*2021*	*963*	*1.10%*	*424*	*0.49%*
	2022	*1,219*	*2.05%*	*344*	*0.58%*
Corporate Bonds	*2021*	*2,884*	*1.54%*	*764*	*0.41%*
	2022	*2,025*	*1.27%*	*545*	*0.34%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***3.10%***		***1.33%***
MSCI All Country World Index (ACWI)	*2022*		*4.96%*		*2.10%*
ICE BofA Global Broad Market Corporate	*2022*		*2.43%*		*1.05%*

Source: AXA IM, Urgewald, 2022.

As for unconventional oil & gas, using both the initial or adjusted approach, we report an exposure that is significantly lower than the global benchmarks' ones. Like for oil & gas overall, the sectoral outperformance in 2022 is visible in the increased exposure to unconventional oil & gas from 2021 to 2022 on listed equities, while we report a significant decrease on corporate bonds.

Our oil & gas exposure on alternative assets

Starting 2022, we also report our fossil fuel exposure of our alternative assets, which is largely oil & gas exposure. As for real assets, we collected data directly at project level both real estate and infrastructure related assets, while for Alternative credit, Natural capital & Impact we rely on data collected from our data providers FinDox and Trucost, as well as direct questionnaires, using data reported for SFDR PAI 4 (share of investments in companies active in the fossil fuel sector). Thus, while we report no coal exposure on real assets in 2022, we are not able to estimate the respective share of coal, oil & gas for Alternative credit, Natural capital & Impact assets.

[84] *Ibid.*
[85] *Ibid.*

		Exposure to companies with fossil fuel revenues (coal, oil & gas)	
		[M€]	[%][86]
AXA IM Alts (alternative assets)	***2022***	***2,760***	***3.00%***
Real estate	*2022*	*94*	*0.29%*
Infrastructure	*2022*	*1,831*	*14.71%*
Alternative credit, Natural capital & Impact[87]	*2022*	*835*	*1.77%*

Source: AXA IM, FinDox, S&P Trucost, 2022.

Exposure on Infrastructure debt is related to the funding of oil & gas pipelines & facilities (*e.g.*, gas distribution network, service stations), while exposure on infrastructure equity only concerns one LNG project in France.

As for Alternative credit, Natural capital & Impact, due to the nature of the reported asset classes, we are unable to provide a precise analysis of the underlying reasons for reported exposures.

[86] *Ibid.*

[87] Data on worldwide holdings at end of 2022 using FinDox, Trucost and direct questionnaires

6- Our climate strategy

Conclusions of the last IPCC report

Olivier Eugène, AXA IM Head of Climate Research

The Intergovernmental Panel on Climate Change (IPCC) - created in 1988 and now counting 195 member countries - has become the main source of knowledge and analysis to understand the science behind climate change.

The latest report[88], released in March 2023 and synthesising thousands of pages of work published since 2018, is bluntly clear: climate change is the result of human activity; the damages on nature and society are increasingly visible and partially irreversible; and we collectively are not doing enough to reduce greenhouse gas emissions. As such, the IPCC concludes that, upon current policies, the world is on track for a warming greater than 2.5°C, even 3°C, significantly above the well-below 2°C goal of the 2015 Paris Agreement.

Fresh reports, from the International Energy Agency (IEA) [89] or the World Meteorological Organization (WMO)[90], based on the most recent data available, make the same observations: greenhouse gas emissions are at a record high, and coal and crude oil consumption has never been more elevated than today.

In other words, the energy transition is not happening. While renewable energy production and investments in clean energy are growing fast, coal, fossil fuels are as prevalent and ubiquitous as never before. We may be building a low carbon energy system, but it is coming on top of the existing carbon-heavy system, not in place of it.

We believe that society is bucking against the obstacle. The changes that the transition requires – in the very fabric of society and industries, in daily consumption and behaviours, in lifestyles in developed countries – are large and now stand right in front of us. Difficult decisions must be taken, and actions must follow quickly, if we want to limit the damages. The real-life impacts are not anymore in a remote future.

For those – companies, investors, countries - who have ambitions to achieve a net zero trajectory aligned with the Paris agreement, it creates many challenges and may jeopardise their goals, notably around the pace of the transition – which is slower than wished for – and the temperature pathway – as current policies "make it harder to limit warming below 2°C" according to the IPCC.

A reckoning between ambition and reality could come rapidly. A subsequent challenge will then be to recalibrate the ambition while remaining ambitious and accelerate towards net zero, because there is no other choice.

[88] IPCC AR6 Synthesis Report
[89] CO2 Emissions in 2022 - IEA
[90] State of the Global Climate 2022 - WMO

6.1 AXA IM Net zero targets

AXA IM is committed to achieving net zero emissions across our portfolios by 2050 or sooner[91], as well as playing a key role in helping our clients better understand climate change and how it may impact their portfolios and supporting them in adapting their investment decisions accordingly. As shareholders, it is also our responsibility to engage with investee companies, and this dialogue allows us to actively monitor our investments, and to ensure we maintain open channels that can enable change to the benefit of society and the planet.

Our is aligned with the frameworks proposed by the TCFD, the Institutional Investor Group on Climate Change (IIGCC) and the Paris Aligned Investment Initiative (PAII) coordinated by the IIGCC, and is evidenced by our active involvement in international initiatives such as Climate Action 100+ (CA 100+) or the Climate Bonds Initiative. It consists in:

- **Net zero targets**[92]:
  - AXA IM published its first net zero target in October 2021, as part of the first NZAM progress report[93]. This target was subsequently revised in April 2022[94], to cover **65% of all AuM**[95] at end of 2021;
  - Specific net zero targets have been set for **Corporates (Fixed Income and Listed Equity)**, **Sovereigns**, and direct **Real Estate Equity asset classes** which follow industry standards[96]. A net zero framework is currently under development for our **Infrastructure equity** investments;
  - In 2022, to support the implementation of those targets, we developed a Climate colour framework incorporating internal and external information to determine the net zero profile of assets which helps to inform investment decisions. It will continue to be enhanced over time as disclosures and transition plans from companies improve.
- **Stewardship**[97]:
  - Engagement and continued dialogue with companies and clients are crucial to influencing the net zero trajectories. Climate represents a significant portion of our shareholder engagement activities and we have developed a "**Three Strikes and You're Out**" engagement policy focused on companies which are lagging behind from a climate perspective (the so-called 'climate laggards'). Using a **focus list** of companies, this would mean that, if we do not see progress from companies on the specific objectives set at the beginning of the engagement, we will **divest after three years**;

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91 "Our road to net zero", AXA Investment Managers, https://www.axa-im.com/who-we-are/our-road-net-zero

92 AXA IM has set an initial milestone of 25% reduction by 2025 compared to 2019 at the entity-level, and will soon set a 2030 climate target, in line with our 2050 net zero target: see sections 2.2 "Climate strategy" and 4.6 "Climate dashboard" of the 2022 AXA IM Climate report.

93 See NZAM 2021 progress report, December 2021: NZAM-Progress-Report.pdf (netzeroassetmanagers.org)

94 See NZAM Initial target disclosure report, May 2022: NZAM-Initial-Target-Disclosure-Report-May-2022-1.pdf (netzeroassetmanagers.org)

95 These objectives are not currently implemented to alternative credit, private debt and other alternative asset classes (*e.g.*, derivatives).

96 The TCFD recommendations on metrics and targets, the IIGCC's Net Zero Investment Framework, the Carbon Risk Real Estate Monitor (CRREM) decarbonisation pathways for real estate assets and the Germanwatch's Climate Change Performance Index (CCPI) for sovereign assets.

97 See AXA IM's Stewardship & Engagement policies: Stewardship & Engagement | Responsible Investing | AXA IM Corporate (axa-im.com)

- As for voting, we could vote against the management, the Board Chairman and the CEO, if companies in sectors exposed to climate issues do not have a net zero emission strategy with short, medium and long-term carbon emissions reduction targets, as well as executive remuneration aligned to climate strategy objectives. Additionally, we assess the consistency of the transition plan of investee companies against their climate strategy and will ask them to report on the intermediate achievements of the objectives during Annual General Meetings;
- Discussions are also taking place with sovereign issuers on ESG topics during regular meetings with Treasuries, Central Banks and other government ministries and agencies as well as part of discussions on specific green and social bond issuances. This provides an opportunity to deep dive on sovereigns' sustainability public expenditure programs and thus better understand the ESG risks of a country.

- **Exclusions:** AXA IM exclude firms which fail to meet certain climate change criteria, focusing in particular on coal, as well as unconventional oil & gas. Our investment portfolios exclude coal-based electric power generating utilities and coal mining companies that are not credibly demonstrating a commitment to energy transition. Since early 2022, we also exclude certain companies in the unconventional oil & gas sector with a focus on tar sands, arctic and shale. In early 2023, we tightened some of our exclusion criteria regarding coal and oil sands and will commit to updated exclusion criteria later in 2023. AXA IM is committed to exit all coal investments in OECD countries by the end of this decade, and throughout the rest of the world by 2040. This commitment will be implemented over time, using exclusion, but also engagement, approaches (see hereinafter for more details).

Announcements and decisions made by policymakers in different locations to encourage the financial sector to continue to play a leading role in the transition, for instance Article 29 of the Law Energy-Climate in France, gave us more comfort on some of our points of attention in relation to assets outside of what we first deemed as eligible. We also moved from a bottom-up approach at fund level to a top-down approach at asset class level, specifically in relation to third party assets. Going forward, our aim is to continue to grow the proportion of net zero-aligned AuM as reliable methodologies become available for all asset classes.

AXA IM Net zero targets – Update at end of 2022

At end of 2022, we have €528bn ($564bn) of AuM covered by our NZ targets, *i.e.*, to be managed in line with a net zero pathway aligned with the Paris Agreement **(64% of total AuM, 76% of total AuM excl. JVs).**

The target covers:

- **100% of listed corporate (incl. listed real estate) and sovereign exposure**;
- **c. 59% of real estate AuM,** *i.e.*, all RE assets on which AXA IM Alts has direct leverage to trigger climate action at asset level[98];

and does not cover at this stage:

[98] In early 2023, the approach to account for RE assets covered by our NZ targets has been reviewed to encompass all assets on which AXA IM Alts can trigger decarbonization, *i.e.*, all assets directly managed with or without operational control. This reporting scope excludes forestry, parking, plot of land, ground lease, petrol stations, isolated unit/cell and specific cases, as well as assets under development (incl. major refurbishment) and assets with no asset management mandate.

- **Infrastructure debt and equity**: due to ongoing methodological development and data collection on carbon footprint and decarbonization pathways, with work in progress on target setting;
- **CRE debt**: due to ongoing methodological development and data collection on carbon footprint;
- **Alternative credit, Natural capital & Impact and other asset classes (*e.g.*, derivatives)**: pending appropriate methodological framework.

We faced a number of challenges in the development of our Net zero strategy, including access to reliable and tangible raw data and metrics. Although initiatives to encourage issuers to report in a more homogeneous, transparent and usable manner are multiplying, ESG data remains heterogeneous and therefore complicated to use when investing and reporting. We are dependent on the ways in which companies report on environmental data, methodologies developed by external data providers and the frequency of data refresh. Therefore, as interest in ESG grows among clients and regulators in many geographies, the need for common, clear and usable standards is a top priority for the financial industry. This forms an important area for our public policy engagement, and we actively participate in industry bodies and interact with regulators.

In addition, the interpretation of regulatory guidance needs to take into account the characteristics of our portfolios, including geographies, asset classes and sectors. At the definition stage, we also consider the operational implementation of the strategy to make sure our commitments are monitored in a robust and efficient manner.

Targets		Baseline	Progress measured in 2022	Comments
Corporates (Fixed Income and Listed Equity)				
Carbon Intensity Reduction	-25% carbon intensity reduction[99] by 2025 and -50% by 2030 compared to 2019	147.8 tCO_2e/$M revenue (end of 2019 data)	-28.1% at end of 2022 compared to 2019	*Scope 1 and 2 only due to limited data quality and availability on Scope 3: coverage of Scope 3 to be increased in the coming years, consequently with possible review of the baseline as well*
Share of AuM net zero, aligned or aligning by 2040	100% AuM in material sectors net zero, aligned or aligning by 2040	36% of corporate AuM in material sectors[100] is considered net zero, aligned or aligning (end of 2021 data)	69.3% at end of 2022	*This encompasses issuers categorised as 'Dark blue', 'Blue' and 'Light blue' according to AXA IM Climate colour framework described below (see section 6.4)[101].* *The significant progress compared to 2021 is due to a large increase i) of companies with SBTi targets (c. 41% at end of 2022) and ii) in the coverage of corporate issuers with colours in our framework (e.g. qualitative colour assessments done internally: c. 2100 at end of February 2023).*

[99] Weighted average of carbon intensity on revenue for all corporates, regardless of their asset class or fund/SMA.
[100] Material sectors are the NACE sectors considered as "high climate impact sectors" (as defined by the EU Low Carbon Benchmarks Regulation (BMR)), i.e. all sectors from sections A to H and L.
[101] AXA IM Climate colour framework is based on the Net Zero Investment Framework (NZIF) developed by the Paris Aligned Investment Initiative (PAII).

Share of AuM dedicated to climate solutions	6% by 2025	2.1% of AuM dedicated to climate solutions (end of 2019 data)	3.98% of AuM at end of 2022	*Based on AXA IM's Green Investments definition as described in this report (see section 5.1).* *The methodological approach may evolve as data coverage on EU Taxonomy alignment will increase in the coming years. We expect this will lead us to revise our target.*
Share of financed emissions net zero or aligned	50% by 2025	46% of financed emissions in material sectors are already net zero or aligned (end of 2021 data)	42.5% at end of 2022	*This corresponds to issuers categorized as 'Dark Blue' or 'Blue' in AXA IM coloring framework described below (see section 6.4).* *The reported figures exclude issuers with no carbon data (i.e., 'Grey' in our framework). As in 2022 our data coverage increased significantly (i.e. with lower grey issuers), the progress in 2022 is proportionally lower. When including 'Grey' issuers in the calculation (in the denominator), we find a slight progress in 2022 compared to 2021 with 30.5% (against 29.5% at end of 2021).*
Share of financed emissions under engagement	70% by 2025 90% by 2030	52% of financed emissions in material sectors are subject to direct or collective engagement and stewardship actions (collaborative[102] for 42% and/or individual for 38%) (end of 2021 data)	57.4% at end of 2022	*Engagement activities conducted directly by AXA IM are accounted for the two previous years of engagement, along with emissions subject to collaborative engagement even if AXA IM does not systematically participate, in line with NZIF. Collaborative engagement only includes Climate Action 100+.*
<u>Sovereigns</u>				
Beat the global benchmark	Beat the CCPI[103] score of the ICE BofA World Sovereign Bond Index at end of each year	ICE BofA World Sovereign Bond Index CCPI score: 43.4 / 100 (end of 2022 data)	52.6 / 100 (end of 2022 data)	*Progress is measured against the benchmark not against historical data, following NZIF recommended target setting guidance. Outperformance compared to the benchmark is due to concentration of sovereign bonds from countries with a high score (France in particular).*
<u>Real Estate</u>				
Carbon Intensity Reduction	-20% landlord operational carbon intensity reduction by 2025	31.3 kgCO2e/sqm (end of 2019 data)	-19% at end of 2022 compared to 2019	*Reporting scope in 2022 represents €64bn AUM, i.e., 75% of total AUM. In 2019, the KPIs covers 46% of landlord-controlled sqm. In 2022, it covers 74%. Assets are included in the KPI only if complete data is collected for all the landlord utilities. Complete data is defined as >90% coverage of data in time (12 months) and surface.*
Alignment with CRREM pathway	50% of direct real estate AuM under CRREM pathway[104] by 2025	54% AUM aligned with CRREM 1.5°C trajectory (end of 2022 data)	n/a	*Baseline based on a reference portfolio against CRREM V1 composed of 80 assets located in the 5 main EU geographies (France, Germany, UK, Italy, Belgium); To be updated by end of 2023, once CRREM V2 methodology is available on Deepki*

As committed in 2022, we report on an annual basis on progress towards these targets in this report.

[102] Collaborative Engagement used for this calculation is the Climate Action 100+ engagement list.
[103] Climate Change Performance Index
[104] Decarbonization Pathways - CRREM Global

In addition to being part of the IIGCC working group on the NZIF, AXA IM also continues to work closely with its parent company in the Net Zero Asset Owner Alliance (NZAOA) with the aim of defining how investment strategies will support the shift of the economy to a pathway consistent with the objectives of the Paris Agreement.

6.2 Exclusions: our Climate risks policy

As part of our ESG integration process, we exclude firms which fail to meet certain climate change criteria which constitutes our Climate risks policy[105].

For many years, we have excluded electric power generating utilities and mining companies that are not credibly demonstrating a commitment to energy transition. We initially focused our efforts on coal by committing to exit all coal investments in OECD countries by the end of this decade, and throughout the rest of the world by 2040. Since late 2021, we also added exclusions in the unconventional oil & gas sector[106]. These new criteria have been implemented in February 2022:

- A new ban on companies deriving more than **10%** of their oil & gas production from the Arctic, as defined by the Arctic Monitoring and Assessment Programme (AMAP), or representing more than **5%** of the global production from the region;
- A new ban on companies deriving more than **30%** of their oil & gas production from fracking and producing less than 100 000 barrels of oil equivalent per day;
- The oil sands exclusion was reinforced by adding an exclusion for companies producing more than **5%** of the **global** oil sands production.

More recently, in April 2023, we have tightened multiple exclusion criteria on coal, oil & gas:

- On coal:
    - Putting a stricter exclusion threshold to companies generating **more that 15% of revenues from thermal coal mining and/or power generation**, against 30% before; threshold to be reduced at **10% in OECD countries in 2026** as part of our commitment to exit from coal by 2030 in OECD countries;
    - Excluding all companies with **new coal mining or power generation projects** or **expansion plans**;
- On oil sands: putting a stricter exclusion threshold to companies generating **more than 5% of revenues from oil sands production** only (not transportation, *i.e.,* pipelines), against 20% before.

To build our coal exclusion list, we use the Global Coal Exit List (GCEL) produced by German NGO Urgewald. The GCEL includes companies that generate more than 20% of their revenues from coal, or utilities where the share of coal power generation is 20% or more, or companies producing more than 10 million tons of coal, or companies with more than 5GW of installed coal-fired power capacity generation. Urgewald also includes companies with coal expansion projects in mining, power generation and infrastructure. AXA IM has established its own thresholds, as described in our Climate risk policy and overlays them on the GCEL.

To build our oil & gas exclusion list, applicable from February 2022, we use the Global Oil & Gas Exit List (GOGEL), also produced by Urgewald. The GOGEL provides information on companies operating in the

[105] Sustainability Policies and Reports | AXA IM Corporate (axa-im.com)

[106] AXA IM further strengthens its climate actions to accelerate its contribution to a low-carbon world | AXA IM Corporate (axa-im.com)

oil & gas industry. It notably provides the names of companies involved in the upstream part of the value chain, *i.e.*, the production of oil & gas, without a size threshold. A detailed breakdown of unconventional oil & gas is also provided. In the GOGEL, unconventional oil & gas are classified as such: fracking (in practice, oil & gas from shale and tight reservoirs), tar sands, coalbed methane, extra heavy oil, ultra-deepwater (UDW), and Arctic. As described in our Climate risks policy, AXA IM has chosen to focus on fracking, tar sands, and the Arctic categories. We believe they present specific features that warrant a greater attention. We have established our own thresholds for those three categories to build our oil & gas exclusion.

On December 1st of 2022, **87%** of all AXA IM third-party assets (*i.e.*, traditional and alternative assets) applies the Climate risks policy (see dedicated section on Exclusion policies for more details).

6.3 Stewardship

We have significantly enhanced our Climate risks policy at the beginning of 2022 in order to provide further details on our engagement asks with regards to the coal, oil & gas sectors, aiming to cover their strategy and target setting, transparency including on capital expenditures (CapEx) as well as Governance and lobbying. In early 2023, we also specified our expectations regarding Scope 3 measurements, by asking companies to integrate their value chain – upstream and especially downstream – in their climate strategy, a necessary step to achieve net zero for Scope 3 emissions.

The challenge of reaching 1.5°C for assets managers

Olivier Eugène, AXA IM Head of Climate Research

“Global GHG[107] emissions are projected to peak between 2020 and at the latest before 2025 in global modelled pathways that limit warming to 1.5°C (>50%) with no or limited overshoot and in those that limit warming to 2°C (>67%) and assume immediate action. In both types of modelled pathways, rapid and deep GHG emissions reductions follow throughout 2030, 2040 and 2050 (high confidence). Without a strengthening of policies beyond those that are implemented by the end of 2020, GHG emissions are projected to rise beyond 2025, leading to a median global warming of 3.2°C by 2100”[108].

Our apologies as we start with a long and maybe obscure quote from the latest International Panel on Climate Change (IPCC) report, but it sets the scene. In particular, it highlights the rising gap between what the scientific consensus says and what human societies do when it comes to climate change and its impacts.

What the IPCC is really pointing at is that GHG emissions are not expected to decline at a pace consistent with a 1.5°C scenario, and possibly even not 2°C. Indeed, GHG emissions have continued to increase over the past decade and CO_2 emissions were most likely at an historical record high in 2021[109].

At AXA IM, we are engaged to be a net zero asset manager and to align our investments with the goal of the Paris agreement. However, achieving any temperature outcome is a binary situation: it

[107] Greenhouse gas
[108] IPCC_AR6_WGIII_SummaryForPolicymakers.pdf
[109] Global Energy Review: CO_2 Emissions in 2021

succeeds, or it does not, and it can only be a collective endeavour. Any climate stakeholder – be it a corporation, an investor, a citizen, or a country - cannot on its own be aligned to, for instance, a 1.5°C pathway, but it can contribute to it.

As such, the IPCC warning that the world is not on track with a pathway where the increase in temperature is limited to 1.5°C – and that the window to achieve this goal is closing fast – is also a warning to investors. Building investment strategies around 1.5°C may unfortunately become increasingly challenging. While it is essential to maintain a strong level of ambition, a reckoning could be unavoidable if and when the cold reality clashes with stated objectives.

6.4 Implementing our Net zero targets

AXA IM Core specific approach

Recent years have seen growing interest in Paris-aligned/net zero investing on traditional asset classes and listed markets. New initiatives and frameworks have emerged to provide a foundation for new climate-aware investment approaches, and the industry has voiced greater commitment to incorporating these objectives into their investment decision processes. We are optimistic in the ability of our industry to benefit from the abundance of tools and data. We are committed to assessing and integrating climate models, but also in engaging with data providers and industry groups to refine these methodologies. Investment managers are beginning to move from commitment to action and they must make important decisions about what tools to use and how to deploy them. At AXA IM, we propose to start from a set of principles guiding our decision-making and framing the selection of tools and KPIs to achieve portfolio alignment. We believe that by following these principles we can most effectively navigate the evolving landscape and constructively tackle the challenge of aligning our strategies with the Paris Agreement.

AXA IM Climate colour framework

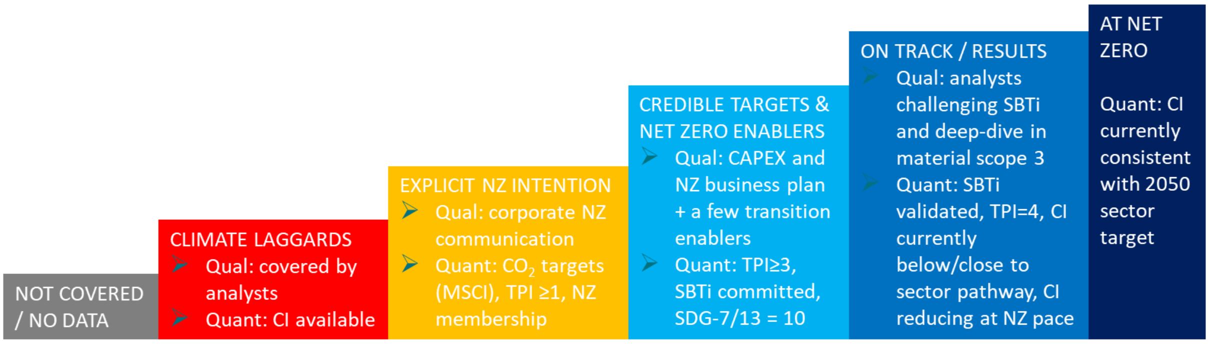
Corporates that are engaged in a robust decarbonization pathway are positively contributing to environmental sustainability in a way that is consistent with a Net zero emissions future. In that perspective and to support the implementation of its Net zero commitment, AXA IM has developed in 2021 a climate colour framework inspired by the NZIF Guidance on Target setting[110]. This framework is aimed to be enriched in 2023, be progressively ramped-up over time for a future implementation and be used to inform portfolio managers' investment managers, with binding criteria for net zero investment strategies at a fund level (see below). It is also a key pillar of the implementation of our Net zero targets.

Our approach aims at assessing the maturity of the climate strategies of corporates, using quantitative information on issuers' climate strategy (incl. SBTi, TPI, CI trend, etc.) combined with qualitative analysis to confirm the credibility of the strategies in particular. Based on this analysis, issuers are categorized in the following "colours":

- Corporates that are already well positioned to reach carbon neutrality with carbon intensity currently consistent with their 2050 sector target are "Dark Blue";

[110] NZIF_IIGCC-Target-Setting-Guidance.pdf

- Corporates that are on track compared to their sector. They have either carbon targets approved by Science Based Target Initiative (SBTI) or are well rated per Transition Pathway Initiative (TPI) or attaining carbon intensity close to sector's decarbonization pathway, or their carbon intensity is reducing in line with net zero pace. They are categorized as "Blue";
- Corporates that have credible decarbonization targets and/ or are SBTI committed are categorized as "Light Blue". Climate Solutions providers are also categorized as "Light Blue";
- Corporates which have set an explicit net zero intention but have not provided sufficient and credible information on trajectory are categorized as "Orange"; and
- Corporates which have not set targets are categorized at "Red";
- Corporates not covered or with no carbon data at "Grey".



Source: AXA IM Climate colour framework, based on PAII NZIF, 2021. For illustrative purpose only.

AXA IM Alts approach

As one of the world's largest real assets managers, we believe that the decisions we make when investing can do much more than generate financial returns. **We can contribute to a sustainable future** by minimizing the environmental impact of our assets, protecting them against the effects of climate change and working collaboratively to unleash the transformative potential of our ingenuity.

The built environment contributes significantly to the world's annual carbon emissions, giving us the opportunity to make an important contribution to decarbonization. We are actively investing towards a low carbon future, be it through the creation of infrastructure for renewable energy, developing best-in-class real estate, or regenerating and transforming existing building stock worthy of a place in the low carbon future.

At AXA IM Alts we see growing interest in solutions which invest in innovation. From natural capital and nature-based solutions to clean energy generation and usage, to reducing reliance on carbon intensive sources of energy that are damaging to the environment.

Internal programme to accelerate our contribution to decarbonization

In 2022, we decided to accelerate on our decarbonization journey, launching an internal programme, aiming at leveraging the potential of our different investment platforms to generate significant impact. This programme will leverage on three main complementary pillars:

- **Reducing carbon emissions**: real estate generates around 39% of global GHG emissions. The aim is to actively reduce the emissions generated by over 2400 buildings managed globally, through energy use optimization, building refurbishment, switch to decarbonized heat or fuel sources, and continue to engage with our tenants to jointly address the performance of underlying buildings;

- **Avoiding carbon emissions**: we aim at investing in low carbon infrastructure such as renewable energy generation and electricity grids, green transportation and decarbonized heating and cooling systems;
- **Sequestering carbon**: timber consumption will be multiplied by 2.7 by 2050. Forestry plays a key in sequestrating carbon and is expected to allow engineered timber to replace carbon-intensive and steel in building consumption. Through our Natural Capital investments, our pathway is to optimize carbon sequestration while improving biodiversity through our forestry portfolio (>80 000 ha) and to build in timber and invest in new timer product firms.

On defining decarbonization pathways and reduction targets, first focus has been placed on the Real Estate Equity Platform, considering our leading position in Europe and the decarbonization potential of this asset class.

As a start, we worked on developing a portfolio level decarbonization pathway based on a representative European reference portfolio. The intention was to understand the decarbonization potential within our real estate portfolios and associated financial impacts, and to ensure that we can make credible and deliverable commitments which are aligned with Paris Agreement target.

Approach

From March to November 2022, AXA IM has built decarbonization pathways on a sample of 80 assets (~€10bn of AuM), representative of its EU portfolios (excluding Switzerland). Assets selected cover AXA IM 5 main geographies (France, Germany, UK, Italy and Belgium) and most representative asset class (residential, office, logistic, retail, hotel and mix-use).

2021 whole building carbon baseline were drawn from actual (and estimated) final energy consumption at asset level, converted to carbon emissions based on local GHG emission factors. Estimates were used when partial data was available, specifically covering 20% of assets for tenant emission and 16% of assets for both tenant and landlord emissions. Estimates were produced, based on BEES benchmark and adjusted for tenant business model use to increase the representation accuracy. Other benchmarks were considered during the pre-modelling phase and disregarded based on insufficient coverage, geographies or asset classes.

Asset level modelling

The technical potential of the portfolio for decarbonization has been based on an asset-by-asset review of specific elements (including level of insulation and heat source) to determine the broad decarbonization cohort (light retrofit, heat retrofit or heavy (whole building) retrofit) with the timing of the various interventions linked to the (majority) tenant lease break.

Using market analysis and benchmarking, several choices and assumptions were made regarding emission factors, grid decarbonization, cost of intervention, frequency of retrofits, etc. Individual interviews were conducted with the asset managers of each asset in scope, to refine asset level data collected, assess modelled reduction and compare with underlying assets plans. In parallel, research papers were prepared on the impact of decarbonization on the asset value in the residential, office and logistic sectors, to further understand the financial impact of such initiatives.

For each asset, an individual theoretical pathway was built depending on the type of intervention corresponding to the asset's characteristics. The pathway describes the decarbonization potential of the assets, expected year of retrofits and PV generation capacity. Several of the underlying assets had already progressed in their assessments of decarbonization pathways (notably UK and Italy) and as a result of the individual assessments, the project team was able to model the 'current trajectory' of many assets based on their underlying business plans. This enabled the team to assess the quantum of additional capex beyond underlying business plans necessary to deliver the decarbonization pathways.

For each asset, the modelled pathway was compared to the applicable CRREM trajectory and current asset decarbonization trajectory based on existing action plans.

Output & overview

Those 80 assets pathways were then consolidated to provide a view at:

- maximum decarbonization potential by 2050, associated capex and expected impact by intervention (operational, PV, HQR, grid decarbonization, etc.);
- a further segmentation of risk and early visibility of proportion of assets aligned with CRREM 1.5C pathways;
- base case scenario, *i.e.*, current decarbonization trend based on actions already planned in the assets

Three additional scenarios were analyzed, by applying technical and financial performance thresholds: financially viable, carbon focused and business returns. It clearly demonstrated that focusing on a smaller subset of assets could generate most of the reduction impact, while requiring more reasonable investment compared to asset value.

While current decarbonization actions engaged would lead to a ~60% reduction potential by 2050 (without allowing for churn), accelerator scenarios, could deliver up to 8%-20% further reduction depending on the scenario chosen. These reductions are solely through works within landlord control, and do not consider or embed any material change in tenant performance. In addition, the reductions exclude any benefit of procured (high quality) renewable energy either by landlord (estimated at an additional c. 5%-6% reduction) or tenant. In practice, many assets operate on green energy, and this should be considered in future representations.

Key learnings and implications for our decarbonization strategy

Performing this deep research work in such a short period of time provided AXA IM Management Board, Responsible Investment team and other teams involved (asset management, transaction, development) a much greater understanding of the carbon challenges within its portfolio: the risks, the capabilities and the ability to act.

The portfolio is currently quite robust with approximately 60% AUM aligned with CRREM 1.5 trajectory[111] based on 2021 data and more than 50% AUM aligned until 2035 under current trend, utilizing the 2021 CRREM trajectories. However, acceleration is needed to keep pace with our commitment and shifting market expectations over time.

Deploying currently existing technical solutions at scale will generate sufficient impact over the coming decade. However, achieving net zero on whole building over the long run will require testing and supporting innovation, as well as further engaging with both tenants and investors.

[111] CREEM V1

Modelling (*e.g.*, interventions, costs) delivered accurate results on most of the assets but is less certain or robust when dealing with very specific or complex assets, which require manual inputs to acknowledge their particularities. Modelling would not have been possible without complementary data collection, AM interviews and estimates, and consultant support due to industry data availability and accuracy challenges.

Next steps

The definition of the overall decarbonization pathway of the Alts Real Estate portfolio is based on the results of the pathway modelling and its comparison to CRREM.

While the model has given visibility of the principal actions which need to be undertaken at asset level to deliver a decarbonization pathway, it is not intended to roll it out across the entire portfolio. A more operational approach will be retained, using available information to assess risks on our portfolios. In 2022, energy audits were performed on all European assets with an EPC E, F or G to get detailed analysis on decarbonization potential. In 2023, this technical analysis will be used to inform the assets strategy and retain the most relevant pathway for each asset.

In 2023 and beyond, this program will be expanded to other Alternatives platforms, such as debt and infrastructure, to strengthen our understanding of their decarbonization potential and continue investing towards a low-carbon future.

6.5 Climate forward-looking metrics

Over the past years, the financial industry has made further progress in illustrating materiality of climate change and measuring alignment of investments. In the past two years, some emblematic initiatives have come up with concrete frameworks. These included the publication of the 1.5°C Implementation Guidance of NZIF[112], the United Nations convened NZAOA and the SBTi's framework for financial institutions. Investors are now turning towards new types of analyses and corresponding metrics which present a more insightful response into what it means to be a "Paris-aligned" investor.

In that context, AXA IM has explored forward-looking metrics over the past years. In 2022, and through its collaboration with MSCI, Beyond Ratings and Iceberg Data Lab (IDL), we have continued to investigate innovative forward-looking metrics to measure exposure of our investments to transition and physical risks and the global warming potential of our investments.

Climate scenario analysis: Introduction to global warming scenarios and possible climate futures

On August 9, 2021, the IPCC released the first instalment of its Sixth Assessment Report on the physical science basis of climate change. One statement is stark and clear: "It is unequivocal that human influence has warmed the atmosphere, ocean and land[113]. The report precises that the best estimate for of human-induced warming is 1.07°C above pre-industrial levels, with greater warming on land than in the oceans. The IPCC also adds that "global surface temperature will continue to increase until at

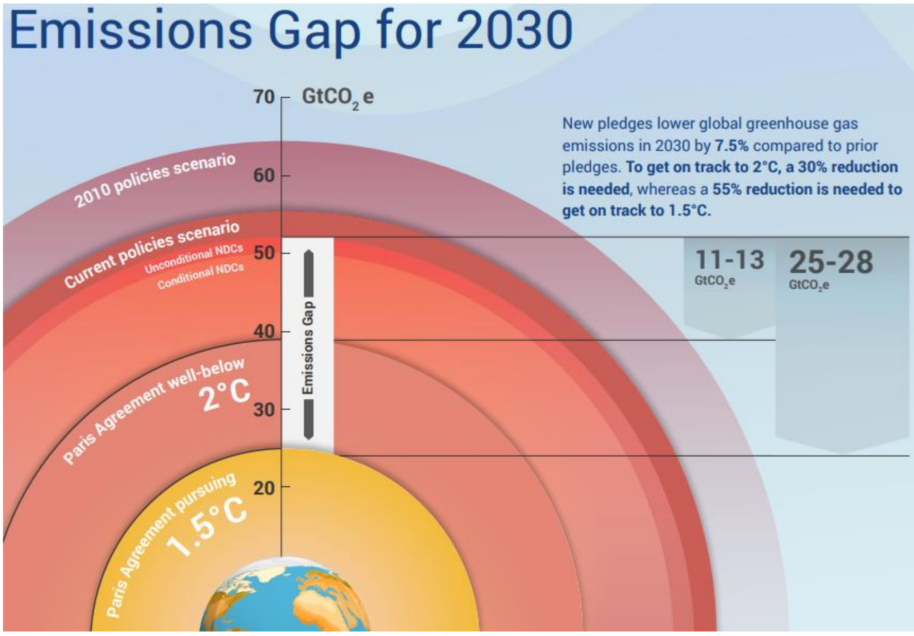
[112] See "*Net Zero Investment Framework 1.5°C Implementation Guide*", Paris Aligned Investment, 2021. https://www.parisalignedinvestment.org/media/2021/03/PAII-Net-Zero-Investment-Framework_Implementation-Guide.pdf
[113] IPCC 6th Assessment Report

least mid-century" and that "global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO_2 and the other greenhouse gas emissions occur in the coming decades". To maintain the increase in temperature to below 2°C, the world's emissions need to decline at a rapid pace and attain net zero between 2050 and 2070. Achieving Carbon neutrality or "net zero" emissions require to strike a balance between anthropogenic emissions by sources and removals by sinks. To reach this stage, the world will have phased out most CO_2 emissions and will be employing methods that capture and store the remaining low levels of emissions ("offsetting") as well as the CO_2 in the atmosphere from the build-up of historical emissions. Green technologies are instrumental in achieving this decarbonization pathway.

The Paris Agreement binds parties to limit warming well below 2°C compared to pre-industrial levels by 2100. Most of the current National Determined Contributions ("NDCs") have 2025 to 2030 as their stated compliance period. NDCs expressed to 2050 are scaled back to 2030 in our modelling. The 2021 UNEP Gap Report, published ahead of the COP26 held in Glasgow in November 2021, estimates that implementing the updated unconditional NDCs would lead to a mean global temperature of around 2.7°C. If emissions continue to rise as they have in the past, the IPCC expects temperatures to increase by at least 3°C by 2010, and possibly by more than 4°C.

While countries need to raise the bar of their current carbon pledges, the IPCC 1.5°C report published in 2018 also highlighted nations would have to target a 1.5°C scenario rather than a 2°C scenario to avoid unprecedent damages for biodiversity, human beings and the economy[114]. This requires reducing carbon emissions by 45% by 2030 compared to 2010 levels and achieving carbon neutrality by 2050.

In addition, the TCFD recommendations specifically state that organizations consider a set of scenarios, including a "2°C or lower" scenario, in reference to the 2015 Paris Agreement since they will have different implications on investments.



Gap between Paris agreement country pledges, 2° and 1.5°C scenarios. Sources: UNEP Emissions Gap Report 2021, AXA IM.

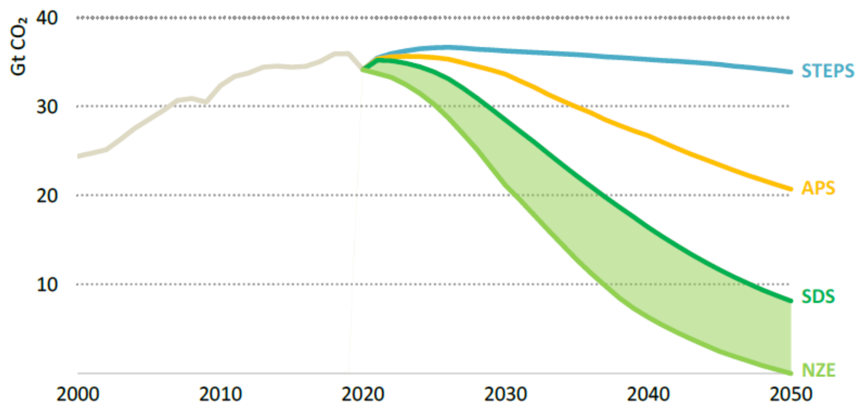
[114] This was reiterated in the report "Climate Change 2022: Impacts, Adaptation and Vulnerability" published in February 2022 by the IPCC.

Climate change mitigation scenarios ("climate scenarios") are forecasts of the future based on projected variables and probability of occurrence. These variables include greenhouse gas emissions, cost and assimilation of technology, economic growth, demographics, development and use of CCS (Carbon Capture & Storage). They could lead to certain predicted outcomes such as how much temperatures will rise and what this level of global warming will result in for the environment, society and the economy.

Most "below 2°C" scenarios are based on a rapid and radical shift in the energy supply and demand picture. On the supply side, scenarios are based on a decrease in fossil fuels, with coal and oil being squeezed out while gas remains in use. Renewable energy sources such as wind, solar and biomass, increase significantly, and nuclear remains a part of the future energy mix.

In well-known climate scenarios such as the International Energy Agency (IEA) ones, efforts to limit greenhouse gas emissions are derived mainly from technical and technological energy efficiency measures. While they say little on social conditions, relative costs and technological developments to achieve such energy mix shift, IEAs scenarios are well recognized and widely used especially by companies in most sectors at stake with a strong climate impact.

The IEA broke new ground by releasing its Net Zero by 2050 scenario in May 2021. This report presents a path to reduce to net zero emissions from the energy sector while limiting the increase in temperature to 1.5°C. This scenario has been integrated in the IEA's latest World Energy Outlook. The IEA reaches conclusions very similar to the ones the IPCC reached in its 2018 1.5°C report, with a required reduction of CO_2 emissions from energy and industrial processes of nearly 40% between 2020 and 2030. In addition, the IEA calls for a 75% reduction in methane emissions from fossil fuel use over the same time frame. The IEA is very precise and highlights the different pathways for advanced and emerging economies, the investments needed, and the overall necessity of global coordination and social acceptance.



IEA, Climate scenarios: CO_2 emissions from the Energy sector and industrial processes. STEPS: Stated Policy Scenario; APS: Announced Pledged Scenario; SDS: Sustainable Development Scenario; NZE: Net Zero Emissions by 2050 Scenario. Source: IEA World Energy Outlook, 2021.

Quantifying the global warming potential of our investments: Implied temperature rise (ITR) metric

While these forward-looking metrics are essential and relevant for climate objectives, significant challenges remain as the model is complex.

ITR methodology for Corporate Debt and Equity

Since 2021, AXA IM is using the MSCI "Implied Temperature Rise" (ITR) metric to assess how AXA IM's investment portfolios on corporate bonds and listed equities align with global temperature targets.

The ITR model estimates the global temperature increase by 2100 if the entire economy were to exceed or fall short of its carbon budget in the same way as a specific company or portfolio. The metric, expressed in °C, is therefore a forward-looking and extrapolation-based one.

The ITR methodology is currently only applicable to corporate assets and is still under development.

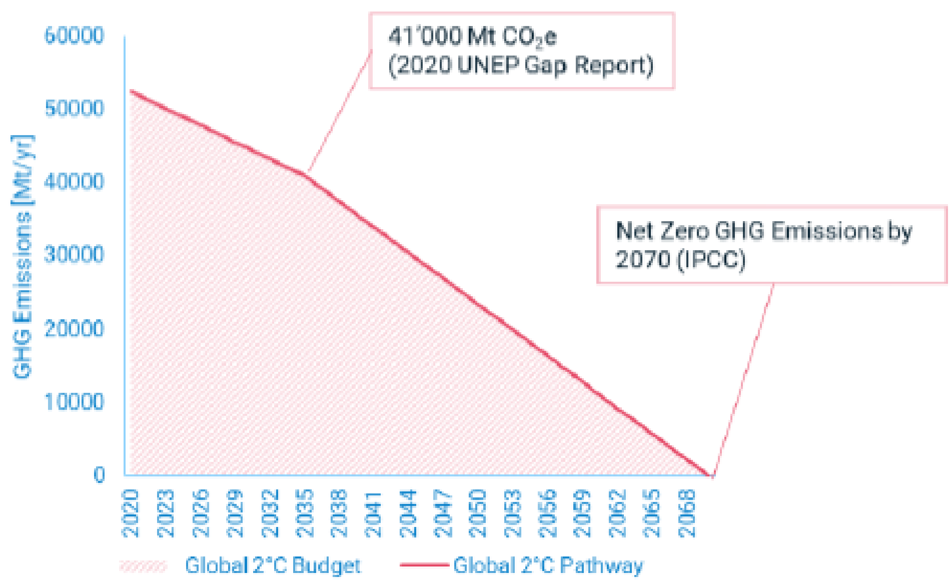
+2°C carbon budget and pathways

- Overview

The Global Carbon Budget represents the total amount of greenhouse gas emissions that mankind can emit to limit global warming to +2°C, from the model's start year up to 2070. It is calculated by using data from the Intergovernmental Panel on Climate Change (IPCC).

The Global Carbon Pathway represents the global forward-looking annual emissions until 2070 to comply with a +2°C warming. This pathway is constructed by MSCI ESG Research by combining each country's Nationally Determined Contribution (NDC), global budget considerations with global +2°C emission levels defined in the 2020 UNEP Gap report and a zero-emission assumption by 2070 to limit warming to +2°C from IPCC.

Exhibit 3. Global 2°C pathway based on a net-zero assumption by 2070 and global emission levels as defined in the 2020 UNEP Gap report.



Source: MSCI ESG Research

MSCI distributes carbon budgets and pathways for individual companies through a top-down method that uses revenue as a way to fairly allocate the budget among all companies in the MSCI database. More information about this process for each scope can be found in what follows.

- Scope 1 specificities

Scope 1 represents the direct emissions produced by a company from its own or controlled sources.

The company's Scope 1 budget and pathway are determined by analyzing its activity breakdown per emissions sector and country. Of course, each company’s pathway is aligned with the +2°C global warming target. It is determined by using data from the NDCs and the +2°C emissions levels as reported in the UNEP Gap Report.

This approach allows for differentiation based on sector and region and takes into consideration that not all sectors and countries have the same ability to reduce their Scope 1 carbon emissions.

- Scope 2 specificities

Scope 2 refers to indirect emissions that come from the generation of purchased electricity, steam, heating, and cooling consumed by a company.

The company's Scope 2 pathway is determined based on total revenue and primary Global Industry Classification Standard (GICS) Industry Group. This industry-specific approach allows for greater differentiation between companies within an industry, thus identifying industry leaders and laggards.

The global average carbon intensity of each GICS sector is taken as the company’s pathway starting point.

The company’s Scope 2 budget is calculated in a similar way as the Scope 1 budget, by multiplying the company's revenue breakdown by the Scope 2 intensity of its primary GICS industry.

- Scope 3 specificities

Scope 3 refers to all other indirect emissions that occur in a company's value chain.

The global Scope 3 pathway corresponds to a linear decrease from the model’s start year to 2070. This means that all companies' Scope 3 emissions are benchmarked against a slope defined by a single carbon-intensity starting point, which is the market cap-weighted average Scope 3 emissions intensity estimates of the MSCI ACWI IMI universe, and a zero-valued end point in 2070.

This approach is taken because the companies in MSCI's database are large multinational companies, and their supply chains and sales are global. There is therefore no need to infer country or sector-specific pathways here.

Additionally, the single Scope 3 benchmark creates an intuitive bias against the most emitting sectors, which are compared to the same benchmark as the least emitting sectors. Indeed, it becomes harder for a company in a heavily emitting sector to achieve a good temperature score.

This approach assumes that all companies need to meet the same carbon intensity pathway in their upstream and downstream value chain, and therefore companies with particularly carbon-intensive value chains will have to decarbonize at a substantially higher rate than companies with a less carbon-intensive value chain.

Projected carbon emissions

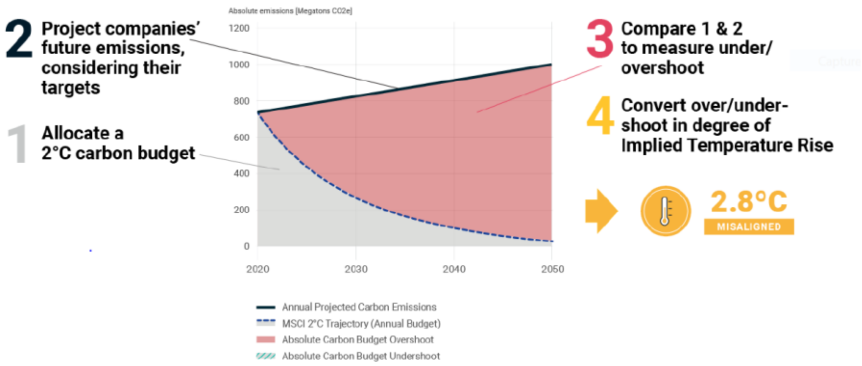
The ITR model estimates companies' future emissions through 2070 by considering their current level of emissions and their reported emissions-reduction targets. The specifics of how the model handles current company carbon emissions are as follows:

- Scopes 1 & 2: The reported emissions are used when available, and estimated emissions otherwise;
- Scope 3: The ITR model uses estimated emissions from MSCI instead of relying on company-reported emissions due to inconsistencies in company reporting.

The ITR model assumes that the emissions-reduction targets reported by companies will be achieved. However, this may not always be accurate as some targets may be more credible than others. To address this, the 2023 update includes a credibility score that is taken into account when using company target values. In the absence of reduction targets, the model assumes a 1%-per-year emissions growth to reflect a "business-as-usual" scenario.

Carbon budget overshoot

The difference between the company's projected emissions (Section 1.2) and its carbon budget (Section 1.1) until 2070 is known as the Absolute Carbon Budget Overshoot. It is important to note that this value is limited to a level that corresponds to an ITR of +10°C.



Source: MSCI ESG Research.

The model also calculates this overshoot as a percentage relative to the company's overall carbon budget. It is known as the Relative Carbon Budget Overshoot.

It is important to note that the computed relative overshoot may not always be positive. A negative value of the relative overshoot indicates that the emissions are actually lower than the carbon budget.

ITR methodological approach

- **Company-level ITR**

ITR is now computed by extrapolating a company's carbon overshoot into the global economy overshooting its own carbon budget by the same amount. The model uses the global carbon budget of +2°C and the Transient Climate Response to Cumulative Emissions of Carbon Dioxide (TCRE) factor to estimate the additional warming caused by the overshoot. The TCRE factor is expressed in °C / $GtCO_{2,eq}$. This value is fixed for a specific climate scenario and establishes the ratio between the absolute total additional emissions from a +2°C baseline and the corresponding incremental increase in global temperature.

ITR is both floored and capped, as follows:

- The floor of +1.3°C represents the additional warming that is already locked in due to past emissions and the lack of globally scalable carbon removal technology.
- The cap of +10°C allows for portfolio temperatures to reflect high temperatures and optimize allocation in the presence of heavily emitting companies. It is worth mentioning that according

to the IPCC and other leading climate scientists, the worst-case scenario for global warming is between +5°C and +6°C. The ITR model's upper threshold of +10°C is set to differentiate heavily emitting companies from less emitting ones.

Aside from the floor and cap considerations, ITR formula is, at company level:

$$Company\ ITR = 2°C + Relative\ Carbon\ Budget\ Overshoot \times Global\ Budget \times TCRE\ factor$$

A calculation example is shown below:

Exhibit 21. Implied Temperature Rise – calculation example for fictional company

Timestep	Aggregated
Relative Carbon Budget Overshoot (company-level)	162%
Global 2°C Carbon Budget	1,491 Gt CO_2e
TCRE Factor	0.000545°C/Gt CO2e
Implied Temperature Rise	3.3°C (2°C + 1,491 x 162% x 0.000545)

Source: MSCI ESG Research

- ## Portfolio-level ITR

When determining the temperature increase related to a portfolio, a share of the emissions and carbon budgets of the portfolio companies must be allocated based on the market value of each position i. This is done by introducing the ownership ratio, which is the outstanding amount invested divided by the Enterprise Value Including Cash (EVIC):

$$Ownership_i = \frac{weight_i}{EVIC_i} \times Portfolio\ Value$$

It should be noted that this ratio can vary due to market fluctuations and portfolio management decisions.

Then, the relative portfolio carbon budget overshoot is calculated by summing up the ownership ratio multiplied by the difference between the projected emissions and the carbon budget for each company:

$$Rel.Portf.Carb.Budg.Overshoot = \frac{\sum Ownership_i(Cum.\ Proj.\ Em._i - Cum.\ Carb.Budget_i)}{\sum Ownership_i \times Cum.\ Carb.Budget_i}$$

As in the company-level computation, this relative overshoot may be negative, which corresponds to an actual undershoot.

The portfolio-level ITR is then calculated in a similar way as it is for an individual company, by adding the relative portfolio carbon budget overshoot multiplied by the Total Carbon Budget for the +2°C pathway, to the +2°C temperature increase baseline:

$$Portfolio\ ITR = 2°C + Rel.Portf.Carb.Budg.Overshoot \times TCRE \times Global\ Budget$$

It is important to keep in mind that the Imposed Temperature Rise (ITR) for a portfolio is not a straightforward calculation. It is not simply the average of the ITR for each individual company within the portfolio. This is because the calculation is non-linear and takes into account factors such as ownership ratios and relative portfolio overshoot. Though ITR can be applied to specific scopes or industry sectors, the overall ITR for the portfolio will not be the average of the ITR for each scope or industry sector.

ITR update frequencies from MSCI

MSCI's ITR scores are regularly updated to reflect new data as it becomes available. For example, if a company sets a new decarbonization target, MSCI will take that into account and recalculate the company's projected emissions, which will change the company's Implied Temperature Rise score. MSCI updates targets inputs biweekly and other data inputs quarterly. However, the entire process from when primary data becomes available (such as a new target being announced) to when the ITR integration is finalized can take more time. A summary of the regular update cycle for key data points is provided below, with indicative timelines.

Exhibit 27. Implied Temperature Rise data update cycles

	First step: Regular ITR data update cycle	Second step: Computation and quality assurance	Total update lag
Climate Target Data	14 days	Up to 15 days	Up to 1 month
Reported Emission data (Scopes 1 and 2)	3 months	Up to 1 month	Up to 4 months
Revenue/ Segment breakdown/ Geo breakdown	3 months	Up to 1 month	Up to 4 months
GICS	3 months	Up to 1 month	Up to 5 months
Estimated Scope 3 Footprints	3 months	Up to 1 month	Up to 4 months

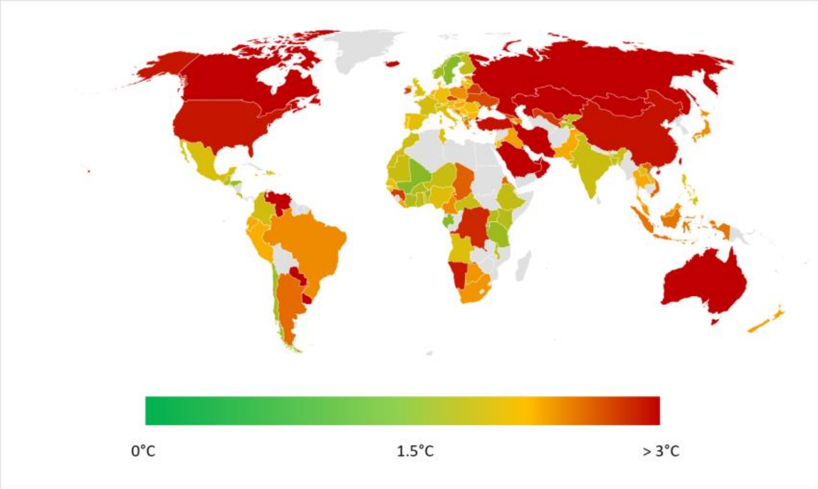
Source: MSCI ESG Research.

ITR for Sovereign assets

AXA IM leverages the CLAIM model developed by Beyond Ratings to assess the temperature of AXA IM's investment portfolios on sovereign assets. This model uses the national carbon pledges made by Governments towards the Paris Agreement's "carbon budget" to express theoretical temperature of sovereign assets. Beyond Ratings has developed this approach inferring 2°C compliant national carbon budgets by relying on the so-called "Kaya relationship" between GHGH emissions, GDP growth, demography, energy efficiency and carbon intensity.

National Determined Contributions (NDCs) that have been expressed in the Paris Agreement and updated during the COP conferences are used to build a homogeneous allocation of GHG emissions reduction commitments by countries by 2030. Using theoretical linear relationship between carbon emissions and temperature rise, Beyond Ratings translate national carbon commitment intensities by 2030 into theorical temperature rise.

During the latest COP, NDCs have been released and updated by the participants (112 updated NDCs including: Australia, Japan, United States, France, Germany, China, etc.). This model assesses sovereign temperatures by considering these new commitments. The following map shows the temperatures associated with the current countries' NDCs.



Temperature of NDCs. Source: Beyond Ratings, 2022.

ITR for Real Assets

On the Real Assets front, we are in the process of estimating our infrastructure portfolio (equity and debt) carbon footprints and implied temperature rise. We are using Iceberg Data Lab's modelling methodology for Science-Based 2°C Alignment (SB2A). This metric indicates whether an infrastructure entity (corporate, fund or asset) is aligned with the Paris Agreement's landmark objective of limiting global temperature rise to well below 2°C compared to pre-industrial levels. IDL's methodology is based on the computation of the entity's carbon intensity, including Scope 3 whenever relevant. Past trends in emissions performance are taken into account, as well as decarbonization targets. The final score, expressed in °C, represents a global implied temperature rise with which the entity is aligned, through comparison to its sectoral decarbonization target based on external reference trajectories (SBT and IEA models).

Quantifying climate risks: Climate Value at Risk model (Climate VaR)

Besides the "Warming Potential" approach, which embodies the impact that our investments may have on the climate, climate risk analysis can also be undertaken from a business/investment risk perspective to assess how climate change may impact investment returns.

AXA IM leverages a Climate Value-at-Risk (Climate VaR) model developed by MSCI. This model represents an **estimation of how the value of AXA IM's investment portfolios – on corporate bonds, listed equity and CRE debt - could be impacted** (up or down) by climate policy risk, technology transition opportunities and extreme weather events. This model is currently applicable only to corporate and real estate assets (not to sovereign assets) and it is in continuous development.

Yearly updates on this model allow us to expand the range of measured climate-related financial risks of AXA IM's investments and to assess them more precisely.

Climate VaR Methodology Overview

It is important to acknowledge that Climate VaR differs from the traditional concept of Value-at-Risk used in risk management. Unlike the conventional approach, Climate VaR does not consider the distribution of returns and calculate a low percentile based on that. Instead, Climate VaR values are derived from sets of hypotheses known as climate scenarios, along with inferred macro-economic parameters. In this regard, it is more akin to an expectation rather than a percentile.

The three components of Climate VaR are defined hereafter.

Policy risks

The transition to a low-carbon economy through market and regulations changes may significantly negatively impact businesses and their investors. **Policy Risk Climate VaR metric** assesses how regulations stemming from countries' Nationally Determined Contributions (NDCs) affect a company whose activities are directly (Scope 1) and indirectly (Scope 2 and Scope 3) producing greenhouse gases (GHG). In more details, Scope 2 corresponds to indirect emissions reduction related to a company's energy consumption whereas Scope 3 stands for indirect emissions reduction related to a company's value chain.

Therefore, Policy Risk evaluates the potential economic losses for companies if they fail to adapt their activities accordingly to a given climate scenario (1.5°C, 2°C or 3°C scenario) and derived transition pathways.

Technological opportunities

The transition to a low-carbon economy can bring about new opportunities for businesses and investors, particularly through the advancement of green technologies. The **Technology Opportunity Climate VaR metric** evaluates the potential future revenues that companies can generate from these green opportunities. While this metric is not the sole factor in estimating future green revenues, it primarily relies on companies' green patents and current low-carbon revenues for analysis. As a result, it assesses the potential economic returns for companies that are on the right path towards decarbonization, based on a specific climate scenario (such as the 1.5°C, 2°C, or 3°C scenario) and the associated transition pathways.

It is important to note that Technology Opportunity is an upside component of the Climate VaR metric.

Physical risks

Physical climate risk scenarios define potential climate-related consequences resulting from increased greenhouse gas emissions, and the subsequent financial implications (both burdens and opportunities) for businesses and investors. The **Physical Risk Climate VaR metric** assesses the level of exposure and vulnerability of companies to more frequent and severe extreme weather events, taking into account factors such as geographical location, asset size, and asset value.

This metric combines **chronic climate risks**, which involve long-term shifts in climate patterns such as extreme heat, extreme cold, heavy precipitation, heavy snowfall, and strong winds, as well as **acute climate risks**, which are event-driven physical risks like coastal flooding, river flooding, tropical cyclones, low river flows, and wildfires.

Consequently, this metric evaluates the potential economic losses that companies may experience in a changing climate environment based on a specific climate scenario.

The main challenge for the Physical Risk metric lies in capturing all possible extreme weather events. Additionally, it focuses solely on the assets owned by a particular company and does not account for the sustainability of the infrastructure, grids, or other necessary components that enable those assets to operate and generate revenue for the company.

Recent updates in the climate scenarios in Climate VaR

In previous years, the climate scenarios used in this report were based on the AIM-CGE model developed by the National Institute for Environmental Studies in Japan. These scenarios incorporated mid- to long-term macroeconomic forecasts, including factors such as GDP, population, and policies. The model utilized these inputs to generate climate-related metrics such as emission trajectories and energy pathways, forming what is known as an "AIM-CGE scenario."

However, for the current report, different climate scenarios have been employed. These scenarios are derived from other models and are referred to as the Network for Greening the Financial System (NGFS) scenarios.

The NGFS is a network of 114 central banks and financial supervisors created in 2017 that aims to accelerate the scaling up of green finance and develop recommendations for central banks' role for climate change. Its climate scenarios, presented in June 2020, have gained significance in the recent years, making them a notable reference in the field.

The NGFS scenarios are based on the three integrated assessment models REMIND-MAgPIE (Potsdam Institute for Climate Impact Research), GCAM (University of Maryland) and MESSAGEix-GLOBIOM (International Institute for Applied Systems Analysis). Their results were fed into the NiGEM model (National Institute of Economic and Social Research) to conduct further macroeconomic analyses on inflation or unemployment. In addition, climate data provided by Climate Analytics and the ETH Zurich are published.

A selection of five NGFS scenarios has been made to encompass a spectrum of temperature increases ranging from +1.5°C to +3°C by 2100. These scenarios also consider two distinct approaches to transitioning to a lower-carbon economy: an Orderly transition and a Disorderly transition.

<table>
<tr><th>Scenario Name</th><th>MSCI Name</th><th>Comments</th></tr>
<tr><td>Net Zero 2050</td><td>1.5°C REMIND NGFS Orderly</td><td rowspan="2">Both the REMIND NGFS 1.5°C scenarios are very similar in terms of emissions pathways and temperature warming. Where they differ is in the use of low-carbon technologies, with the Disorderly scenario using more low-carbon sources of technology in various sectors and the Orderly scenario using slightly more carbon sequestration.</td></tr>
<tr><td>Divergent Net Zero</td><td>1.5°C REMIND NGFS Disorderly</td></tr>
<tr><td>Below 2°C</td><td>2°C REMIND NGFS Orderly</td><td rowspan="2">The REMIND NGFS 2°C scenarios are similar to the 1.5°C scenarios in terms of electricity generation fuel mix in 2050 and, for the Orderly 2°C scenario, in terms of carbon sequestration use. Where they differ is how fast the transition happens, the year emissions reach net-zero and the projected carbon prices needed to reach the temperature target.</td></tr>
<tr><td>Delayed Transition</td><td>2°C REMIND NGFS Disorderly</td></tr>
<tr><td>NDC</td><td>3°C REMIND NGFS</td><td>The 3°C scenario assumes a slower pace of decarbonization compared to more ambitious scenarios and is solely based on the current Nationally Determined Contributions (NDC) of each country.</td></tr>
</table>

Source: AXA IM, MSCI, 2023.

Recent model updates in Climate VaR

The latest MSCI Climate VaR model consultation introduces several changes to its methodology. The changes are split into two main themes:

- Policy Risk relies more heavily on the multiple outputs from the climate scenario under consideration and less on MSCI-inferred extrapolations:
  - A new metric, Sectoral Decarbonization Pathways, is introduced. It uses year-on-year emissions in country/sector and GDP forecasts to compute country/sector intensity pathways. For NGFS, there are 203 countries x 50 sectors x 5 scenarios Sectoral Decarbonization Pathways;
  - The scope 1 and scope 3 reduction requirements change, becoming truly scenario-specific instead of relying on "fair-share" reductions. The current methodology assigns a reduction target to each company based on their sector and NDC, regardless of the specific scenario (only temperature matters). The new approach takes the specific scenario into account as only companies whose emissions reductions fall short of their Sectoral Decarbonization Pathways will be required to reduce their emissions;
  - The current methodology for assessing a company's future market share in low-carbon technology considers their low-carbon patents and clean tech revenue. However, it assumes that total projected revenue in a sector equals total policy costs, leading to overestimations as MSCI does not cover 100% of the companies belonging to a sector. The new methodology only considers MSCI-covered companies in calculating total policy costs;
  - The Policy VaR model originally used 15-year projections for transition costs when it was first introduced in 2017-2018, and these costs were then extrapolated out to 2100. However, with the more detailed and transparent climate scenario data now available through advancements in IAMs, there is no longer a need for such extrapolation.
- Changes in Policy Risk cost treatment after 2050:
  - Transition plans should have ended by 2050, and post-2050 scenario data is highly uncertain and extrapolated;
  - Costs after 2050 are considered to be heavily discounted to 0 due to this uncertainty and due to the transition plans.

AXA IM Climate Dashboard: a combination of historical and forward-looking metrics

Cost of climate change

Climate VaR (1.5°C orderly scenario)

		AuM at end of year	Climate VaR (1.5°C orderly scenario)				Coverage
			CVaR	Transition risks	Technology opportunities	Physical risks	
		[M€]	[%]	[%]	[%]	[%]	[%]
AXA IM traditional assets	***2022***	***388,479***	***-9.63%***	***-8.18%***	***+1.30%***	***-2.68%***	***77%***
Equities	*2022*	*59,358*	***-7.89%***	*-6.65%*	*+1.28%*	*-2.38%*	*94%*

Corporate Bonds	*2022*	*161,192*	***-10.51%***	*-8.96%*	*+1.31%*	*-2.83%*	*70%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***-12.22%***	***-10.18%***	***+0.96%***	***-2.94%***	***90%***
MSCI All Country World Index (ACWI)	*2022*		***-10.22%***	*-8.44%*	*+0.86%*	*-2.62%*	*98%*
ICE BofA Global Broad Market Corporate	*2022*		***-13.05%***	*-10.91%*	*+1.01%*	*-3.07%*	*87%*

Source: AXA IM, MSCI, 2022.

Climate VaR (1.5°C disorderly scenario)

		AuM at end of year	Climate VaR (1.5°C disorderly scenario)				Coverage
			CvaR	Transition risks	Technology opportunities	Physical risks	
		[M€]	[%]	[%]	[%]	[%]	[%]
AXA IM traditional assets	***2022***	***388,479***	***-11.93%***	***-11.49%***	***+2.35%***	***-2.68%***	***77%***
Equities	*2022*	*59,358*	***-9.80%***	*-9.34%*	*+2.13%*	*-2.38%*	*94%*
Corporate Bonds	*2022*	*161,192*	***-13.00%***	*-12.59%*	*+2.46%*	*-2.83%*	*70%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***-16.46%***	***-15.23%***	***+1.79%***	***-2.94%***	***90%***
MSCI All Country World Index (ACWI)	*2022*		***-13.76%***	*-12.61%*	*+1.51%*	*-2.62%*	*98%*
ICE BofA Global Broad Market Corporate	*2022*		***-17.59%***	*-16.31%*	*+1.90%*	*-3.07%*	*87%*

Source: AXA IM, MSCI, 2022.

Climate VaR (2°C orderly scenario)

		AuM at end of year	Climate VaR (2°C orderly scenario)				Coverage
			CvaR	Transition risks	Technology opportunities	Physical risks	
		[M€]	[%]	[%]	[%]	[%]	[%]
AXA IM traditional assets	***2022***	***388,479***	***-5.01%***	***-1.91%***	***+0.39%***	***-3.53%***	***74%***
Equities	*2022*	*59,358*	***-4.25%***	*-1.64%*	*+0.43%*	*-3.04%*	*94%*
Corporate Bonds	*2022*	*161,192*	***-5.41%***	*-2.05%*	*+0.38%*	*-3.77%*	*67%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***-6.33%***	***-2.79%***	***+0.27%***	***-3.86%***	***86%***
MSCI All Country World Index (ACWI)	*2022*		***-5.60%***	*-2.47%*	*+0.26%*	*-3.42%*	*98%*
ICE BofA Global Broad Market Corporate	*2022*		***-6.64%***	*-2.91%*	*+0.27%*	*-4.04%*	*82%*

Source: AXA IM, MSCI, 2022.

Climate VaR (2°C disorderly scenario)

		AuM at end of year	Climate VaR (2°C disorderly scenario)				Coverage
			CvaR	Transition risks	Technology opportunities	Physical risks	
		[M€]	[%]	[%]	[%]	[%]	[%]
AXA IM traditional assets	***2022***	***388,479***	***-8.88%***	***-5.78%***	***+0.68%***	***-3.73%***	***77%***
Equities	*2022*	*59,358*	***-7.08%***	*-4.51%*	*+0.72%*	*-3.20%*	*94%*
Corporate Bonds	*2022*	*161,192*	***-9.78%***	*-6.43%*	*+0.65%*	*-3.99%*	*70%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***-11.03%***	***-7.42%***	***+0.50%***	***-4.07%***	***90%***
MSCI All Country World Index (ACWI)	*2022*		***-9.10%***	*-5.97%*	*+0.47%*	*-3.59%*	*98%*
ICE BofA Global Broad Market Corporate	*2022*		***-11.83%***	*-8.02%*	*+0.51%*	*-4.27%*	*87%*

Source: AXA IM, MSCI, 2022.

Climate VaR (3°C scenario)

		AuM at end of year	Climate VaR (3°C scenario)				Coverage
			CvaR	Transition risks	Technology opportunities	Physical risks	
		[M€]	[%]	[%]	[%]	[%]	[%]
AXA IM traditional assets	***2022***	***388,479***	***-6.26%***	***-1.31%***	***+0.26%***	***-5.21%***	***77%***
Equities	*2022*	*59,358*	***-5.03%***	*-1.04%*	*+0.29%*	*-4.26%*	*94%*
Corporate Bonds	*2022*	*161,192*	***-6.88%***	*-1.45%*	*+0.24%*	*-5.69%*	*70%*
Benchmarks *(weighted average of the 2 benchmarks below)*	***2022***		***-7.64%***	***-2.10%***	***+0.18%***	***-5.71%***	***90%***
MSCI All Country World Index (ACWI)	*2022*		***-6.36%***	*-1.65%*	*+0.18%*	*-4.88%*	*98%*
ICE BofA Global Broad Market Corporate	*2022*		***-8.17%***	*-2.28%*	*+0.18%*	*-6.06%*	*87%*

Source: AXA IM, MSCI, 2022.

We utilized the Climate Value-at-Risk model to evaluate the potential future costs/benefits of AXA IM's investments under different climate scenarios (1.5°C, 2°C, or 3°C). As a reminder, this model combines policy risks, technology opportunities, and physical risks.

Since the NGFS scenarios are being used for the first time this year, we cannot compare the results with last year's outcomes, which relied on AIM-CGE scenarios.

The tables above provide detailed results for each NGFS scenario.

For the most-optimistic scenario (1.5°C Orderly), they indicate that the aggregated climate risks could result in a potential future cost of **-7.9%** (AXA IM Equities) and **-10.5%** (AXA IM Corporate Bonds), whereas the benchmarks show **-10.2%** (MSCI ACWI) and **-13.0%** (ICE BofA Global Broad Market Corp).

In the most pessimistic scenario (3°C scenario), the figures change to **-5.0%** (AXA IM Equities) and **-6.9%** (AXA IM Corporate Bonds), compared to **-6.4%** (MSCI ACWI) and **-8.2%** (ICE BofA Global Broad Market Corp).

However, it would be incorrect to conclude that a 3°C scenario is financially preferable for AXA IM's investments, as the Climate VaR consistently remains lower than in the 1.5°C scenario. In reality, following a 3°C scenario has less immediate impact than a 1.5°C scenario, as the latter requires a rapid and substantial increase in carbon pricing. On the other hand, a 3°C scenario is mainly associated with longer-term physical risks, that benefit from higher discounting costs.

Furthermore, the model estimates the physical risk as the costs associated with a specific set of non-exhaustive extreme weather events and don't reflect these extreme weather events impacts at macro level.

Consequently, AXA IM does not utilize this complex and evolving metric in its day-to-day investment operations. However, it does provide insights into which assets are most vulnerable to the effects of climate change and how AXA IM manages these risks on a yearly basis.

Climate temperature

		AuM at end of year	Implied temperature rise	Coverage
		[M€]	[°C]	[%]
AXA IM Core **listed** assets	***2022***	***388,479***	***2.14°C***	***89%***
Equities	*2022*	*59,358*	***2.36°C***	*97%*
Corporate Bonds	*2022*	*161,192*	***2.29°C***	*82%*
Sovereign Bonds[115]	*2021*	*205,476*	*1.89°C*	*93%*
	2022	*169,457*	***1.94°C***	*93%*
Benchmarks *(equally weighted result on the 3 benchmarks below)*	***2022***		***2.68°C***	***97%***
MSCI All Country World Index (ACWI)	*2022*		***2.94°C***	*99%*
ICE BofA Global Broad Market Corporate	*2022*		***2.63°C***	*92%*
JP Morgan GBI Global Govies	*2022*		***2.48°C***	*100%*

Sources: AXA IM, MSCI, Beyond Ratings, 2022.

We employed MSCI's ITR methodology to evaluate the alignment of AXA IM's investments in listed equities and corporate bonds with regards to temperature rise. Since this is the first year the ITR metric is being used, we cannot compare the results with last year's outcomes, which relied on the Warming Potential metric. The results indicate that the ITR values are 2.36°C for listed equities and 2.28°C for corporates bonds, in contrast to higher results for the benchmarks: 2.94°C for MSCI ACWI and 2.63°C for ICE BofA Global Broad Market Corp.

As for sovereign assets, based on Beyond Ratings' model, the warming potential of AXA IM's sovereign investments in 2022 reached 1.94°C which represents an important decrease of 0.4°C compared to

[115] While the reported ITR for listed equities and corporate bonds use MSCI mode, the ITR reported for sovereign bonds uses Beyond Ratings' "Warming Potential" model.

2020. The slight increase from 1.89°C in 2021 to 1.94°C in 2022 is mainly driven by the higher coverage on supranational and agencies which were not covered in 2021, whereas 4 supranational and agencies are covered this year representing 4.4% in AuM of AXA IM's investments in sovereign assets. For these specific issuers, a weighted average (by GDP) of the countries is applied to calculate the temperature. Consequently, supranational and agencies to which AXA IM's is exposed have higher-than-average temperatures, at 2.3°C approximately. In parallel, the top 10 countries in terms of AXA IM's exposure have stable temperatures, the maximum absolute variation being +0.05°C. Overall, the temperature of our sovereign assets is significantly lower than the benchmark's one, JP Morgan GBI Global Govies, which reaches 2.48°C.

Carbon intensity

We report on the weighted average carbon intensity (WACI) by revenues of our assets.

For the carbon intensity by revenues, we rely on Trucost S&P for listed corporate assets, MSCI and Iceberg Data Lab for real estate and infrastructure, and FinDox for alternative credit, for the amount of GHG emissions released into the atmosphere in 2022 in proportion to each investee company's revenue. It is expressed in tons of CO2 equivalent per USD million of revenues of the Scope 1 + 2 GHG emissions of each investee company and weighted as set out below:

$$Carbon\ Intensity\ by\ Revenues = \sum_i \omega_i \times \frac{GHG\ Emissions_i^{Scope\ 1+2}}{Revenue_i}$$

where $\omega_i = {AuM_i}/{\sum_{i \in I} AuM_i}$. ω_i is the weight of each individual invested instrument as a proportion of *I*, the subset of the universe of invested instruments belonging to a particular asset class (e.g. listed equities) where data is available on numerical carbon intensity.

For listed corporate assets, we still also report the WACI by revenues using Scope 1 + First tier indirect (i.e., Scope 1 + Scope 2 + companies' first-tier upstream supply chain, i.e., their direct suppliers), which allows to capture the part of Scope 3 emissions on which companies have direct leverage for action regarding decarbonization.

For the carbon intensity of sovereign assets, we rely on World Bank data, which accounts for GHG emissions produced during consumption of solid, liquid, and gas fuels and gas flaring. It is expressed in tons of CO2 equivalent per USD million of GDP PPP (Purchasing Power Parity) and weighted by the share of our holdings in all countries, as follows:

$$Carbon\ Intensity\ by\ GDP = \sum_i \omega_i' \times \frac{GHG\ Emissions^{Cement+Foss\quad Fuel}}{Purchasing\ Power\ Parity - Adjusted\ GDP}$$

where $\omega_i' = {AuM_i}/{\sum_{i \in S} AuM_i}$. ω_i is the weight of each individual invested instrument as a proportion of *S*, the subset of instruments belonging to the sovereign universe.

		AuM at end of year	Weighted average carbon intensity (WACI)			Coverage
		[M€]	Scope 1 + 2 [tCO_2e / $M revenues]	Scope 1 + First tiers indirect [tCO_2e / $M revenues]	Scope 1 + 2 [tCO_2e / $M of GDP PPP]	[%]
AXA IM Core listed corporate assets[116]	***2021***	***329,294***	***123***			***80%***
	2022	***251,868***	***106***			***88%***
Equities	*2021*	*87,152*	***92***	***137***		*95%*
	2022	*59,358*	***85***	***138***		*98%*
Corporate Bonds	*2021*	*186,861*	***128***	***166***		*81%*
	2022	*161,193*	***103***	***144***		*84%*
Sovereign Bonds	*2021*	*205,476*			***149***	*92%*
	2022	*169,457*			***137***	*88%*
Benchmarks *(weighted average on the 2 corporate benchmarks below)*	***2022***		***213***	***266***		*94%*
MSCI All Country World Index (ACWI)	*2021*			***204***		
	2022		***163***	***218***		*99%*
ICE BofA Global Broad Market Corporate	*2021*			***303***		
	2022		***229***	***282***		*92%*
JP Morgan GBI Global Govies	*2021*				***222***	*100%*
	2022				***205***	*100%*

Source: AXA IM, S&P Trucost, Beyond Ratings, World Bank, 2022.

AXA IM listed corporate assets' WACI equals 106 tCO_2e/$M of revenue in 2022, decreasing from 123 in 2021, i.e., -13.9%. Between 2021 and 2022, the top 10 contributors to our listed corporate assets' WACI have been stable, as 6 companies in 2021's top 10 remain in 2022's top 10. In addition, in 2021, the top 10 contributors represented approx. 17% of AXA IM's aggregated WACI, and now represent approx. 18% of AXA IM's aggregated WACI. However, the top 10 has seen its aggregated Carbon Intensity decrease by 9%, which explains part of the variations observed at AXA IM's level. Complementary explanations can be found in the increase of exposure in low-emitting sectors, such as Financials, and the decrease in average WACI of high-emitting sectors AXA IM is exposed to, such as Utilities.

[116] Reported data on listed corporate assets are based on the same scope than the reported carbon intensity reduction part of our NZ targets (for more details see section 6.1). This also includes corporate assets from alternative platforms, and is thus not the direct sum of the below reported Equities and Corporate Bonds AuM.

		AuM at end of year	Weighted average carbon intensity (WACI)	Coverage
		[M€]	Scope 1 + 2 [tCO_2e / $M revenues]	[%]
Real Estate & Infrastructure[117,118]	***2022***	***46,962***	***213***	***89%[119]***
Real estate	*2022*	*34,563*	*71*	*61%*
Infrastructure	*2022*	*12,399*	*143*	*90%*

Source: AXA IM, MSCI, Iceberg Data Lab, 2022.

AXA IM Alts is disclosing for the first time the WACI of its real estate and infrastructure investment portfolio. The WACI aggregation on real asset investments was challenging due to carbon data scarcity – especially for the private debt portfolio – as well as the differences and specificities in carbon accounting across the considered asset classes. For instance, the approach to calculating WACI on real estate and CRE debt portfolios was less straightforward compared to their peers as weighted carbon intensity in both asset classes has traditionally considered floor area (in m^2) and not real estate revenue or rents as a denominator.

WACI for real estate investments (direct property and CRE debt) amounted to 71 tCO_2/€M with and 61% coverage rate as of December 2022, whereas infrastructure investment portfolios (covering 90% of equity and debt investments) displayed a WACI of 143 tCO_2/€M at the end of 2022.

Real estate WACI figures incorporated carbon emission based of real energy consumption data collected for our direct property portfolio. For CRE debt, WACI data have been established using borrowers' proxy carbon metrics sourced from third-party data provider MSCI, while for infrastructure debt and equity, a blend of carbon emissions reported at asset or company level and proxy data modelled by IDL have been used.

Assessing and interpreting WACI for private real estate and infrastructure (debt and equity) is a highly nuanced exercise especially given the lack of well-established benchmarks. Each year we will continue to refine our analysis as data and methodologies in the market improve in line with our commitment to invest in low-carbon assets or assets with improving carbon intensities.

For direct real estate assets, scope 1 and 2 emissions are capturing emissions attributable to the landlord of each asset (*e.g.*, common area of the building), while scope 3 captures emissions attributable to the tenants. To be included in the reported coverage, assets must have greater than 90% coverage (in surface area and months of data) of all utilities in scope for the asset. While this reduces the perceived coverage of the indicator, it ensures greater quality and reliability of the reported data. Furthermore, in accordance with the 'precautionary principle' described in PCAF 2023 guidance, where there is no metered allocation of emissions to a tenant (*e.g.*, for heating of an asset), the resultant emissions are reflected in landlord-related scope 1 and 2 emissions. This approach may

[117] Data on AXA REIM SGP SA only at end of 2022 from collected data, excluding listed real estate (c. €4 bn AuM at end of 2022).

[118] For real estate assets, scope 1 and 2 are capturing emissions attributable to the landlord of each asset (i.e., common area of the building), while scope 3 captures emissions attributable to the tenants.

[119] For real estate and infrastructure, the coverage is based on assets with available data on revenues from underlying issuers, leading to a limited coverage for real estate assets in absolute values and thus to an overall coverage highly driven by infrastructure assets.

overstate the total reported Scope 1 and 2 emissions~~,~~ and, accordingly, AXA IM may re-allocate these emissions, where appropriate allocation can be made in the future.

For indirect real estate (*i.e.*, CRE Debt), GHG emissions are calculated on the proportion of the outstanding value of the loan to the initial investment value. GHG emissions' estimates for underlying assets are provided by third-party data providers, derived from typology and location-based benchmarks, and applied over the floor area of an asset.

For infrastructure, the emissions are based on a blend of modelled data (provided by third party data provider~~,~~) and directly-disclosed data (collected from the borrower or investee companies). For modelled data, coverage is based on assets with available data using a modelling approach based on revenue streams from underlying issuers associated with specific Nomenclature of Economic Activities (NACE) codes.

As a result, the reported metrics reflect limited coverage for real estate assets in absolute values.

		AuM at end of year	Weighted average carbon intensity (WACI)	Coverage
		[M€]	Scope 1 + 2 [tCO_2e / $M revenues]	[%]
Alternative credit, Natural capital & Impact[120]	***2022***	***47,529***	***122***	***73%***
Alternative credit	*2022*	*46,900*	*111*	*73%*
Natural capital & Impact	*2022*	*630*	*122*	*27%*

Source: AXA IM, FinDox, S&P Trucost, 2022.

For Alternative credit, Natural capital & Impact assets, WACI figures have been established using borrowers' carbon metrics sourced from third-party data provider Findox for the Leveraged loans, Private debt and CLOs universes as well as underlying assets' originator's carbon data sourced from third-party data provider Trucost for the ABS, SRT and ILS universes.

[120] Data on worldwide holdings at end of 2022 from FinDox.

7- Our biodiversity strategy

Over the past years, at AXA IM we reinforced our efforts to better integrate biodiversity considerations in our research, engagement and investment processes with the conviction that:

- Biodiversity loss represents a risk to investment returns:
  - All economic activity ultimately depends on Nature: biodiversity loss affects the businesses we invest in, and hence represent a risk to our investment returns;
  - A 1.5 times global GDP risk: estimated to be worth $150tn annually[121], loss of ecosystem assets and services represents an understated risk for both investors and companies;
- Fighting biodiversity loss represents one of the biggest transition challenges and opportunities:
  - To save biodiversity, around $200-300bn per year should be allocated to biodiversity solutions[122];
- Beyond financial considerations, biodiversity is at the basis of sustainable development:
  - Biodiversity ensures functioning of ecosystem services, which underpin human well-being and livelihoods vital to the achievement of most SDG.

Provided its fundamental importance for human society and economies, biodiversity is linked directly or indirectly to all the 2030 Sustainable Development Goals (SGDs), and more particularly to:
SDG 14 and SDG 15 but also, SDG 12 as well as SDG 13, SDG 6, SDG 3, and SDG 2.

In June 2021, AXA IM signed the Finance for Biodiversity Pledge[123] which steers our Biodiversity strategy. We consider investors have a role to play to:

- Better understand drivers of biodiversity loss and impacts on biodiversity by different sectors as well as dependencies of industries on natural capital;
- Engage with companies to reduce their negative impacts on biodiversity and increase their positive contribution by supporting development of nature-positive solutions;
- Incorporate biodiversity criteria in risks and opportunities assessment as part of investment analysis;
- Set targets and direct capital to resolve biodiversity loss.

A key challenge we face is that we currently miss commonly accepted and well-developed tools and metrics to measure biodiversity performance. However, this does not prevent us from accelerating our efforts in the field of biodiversity since 2020.

In 2022, in light of this commitment, we focused our efforts on:

1. Pursuing our research efforts and engagement activities to identify drivers of biodiversity loss and contribution of different sectors to natural capital degradation. In 2022, we launched a biodiversity-focused engagement campaign with companies in the industries with high biodiversity footprint based on the footprinting data by Iceberg Data Lab (IDL) with the goal to increase awareness of

[121] The Biodiversity Crisis Is a Business Crisis | BCG
[122] Crédit Suisse and WWF Switzerland, "Conservation Finance Moving beyond Donor Funding toward an Investor-Driven Approach", 2014, https://www.cbd.int/financial/privatesector/g-private-wwf.pdf
[123] Signatories – Finance for Biodiversity Pledge

those companies on the matter of their impacts on biodiversity and encourage them to develop first approaches to reduce those impacts;

2. Supporting the development of metrics to measure the impact of issuers on biodiversity and identify key pressures, as described in the section 4- Metrics, understand associated risks and opportunities to direct our investments. In 2022, AXA IM contributed to the multi-tool pilot study[124] coordinated by Finance for Biodiversity Foundation. The study allows to identify top biodiversity-impact sectors and companies based on convergent data from four different providers (including our partner IDL) and provides important additional insights in terms of industries' impacts on biodiversity, leveraging on existing scientific knowledge and the current developments of data and tools;

3. Implementing an enhanced policy on deforestation & ecosystems protection. In 2022, we further enhanced the AXA IM Ecosystems Protection and Deforestation policy[125] by specifying our ambition in terms of engagement on biodiversity and deforestation topics. We also included biodiversity-related considerations in the AXA IM updated Corporate Governance and Voting Policy[126]; this allows us to use our voting rights alongside engagement to support transition towards more nature-positive businesses;

4. Launching a biodiversity impact fund range in companies that are preserving life on land, water and air through sustainable alternative products and services which are protecting and supporting ecosystem preservation across four key areas: Sustainable materials, Land & animal preservation, Water Ecosystems and Recycling & Recirculation (see section 1.3).

As such, it should be noted that AXA IM has not yet set any 2030 quantitative target for biodiversity as requested by the implementation decree of Article 29 of the LEC, as the issue was pending the enforcement of the United Nations Convention of Biological Diversity (UN CBD)[127] COP15 agreement by the signatory countries and related market-based methodological developments for measure the alignment of investment strategies with the global mid- and long-term goals. At this stage, AXA IM's continuous improvement plan related to its biodiversity strategy consists of:

- Our **research** and **engagemen**t efforts;
- Our **exclusion**, through AXA IM Ecosystem Protection & Deforestation policy;
- Continuous progress on **biodiversity footprint measurement, including** on AXA IM Alts side.

In addition, the publication the **Taskforce on Nature-related Financial Disclosures (TNFD)**[128] scheduled for Autumn 2023 are expected to provide additional guidance to corporates and financial institutions helping the industry to strengthen biodiversity strategies.

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124 Tracking top biodiversity-impact sectors with footprinting tools - Finance for Biodiversity Foundation
125 AXA IM EP and Deforestation policy (EN) - v01-02-2023 Clean.pdf (axa-im.com)
126 Stewardship and Engagement | AXA IM Corporate (axa-im.com)
127 Convention on Biodiversity | United Nations
128 TNFD – Taskforce on Nature-related Financial Disclosures

7.1 Research & Engagement

2022 progress on Biodiversity	
Engagement	Research and Expertise
In 2022, we continued our engagement program targeting a selection of companies developing activities related to key raw materials associated with the risk of deforestation and ecosystems conversion (soy, timber, palm oil and cattle). **We think the results of the campaign have been reassuring, with several of the companies developing deforestation-free action plans**. **Moreover, in 2022, we extended our engagement initiatives to address wider biodiversity issues. This new engagement campaign was underpinned by the integration of a new metric – biodiversity footprint designed by Iceberg Data Lab (IDL). The IDL biodiversity footprinting data helped us select and prioritise sectors and companies presenting a significant biodiversity footprint, and to focus our engagement efforts accordingly.** Since 2021 and throughout 2022, we have been working together with 11 other investors on a setting up of a new biodiversity - focused global collaborative engagement initiative – Nature Action 100 (NA100) soft-launched during the COP15 in December 2022[133]. The NA100 will effectively start its work in 2023 and will focus on driving greater corporate ambition and action to reduce nature and biodiversity loss.	In 2021, AXA IM has signed the Finance for Biodiversity (FfB) Pledge. As part of FfB Foundation, supporting organisation under the Pledge, AXA IM chairs the investors' working group on biodiversity impact metrics and actively participates in the working groups on corporate engagement, advocacy and target-setting. During 2021, under the leadership of AXA IM the working group on impact assessment launched a public consultation on biodiversity approaches by financial institutions[129]. In 2022, the results of the consultation were used to design a first investor guide on biodiversity integration - *Act now! The why and how of biodiversity integration by financial institutions*, published in December 2022[130]. In parallel, AXA IM has also been contributing to development of the FfB engagement guide published in April 2022[131]. As an active member of the FfB working group on corporate engagement, AXA IM also contributed to the creation of the FfB *Guide on engagement with companies*[132] published in April 2022 by sharing experience on the matter of engagement and voting on biodiversity topic and providing examples of positive investment solutions.

These actions are all part of AXA IM work to align with the long-term goals on biodiversity of the UN CBD, the overall objective of which is to encourage actions, which will lead to a sustainable future. To protect biodiversity, we need to measure and identify the causes or drivers of biodiversity loss to be able to act on them. The **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)** identifies 5 direct drivers of biodiversity loss linked to human socio-economic activities, among them: land use and sea use change, direct overexploitation of natural resources, climate change, pollution, and spread of invasive species.

[129] Consultation outcomes on finance sector biodiversity measurement – Finance for Biodiversity Pledge
[130] Act now! The why and how of biodiversity integration by financial institutions - Finance for Biodiversity Foundation
[131] Guide on engagement with companies – Finance for Biodiversity Pledge
[132] Guide on engagement with companies - Finance for Biodiversity Foundation
[133] At COP15, investors announce Nature Action 100 to tackle nature loss and biodiversity decline – Nature Action 100

The degradation of natural ecosystems causes important environmental and social risks across the world as well as significant economic risks related to potential strong fluctuations in raw material costs, disruptions in operations and supply chains, etc. All this in the context of transition risks related to increasing regulation on biodiversity restoration around the world. Those who will seize this transition opportunity first will win economically while bringing real solutions to preserve our living conditions.

Such industry initiatives as SBTN (Science-Based Targets Network)[134] or TNFD have started to gather evidence on the capacities of businesses and investors to act on biodiversity and to reach the UN CBD global goals. The purpose of the new post-2020 Global Biodiversity Framework (GBF)[135] adopted at the COP15 in December 2022, is to propose concrete targets and mechanisms guiding private sector contribution to reverse biodiversity loss. The Framework already features some significant advances: notably the target 15 of the GBF, which encourages disclosure on biodiversity by corporates and financial institutions would contribute to development of biodiversity-specific data and metrics eventually helping investors to integrate biodiversity challenges into our investment decision and enhance financing for protection and conservation of natural areas. Furthermore, the "halt and reverse nature loss by 2030", the 30% of protected ecosystems, and the decided $200bn financial resources give clear and legible goals to achieve for all stakeholders. In addition, we are glad to see that the final Framework reaffirmed the role played by indigenous people and local communities for a good management and protection of natural capital.

To be able to fully contribute to global biodiversity protection goals financial institutions clearly need tools and data adapted to track drivers of biodiversity degradation and, thus, to measure contribution of each issuer or sector to biodiversity loss - biodiversity footprint.

7.2 Exclusions: our Ecosystem protection & Deforestation policy

AXA IM has been sensitive to the topic of deforestation and ecosystems conversion for a number of years and has been implementing an exclusion policy for investments related to palm oil production since 2014. In 2021, AXA IM decided to extend its palm oil policy to a more comprehensive deforestation and ecosystem protection policy[136]. AXA IM considers that investment in companies which have a critical impact on forests according to the Carbon Disclosure Project (palm oil, timber products, cattle products, and soy) and are involved in controversial practices should be avoided. Beyond this targeted exclusion AXA IM continues to encourage and promote the dialogue with companies involved in deforestation issues, in order to change practices[137].

Moreover, AXA IM values forestry and natural capital as an asset class and is likely to pursue investments into this sector in the future, through its Alternatives investment expertise.

AXA IM is committed to sustainable forest management practices and pursues a rigorous policy as part of its forest investments in selecting its assets and its forest management partners, and in adapting management practices to meet these global challenges.

Specifically, investments in private assets catalyze solutions that promote mitigation, adaptation and resilience in relation to climate and biodiversity. Strategies such as the "Climate & Biodiversity" strategy

134 The Science Based Targets Network (SBTN) - Science Based Targets
135 Kunming-Montreal Global Biodiversity Framework (cbd.int)
136 AXA IM expands its palm oil policy to protect ecosystems and fight deforestation | AXA IM Corporate (axa-im.com)
137 Stewardship & Engagement | Responsible Investing | AXA IM Corporate (axa-im.com)

focuses on solutions that promote: Conservation of Natural Capital; Resource Efficiency; and Resilience of Vulnerable Communities to the effects of climate change and biodiversity loss. Our mission has been translated into real world activities that lead to the conservation of natural capital, protection of critical habitats, and climate mitigation globally.

In our existing assets, AXA IM is willing to progress on Improved Forest management (IFM) and Biodiversity improvement.

Improved Forest Management (IFM) of natural forests can result in greater levels of storage of carbon while maintaining wood production over the long term. Some of IFM techniques adopted by AXA IM include:

- Extending harvest cycles to allow trees to grow larger before they're felled, increasing the average carbon stock across a working forest;
- Thinning of competing trees and vegetation to allow trees to grow faster and bigger;
- Managing conservation zones within forests to support ecosystems;
- Keeping the healthiest, most diverse trees of all size classes and harvesting the rest;
- Properly identifying commercial species prior to cutting so that non-commercial trees are not cut down and abandoned.

Our approach to biodiversity management reinforces our leadership in experimenting with new ways of maintaining forests for better resiliency, further explore the biodiversity conservancy role of the forests and educate the wider public on the many roles of the forest, specifically:

- Find the best silvicultural scheme for long lasting reconstitution and biodiversity preservation;
- Measure reconstitution and biodiversity.

It is our conviction that the forestry and natural capital asset classes are material to future value, and this is reflected in our ongoing investment into these sectors. though our policy of targeting lower harvesting than natural growth, it is estimates that the standing stock of our forests is estimated to have sequestered approximately 621,540 tons of carbon dioxide, net annual harvesting.

As such, in 2022, we delivered 100% certification of all forest assets under either PEFC or FSC certification throughout the year. And on the total forest assets, c. 81,000 ha and 1,570,000 trees were planted in 2022.

Vision for 2023

In 2022, AXA IM has progressively started to publish when relevant a biodiversity footprint at fund level based on the methodology described below. AXA IM aims to publish this new and innovative metric for each of its funds on traditional asset classes (AXA IM Core perimeter) when coverage of at least 10% in Iceberg Data Lab (IDL) footprinting data is reached. As regards to those funds where the coverage threshold has not been reached this can mostly be explained by the specificities of asset classes, instruments or issuers invested in. In 2023, we will continue implementing this avant-garde transparency action. This new experimental metric is used for reporting purposes only. However, we also foresee that reporting on these metrics, combined with new standards such as the TNFD and the EU Taxonomy will also help progressively our portfolio managers to consider investing in issuers that are the less harmful to biodiversity and avoid investing in those that have a particularly material impact on ecosystems.

In 2023, we will also provide relevant training to our investment teams to explore and challenge with them this new biodiversity-specific metric and ensure common understanding of global biodiversity and natural capital issues we are facing.

More globally, AXA IM sees supporting development of biodiversity-specific metrics and tools as important to allow progress on biodiversity impacts measurement.

The biodiversity footprint provided by IDL may help us track negative contribution of our investment activities to biodiversity protection goals. The latter represents the key long-term goal set by the UN CBD. With the use of IDL metric we may identify risks of biodiversity degradation and encourage issuers exposed to those risks to make a transition towards a more sustainable economic activities respectful of human life and nature. Thus, at this stage, we see the following possible applications for IDL biodiversity data as part of our AXA IM natural capital protection approach:

- Identify potentially most impactful sectors / issuers and inform our shareholder engagement practices on the matter of biodiversity;
- Continue to test biodiversity data and develop internal biodiversity research;
- Share knowledge internally on key biodiversity challenges, data and approaches.

Now at experimental phase, we will continue to work with IDL in 2023-2024 on:

- Methodological solutions to integrate biodiversity loss drivers not yet included: invasive species, sea use change, ocean pollution, overconsumption of natural resources, etc.;
- Methodological solutions on estimation of biodiversity dependencies and positive impacts.

In 2023, we will also continue to develop our knowledge in the field of social issues associated with biodiversity loss. Clearly, the loss of biodiversity may accentuate such social issues as the ones related to Human Rights, responsible consumption, as well as access to water and food (both variety and quality), proper hygiene and sanitation, security and health risks, population movements due to ecosystems degradation and climate modifications, etc. We are working to progressively include social aspects related to biodiversity loss and deforestation into our research and engagement activities.

Moreover, we see the mobilisation of investors on the matter of biodiversity to continue. AXA IM conducts constructive discussions on biodiversity topics with CDP, Ceres, Global Canopy, WWF and other external experts. We participate actively in the industry-leading initiatives like the Finance for Biodiversity Foundation, organisation supporting the FfB Pledge, by driving discussions on such topics as biodiversity impact metrics. We expect to continue these activities further.

In addition, as part of AXA IM Stewardship activities, we will continue to engage proactively with issuers in high stake biodiversity sectors (based on IDL data) individually and via collaborative engagement initiatives. In 2023, AXA IM will be contributing to the work of the two new collaborative engagement campaigns: Biodiversity Engagement on Waste and Pollution[138] by FAIRR and the Investor Initiative on Hazardous Chemicals (IIHC)[139] supported by ChemSec.

138 Biodiversity Loss from Waste & Pollution - FAIRR
139 The Investor Initiative on Hazardous Chemicals (IIHC) – ChemSec

7.3 Introducing biodiversity-specific indicators

One of the key tools helping us to reach our objectives on biodiversity is the one being developed by Iceberg Data Lab (IDL)[140] and I Care & Consult[141]. IDL develops an innovative biodiversity-specific data used to create a corporate biodiversity footprint (CBF) metric allowing us today to start identifying AXA IM exposure to the risks of biodiversity loss by identifying contribution of issuers or sectors invested into biodiversity degradation.

The CBF measures impacts in terms of biodiversity loss associated with the pressures on biodiversity generated by investees' economic activities across their value chain. To draw a parallel with biodiversity loss drivers identified by IPBES, CBF allows currently to capture relative loss of biodiversity caused by the change of land use, GHG emissions (climate change contribution), water and air pollution generated by a company's activities throughout their associated value chain.

- *Note that CBF is calculated via science-based models (Globio[142]) having their limits: such drivers of biodiversity loss as sea use change, invasive species, natural resources overexploitation identified by IPBES are not yet covered by the IDL CBF solution*.
- *To advance further on the analysis of biodiversity loss drivers IDL, together with other organisations is a member of the EU Commission Align project the objective of which is to co-develop recommendations for a standard on biodiversity measurements and valuation.*

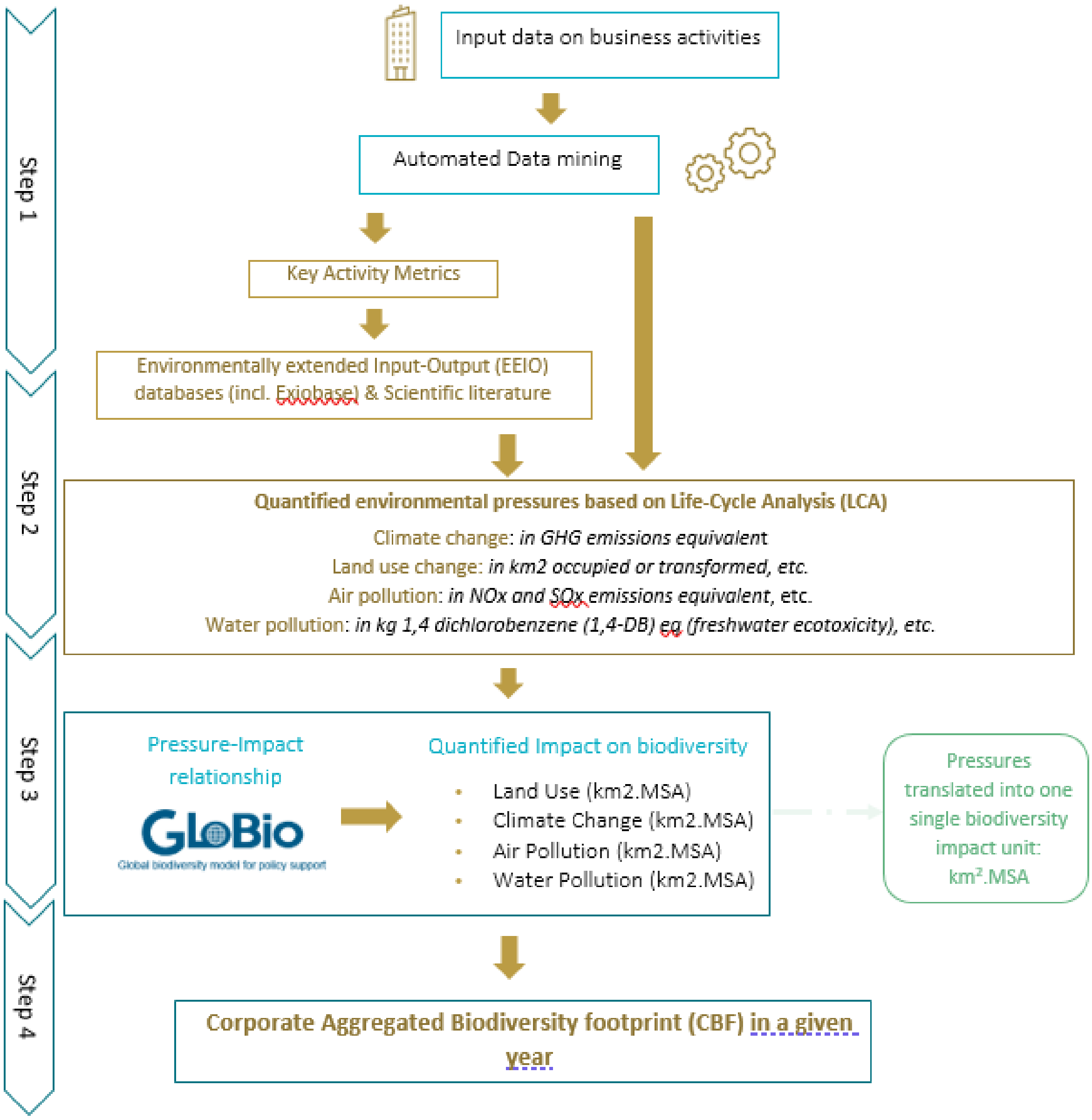
The value chain approach integrated in the CBF allows to trace for a given company its relative biodiversity footprint as regards the direct pressures generated by a company's activities (GHG emissions coming from the combustion of fossil fuels, surface artificialization coming from surface occupied directly by the company, etc. - Scope 1), the pressures of a company induced by its electricity, heat, and cooling purchase (Scope 2) as well as all indirect pressures induced by company's purchases and supply chain (Scope 3 upstream) and company's products and services at a use stage (Scope 3 downstream)[143].

More concretely, calculation of the CBF is done **in several steps** (see graph below):

1. Assess the commodities and products purchased and sold by the company throughout its value chain based on IDL internal physical Input/Output model and allocate the company's product flows by sector (NACE sectorisation);[144]
2. Calculate the company's environmental pressures (climate change, land use change, air pollution and water pollution) identified by the CBF in relation to its products' flows based on a life-cycle analysis (LCA);
3. Translate the environmental pressures through pressure-impact functions (GLOBIO) **into one and the same biodiversity impact unit;**
4. Aggregate the different impacts into an overall absolute impact on a company level.

140 Iceberg Data Lab
141 I Care - Conseil en stratégie et environnement (i-care-consult.com)
142 GLOBIO - Global biodiversity model for policy support - homepage | Global biodiversity model for policy support
143 Scope 1, 2 and 3 are defined in line with GHG Protocol, same definitions of Scopes are used by IDL CBF for biodiversity.
144 The European classification system of economic activities

IDL Corporate Biodiversity Footprint Methodology



The single unit of biodiversity impact used to calculate CBF is the Mean Species Abundance (MSA)[145]. Generally, MSA measures the average abundance of native species in a delimited space under the influence of biodiversity loss pressures in comparison to undisturbed ecosystems (in %).

MSA is among most widespread biodiversity metrics today and presents several advantages:

- It is relevant for biodiversity as based on species abundance it allows to quantify global impact of human activities on ecosystems. MSA figures among recognised indicators referenced by IPBES, IPCC, CBD;
- It has already been studied and tested by academics and professional experts;

[145] This indicator was proposed as part of the development of the GLOBIO3 model, the objective of which is to simulate the impact of different human pressure scenarios on biodiversity. The GLOBIO model was developed by PBL Netherlands Environmental Assessment Agency to quantify global human impacts on biodiversity. (Source: IDL Methodology)

- It offers a holistic approach to the biodiversity impact of corporates adapted to evaluate biodiversity impact at an investment portfolio level allowing for comparison of sectors, companies, and progress tracking.

The impact calculated via CBF then results from the level of pressures generated (volumes of pollution emitted, etc.) by a company's activities considering the severity of nature disturbances provoked (level of soil and water toxicity induced, etc.) and the relative surface affected (in km^2).

- *The CBF impacts are modelled in a local or global manner, depending on a pressure modelled and respective modelling approach as well as the level of granularity as regards data (commodities / countries). IDL works to localise progressively all modelled impacts.*

Aggregated, CBF provides a negative impact measure, meaning that by using this metric we can calculate volume of biodiversity loss caused by pressures generated by a company's economic activities in equivalent surface of km^2 of MSA identical to pristine forest lost or, otherwise saying, in equivalent surface of km^2 artificialized[146] in a given year.

Interpret the CBF metric: What would a km^2 MSA of -15 mean?
In other words, CBF of for example -15 km^2 MSA for a given company can be interpreted as an equivalent surface of 15 km^2 artificialized completely (*i.e.*, 15 km^2 of pristine forest lost) due to pressures generated on biodiversity by a company's activities across associated value chain (purchases, products and services) in a given year.

IDL calculates a biodiversity footprint on a company level, which can also be tracked at a sectoral level and can then be aggregated at a portfolio level following the same logic as carbon footprint.

CBF at a company level

As presented above, on a company level the calculation of the CBF starts with identifying segments a company is active in by providing a distribution of a company's total sales per business line (product) and country.

- *Sales data availability and granularity is a well-known challenge among data providers and analysts today, the level of data quality is to be continuously improved.*

Once the sales are mapped, IDL biodiversity tool traces the whole value chain associated to company's business segments based on input and output data from external databases (like Exiobase) as well as IDL proprietary input and output model.

Company level analysis
Case study – Nestlé SA (Agri-food company)
The company is active in different segments: cereals, dairy products, cocoa and chocolate, oil & fats, bottled water, other. Company reports well on the sales per segment and per country and considers prices differences between locations - a good disaggregation allows for a high-quality analysis.

146 Artificialization of an environment, of a natural or semi-natural habitat is the loss of its qualities. The term refers to the loss of biodiversity and ecosystems destruction. Artificialization corresponds to the transformation of an environment due to the human presence.

Based on the value-chain mapping of a company's products' flows (Scope 1, 2 and 3), IDL tool uses life-cycle analysis (LCA) to calculate the level of land use change, GHG emissions, air pollution and water pollution associated with a company's activities. Using science-based pressure-impact functions (GLOBIO model[147]), IDL tool then translates all the four modelled pressures into biodiversity impacts calculated in km^2 MSA in a given year.

- *A company reporting data on biodiversity pressures associated to its activities is still a rare practice, most of the data used is modelled data. IDL publishes a Data Quality level indicator for each company analysed to track reported versus modelled data.*

Impacts are then aggregated into an overall absolute footprint on a company level – CBF.

Case study – Nestlé SA (Agri-food company)
The biodiversity footprint of Nestlé is specifically driven by the presence of such high-impact commodities in its product mix as chocolate and animal-related products, which require high land use occupation including to breed and feed the dairy cattle (Scope 3 upstream). We note a decrease in CBF measure for Nestlé versus last year's mapping. This decrease is mainly due to a better mapping of the activities related to manufacture of cocoa, chocolate, and sugar confectionary, which accounts for 10% of the company's revenue. The CBF now more accurately reflects the volumes of commodities involved with this economic activity per 1M EUR of revenue. In particular, the consumption of cocoa and sugar by Nestlé was adjusted downwards to better represent actual volumes consumed. Because of the relatively high impact on land use that both these commodities have, their reduction in volumes led to a reduction in CBF, despite the sector being marginal in terms of revenue. The mapping was improved at the moment of the Iceberg Data Lab methodology update in 2022.

CBF at a sectoral level

In the context of rising environmental transition risks, those who seize this transition opportunity first will win economically while bringing real solutions on the ground to protect biodiversity and preserve human living conditions. Most naturally, the high nature dependent activities and sectors, like food industry, represent the biggest challenges (food sector alone is responsible for almost 60% of global biodiversity loss[148]), but also provide the biggest opportunities in terms of transition towards sustainable consumption and development.

Agriculture, cattle breading, fishery as part of food value chain are traditionally viewed as having important impacts on biodiversity and at the same time being dependent heavily on nature. Unsustainable livestock management, forestry, mining, construction, chemicals, infrastructure, energy (incl. fossil fuels and biofuels)[149] are often associated with land-/sea-use change, natural resources overexploitation, inefficient production, and waste management.

[147]The GLOBIO model calculates only local terrestrial biodiversity intactness via MSA (sea or ocean are not considered): GLOBIO - Global biodiversity model for policy support - homepage | Global biodiversity model for policy support
[148] Building sustainable food systems | WWF
[149] Global Assessment Report on Biodiversity and Ecosystem Services | IPBES secretariat

Last findings based on a combination of the three widely used biodiversity-specific tools (IDL, CDC Biodiversité[150] and ENCORE[151])[152] have identified **Agrifood, Mining, Manufacturing industries** as both most impactful and most dependent on biodiversity followed by **Construction, Transportation and Energy**. The new study by Finance for Biodiversity Foundation confirmed and refined these conclusions[153]. These are the sectors AXA IM would consider focusing on in the next years to accompany those in reduction of their biodiversity footprint.

N.B.: IDL methodology has some sectoral limitations. For instance, IDL informs clearly that energy consumption of very small electrical motors is overestimated due to general methodological assumptions, etc.

Companies in these sectors putting in place transition solutions will register better results in terms of production processes efficiency (operating cost reduction), will be more open to integrate innovation and new opportunities as well as will have better control over their resources and supply chain, which will make them more resilient in the long run[154].

The implications of biodiversity loss may vary not only from one industry to another, but also across geographies. In its 2021 study[155], Moody's analysts show that approximately 60% of global biodiversity-related controversies registered in its database originated from four countries: US, Indonesia, Malaysia, and Australia. AXA IM considers using IDL CBF not only to identify most risky sectors and issuers, but also to trace the exposure of those throughout the associated value chains to identify commodities, activities as well as geographies exposed. Surely, this will require the biodiversity data and tools (including CBF) maturing progressively and moving from modelled to reported and much more locally specific data, which we hope to see in the future.

CBF at a portfolio level: AXA IM biodiversity footprint pilot

IDL calculates a biodiversity footprint on a company level, which can then be aggregated at a portfolio level following the same logic and aggregation metrics as for portfolio carbon footprint. Biodiversity footprint on a portfolio level is then estimated in km^2.MSA / M€ invested. Note that currently, CBF data aggregation on a portfolio level is done without treating double counting, this may change in the future.

AXA IM Biodiversity Dashboard

End of 2022, IDL conducted a major methodological update impacting biodiversity footprint across sectors driven by a mapping improvement of sectors with new commodities and activities introduced in the model. Among most significant changes - Consumer Staples and Financial sectors specifically. We discuss the evolution for Financials in more details here below. As for Consumer Staples, as a result of a more granular and precise commodities mapping (including food commodities, namely meat and dairy) some companies within this industry have seen their footprint to increase. Other methodological

150 CDC Biodiversité | Parce que la biodiversité est essentielle (cdc-biodiversite.fr)
151 ENCORE (naturalcapital.finance)
152 Biodiversity measurement for the financial sector: A Guide & comparison on practical applications (europa.eu)
153 Top10_biodiversity-impact_ranking.pdf (financeforbiodiversity.org)
154 EU: 11/12/20 EU 2030 Biodiversity Strategy (EU Green Deal Long View)
155 "Controversy risk assessment: a focus on biodiversity", Moody's, May 2021. Available at: 60af61a9367371598fa6b807_BX6580_MESG_Biodiversity Controversies_27.05 (FINAL).pdf (website-files.com)

improvements include improvement in the granularity of distinction between activities of a company, extension of the scope of the downstream impact (for instance, in the Retail sector), etc.

For instance, the CBF of Amazon.com increased significantly due to the correction of the sector of Retail sale via mail and order house in the new methodology. This segment, which is Amazon's biggest source of revenue, now is better mapped in terms of commodities reflecting Amazon's variety of sold products. The increase of the number of commodities, as well as the high volumes of each explains such important rise in Amazon's CBF (the footprint grew more than ten times its value).

We looked into this evolution of the methodology for the two funds (one managed by AXA IM UK Ltd and AXA Fund Management) presented here and state our key observations as regards their biodiversity footprint:

Biodiversity footprint
AXA Framlington Global Thematics Fund (Equity)

-0,015 km².MSA/M€ invested
-0,049 km².MSA/M€ invested
Portfolio coverage 83%

The sum of four biodiversity impacts (climate change, land use change, water and air pollution), associated with the respective pressures on biodiversity generated by investees' economic activities across their value chain, constitute overall biodiversity footprint.

Biodiversity footprint
AXA WF Euro Sustainable Credit Fund (Fixed Income)

-0,108 km².MSA/M€ invested
-0,116 km².MSA/M€ invested
Portfolio coverage 77%

The sum of four biodiversity impacts (climate change, land use change, water and air pollution), associated with the respective pressures on biodiversity generated by investees' economic activities across their value chain, constitute overall biodiversity footprint.

N.B.: These funds are not managed by AXA IM Paris SA nor AXA REIM SGP SA. They are respectively managed by AXA IM UK Ltd and AXA Funds Management, and presented here as examples for our portfolio biodiversity footprint framework.

Equity Fund - biodiversity footprint (Changes tracked based on holdings as of 30 December 2022 weighted by individual normalized CBF)	Fixed Income – biodiversity footprint (Changes tracked based on holdings as of 30 December 2022 weighted by individual normalized CBF)
Under the new methodology with updates introduced by IDL the Equity fund footprint slightly increased in comparison to the previous version of the model. **The top 3 largest contributors in terms of sectors are Consumer Staples, Financials and Consumer Discretionary**. These sectors drive by increases in the footprint of the fund. **Key issuers contributing to the footprint are Unilever and Kerry Group for Consumer Staples, Amundi SA and Julius Baer Group for Financials as well as Amazon.com Inc for Consumer Discretionary**. The change of methodology also generates changes in the Top10 contributors for the fund,	Under the new methodology with updates introduced by IDL the Fixed Income fund footprint slightly decreased in comparison to the previous version of the model. This improvement may be driven by a slight increase in data coverage and mapping, but also can be explained by an improvement of footprint of banks in the financial sector. Still, **Financials remain amongst the top sectors contributing to the footprint of the fund along with Consumer Staples and Materials**. **Key issuers contributing to the footprint are Carrefour for Consumer Staples sector, Soc Gen SA andbnP Paribas for Financials as well as Arkema SA for Basic Materials. Danone SA can**

with three new names appearing: Amundi SA, Amazon.com Inc and Thermo Fisher Scientific Inc.

This is mostly due to the importance of Scope 3 impacts for the issuers in Consumer Discretionary and Consumer Staples sectors stated above: Scope 3 upstream with land use change impacts predominantly driving the footprint. For financial activities we note the importance of Scope 3 downstream impact represented by financing and investment activities for the companies highlighted above.

also be highlighted among top contributors to the fund footprint as part of Consumer staples.

Carrefour is among the new names highlighted in the Top10 contributors list provided the change of methodology.

This is mostly due to the importance of Scope 3 impacts for the issuers and activities stated above: Scope 3 upstream with land use change predominantly, but also to a much smaller extent air pollution and GHG emissions. For financial activities we note the importance of Scope 3 downstream impact represented by financing and investment activities for the companies highlighted above.

The CBF model limitations and constant evolution of the IDL model discussed in the previous paragraphs must be re-emphasized as the gradual strengthening of the tool through users' feedback, as well as methodology strengthening and reported data enhancements are likely to lead to a high level of volatility in the metric disclosed from one year to another.

The methodological constraints pertaining to the financial sector specifically must be equally highlighted: most of the impact coming from Scope 3 downstream related to investment and financing activities of Financials, the modelling of this impact is highly dependent on the level of disclosure (volumes of revenues associated by type of activity, sectorial allocation of funding, etc.) on each of the categories of financial activities (loan book, fund management, intermediation, and other financial services, etc.). Relative transparency on loan books is currently provided by the banks and as part of the global methodology update IDL started mapping other activities like asset management, which explains the appearance of Amundi SA in the Top impacting positions for the Equity fund presented above. However, in the absence of proper disclosure on sectorial / company composition of financing and investment portfolios we deal with a high level of approximation in calculations based on modelled data to derive a biodiversity footprint for a financial institution. More specifically, an average footprint of the IDL universe is applied in such cases of lacking disclosure. Hence, when there is a significant model update impacting the footprint across sectors in the IDL universe the footprint of financial institutions may be significantly impacted. This was the case with the IDL methodology update that took place end of 2022 as presented here above.

As a matter of fact, proper disclosure is one of the important factors for the improvement of the IDL biodiversity footprinting measure in general for all the sectors. This was part of our focus as regards our biodiversity engagements conducted in 2022 with the goal to increase awareness of companies on the matter of their impacts on biodiversity and encourage them to develop first approaches to reduce those impacts. Among the companies engaged with in 2022 there were Unilever and Carrefour.

In addition, there are other factors that may be responsible for variations in footprint of a sector or a fund, namely the economic denominator (EVIC or Market Cap) used to calculate intensity on a company level can introduce bias linked to change in financial state of the company or its share price. For instance, Carrefour and Société Générale have quite similar CBF intensities, however Carrefour's absolute biodiversity impact (nominator) is almost two times the size of Société Générale's. In this case it is the denominator that normalises the footprint such that the intensity of these two issuers is of similar magnitude. This illustrates the importance of being attentive to financial factors that can distort measure of biodiversity intensity in different sectors but also within the same sector.

Generally, CBF provides a relative measure of biodiversity footprint on a company level – a footprint based on scientific proxy estimations of species abundance, making it difficult to establish a link between action on such proxy and an actual positive change in terms of biodiversity restoration on the ground. IDL considers that today the impact data calculated reaches a satisfying level of quality, meaning that in most cases biodiversity impact on a corporate level is modelled based on company's reported sales by segments (with inputs and outputs as well as pressures being then modelled based on sectoral averages). And if disclosure by companies on some Scope 1 and 2 pressure data (like GHG emissions, etc.) increases progressively, Scope 3 remains totally modelled. CBF is thus not a reality representing impact metric, but a theoretical proxy allowing to identify economic activities most at risk of contributing to biodiversity loss.

Still, with the first data appearing and calculation of footprint having become possible (despite limitations), AXA IM is endeavoring to support development of biodiversity-specific metrics and indicators by integrating, testing those as well as sharing our experience and feedback with broader investor community, our clients and tool developers as IDL.

Namely, currently, IDL counts around 3,500 values covered in its global universe. The IDL global universe construction is mainly based on such market indices as: MSCI ACWI index, Euro Stoxx 600 index, Bloomberg Barclays Euro Aggregate index, etc., and the coverage may grow over time with the development of IDL biodiversity footprint solution. Small and medium companies are less represented in the IDL global universe, which makes their coverage less extended in comparison to large capitalisations. As of today, IDL solution provides CBF measure for corporate issuers mostly, but IDL works to develop approaches to measure biodiversity footprint for sovereign issuers or private assets (infrastructure and real estate). We will closely follow the evolution of the IDL tool on these matters.

8- Our ESG risk management process

8.1 Identification and mitigation of key sustainability risks

General approach to identify and mitigate sustainability risks

With respect to the financial products that it manages as well as investment advice it provides, when relevant, AXA IM uses an approach to sustainability risks that is derived from the integration of ESG criteria in its research and investment processes. We have implemented a framework to integrate sustainability risks in investment decisions based on sustainability factors which relies notably on:

1. **sectoral and normative exclusions policies** (see section 1.2 on "Exclusion policies");
2. **proprietary ESG scoring methodologies** (see section 1.2 on "ESG scoring methodologies").

These policies and methodologies are each further described below. We believe that they contribute to the management of sustainability risks in two complementary ways:

1. exclusion policies aim to **exclude asset exposed to the most severe sustainability risks** identified in the course of our investment decision-making process;
2. the use of ESG scores in the investment decision process enables AXA IM to **seek lower sustainability risks**, and to whether **focus on assets with an overall better ESG performance and to seek lower sustainability risks** or **ascertain on a current level of ESG performance of our assets and improve it over time**.

Complementing these global approaches, AXA IM has integrated specific sustainability risk assessments within its investment processes for some portfolios for which market-based data or ESG scoring methodologies do not exist, such as within specific non-listed asset classes.

This framework helps us to ensure we consider how sustainability impacts on the development, performance, or position of a company or an asset, as well as having material effects on the financial value in a broad sense (financial materiality). It also helps us to assess the external impacts of an asset's operations or activities on ESG factors (ESG materiality).

This framework is complemented with:

- **In-house ESG research** on key themes including climate change, biodiversity, gender diversity, human rights and human capital management, responsible tech as well as on corporate governance, supported by broker research as well as regular meetings with companies, participation to conferences and industry events. This research helps us to better understand the materiality of these ESG challenges on sectors, companies, asset type and countries.
- **Internal qualitative ESG** and **impact analysis** at companies, assets and countries levels.
- **ESG key performance indicators (KPIs)**: investment teams have access to a wide range of extra-financial data and analysis on ESG factors, across asset classes. More specifically, for traditional asset classes, a package of Environmental KPIs is available in an internal Front Office tool to allow the understanding and analysis at issuer level. This leverages our relationship with providers such as MSCI, S&P Global Trucost, and Beyond Ratings. For some alternatives asset classes related to direct project financing, such as Real Estate and Infrastructure, ESG indicators are sought from the underlying investment or asset through due diligence questionnaires and annual review via sector specific proprietary ESG scoring methodologies.

- **Stewardship strategy**[156]: we adopt an active and impactful approach to stewardship (engagement and voting) by using our scale as a global investment manager to influence company, key stakeholders and market practices. In doing so, we strive to reduce investment risk and enhance returns as well as drive positive impacts for our society and the environment. These are key to achieving sustainable long-term value creation for our clients. Our engagement policy is further described below.

If such sustainability risks materialise in respect of any investment, they may have a negative impact on the financial performance of the relevant investment. AXA IM does not guarantee that the investments are not subject to sustainability risks to any extent and there is no assurance that the sustainability risks assessment will be successful at capturing all sustainability risks at any point in time. Investors should be aware that the assessment of the impact of sustainability risks on the performance is difficult to predict and is subject to inherent limitations such as the availability and quality of the data.

AXA IM Emerging Risk Management framework

The Emerging Risk Management Framework aims to ensure the consistency of the process of identification, assessment, mitigation and management of the emerging risks faced by AXA IM.

Emerging risks are those which may develop in the future, or which already exist and are continuously evolving. They are marked by a high degree of uncertainty, and some of them may even never emerge. Emerging risks can have potentially serious consequences if they are not anticipated in a timely manner.

Chief Risk Officers are responsible for early detection of risks. The objective of emerging risk management is to reinforce the anticipation and monitoring dimension of risk management.

The Emerging Risk Management Framework is designed to enhance AXA IM's understanding of these risks and allow us to adapt our business and processes accordingly. By encouraging a foresight approach, it is also an opportunity for risk management functions to contribute to the strategy of the company.

Emerging risk definition

Emerging risks are those that could potentially be impactful in the next five-to-10 years. They are defined as either new risks, or risks that already exist but one or more of the components of the risk's current dynamics are not adequately understood, be it hazard, exposure and/or vulnerability to the hazard.

2022 outcomes

The Emerging Risk Management Framework includes:

- **Risk identification**: The risk identification is performed through interviews with key stakeholders from a large number of AXA IM departments (including investment platforms, client group, legal, the regulatory development team, innovation team, responsible investment team, HR, etc.) and with inputs from AXA IM executives;

[156] See AXA IM's Stewardship & Engagement policies: [Stewardship & Engagement | Responsible Investing | AXA IM Corporate (axa-im.com)]

- **Risk prioritization**: All risks are assessed according to their severity and their impact time horizon. Risks are then prioritized using the severity assessment performed, and based on any other relevant prioritization criteria;
- **Mitigation actions**: As part of this exercise, existing mitigation plans are identified, and new mitigation plans are agreed where relevant.

The outcomes of the emerging risks exercise are discussed at the AXA IM Global Risk Committee. We are progressively integrating the identification of ESG-related risks withing our Emerging Risk Management Framework. As such, in 2022, risks related to ESG, climate change, biodiversity and more broadly linked to the deployment of sustainability-related regulations, are included in the top emerging risks identified for AXA IM. To mitigate these risks, a specific internal governance is now in place, involving stakeholders dedicated to sustainability-related topics.

Main identified sustainability risks

Sectors and activities excluded as part our AXA IM sectoral and normative exclusion policies (see section 1.2 on "Exclusion policies") constitute the main ESG risks identified. In addition, key ESG thematics covered by our engagement strategy constitute another layer of identification of our main ESG risks.

As the quantitative assessment of financial risks linked to the materialization of ESG criteria is not systematic at AXA IM, the table below lists the main ESG risks identified through the application of our RI framework, without these being considered exhaustive or definitive:

ESG thematic	ESG topic	Description of identified risk	Type of risk	Related sectors / activities	Action plan to mitigate identified risks		
					Integration in AXA IM exclusion policies	Integration in AXA IM engagement policies	Quantification of financial risks[157]
Environmental	Impacts of climate change	Potential impacts and financial implication resulting from increased greenhouse gas emissions (see section 6.5 on 'Physical risks')	Systemic and physical risks	All	n/a	No	Yes, using Climate VaR (see section 6.5)
	Impacts of biodiversity loss & ecosystem collapse	Potential impacts and financial implication resulting from loss of ecosystem assets and services (see section 7.)	Systemic and physical risks	All	n/a	No	No
	Fossil fuel	Potential financial implication related to the implementation of energy transition policies resulting in loss of value from fossil fuel-related activities	Transition risks	Coal mining and coal-based energy production; oil sands production and oil sands-related pipelines; shale and tight oil and gas; arctic oil and gas	Climate risks policy	Yes	Yes, using Climate VaR (see section 6.5)
	Deforestation	Potential financial implication related to the implementation of forestry protection policies in countries with high risk of land use change	Transition risks	Palm oil & derivatives; soy meal, oil & derivatives; cattle products; timber products	Ecosystem protection & deforestation policy	Yes	No

[157] Beyond climate change for which financial value-at-risk model exists, quantification of the financial risk of any other ESG criteria using forward-looking data is not yet available in the market. On biodiversity (incl. deforestation), we plan to move progressively towards quantification of financial risks in the mid-term as we anticipate significant financial materiality related to biodiversity loss & ecosystem collapse. However, this is still pending additional guidance to corporates and financial institutions helping the industry to strengthen biodiversity strategies, in particular development of similar value-at-risk models for natural resources and ecosystemic services, for which there is not predicted date at this stage. As for social and governance issues, we do not plan to quantify financial risks using forward-looking data as our current approach consisting in providing qualitative research and in identifying severe controversies appears consistent from a financial risks management perspective. We will update our continuous improvement plans regarding quantification of financial risks related to ESG criteria each year.

	Speculation on food commodities	Potential economic consequences and financial implication related to the commodities price market volatility	Reputational risks	Food commodities	Soft commodities policy	n/a[158]	No
Social	Controversial weapons	Potential financial, reputational and legal implications related to invest in banned and controversial weapons	Reputational and/or litigation risks	Controversial weapons	ESG Standards policy	Yes	No
	Health	Potential financial, reputational and legal implication related to invest in companies with health and/or nutrition controversies	Reputational and/or litigation risks	Food & beverage, pharmaceutical	n/a	Yes	No
		Potential financial, reputational and legal implications related to invest in tobacco	Reputational and/or litigation risks	Tobacco production	ESG Standards policy	Yes	No
	Human right,s incl. labor and society	Potential financial, reputational and legal implications related to invest in companies or countries with labor, society and/or human rights controversies (incl. cyber security and data privacy, gender and ethnic diversity)	Reputational and/or litigation risks	All (incl. companies and countries where serious violations of Human rights are observed, and white phosphorus weapons production)	ESG Standards policy	Yes	No
Governance	Business ethics & corruption	Potential financial, reputational and legal implications related to invest in companies or countries with business ethics and/or corruption controversies	Reputational and/or litigation risks	All	ESG Standards policy	Yes	No

Source: AXA IM, 2023.

Except for some specific activities such as oil & gas production in Arctic, the main sustainability risks are identified at a global scale without specific geographical discrimination. In addition, in some cases, our ESG quantitative and qualitative research provides specific assessments based on criteria or issues materialized at certain specific geographical scopes.

8.2 Internal controls & audit

All our ESG policies and integration factors are covered by AXA IM's control framework, with responsibilities spread between the first level of controls performed by the business and second level of controls performed by dedicated teams.

Standard level of internal controls

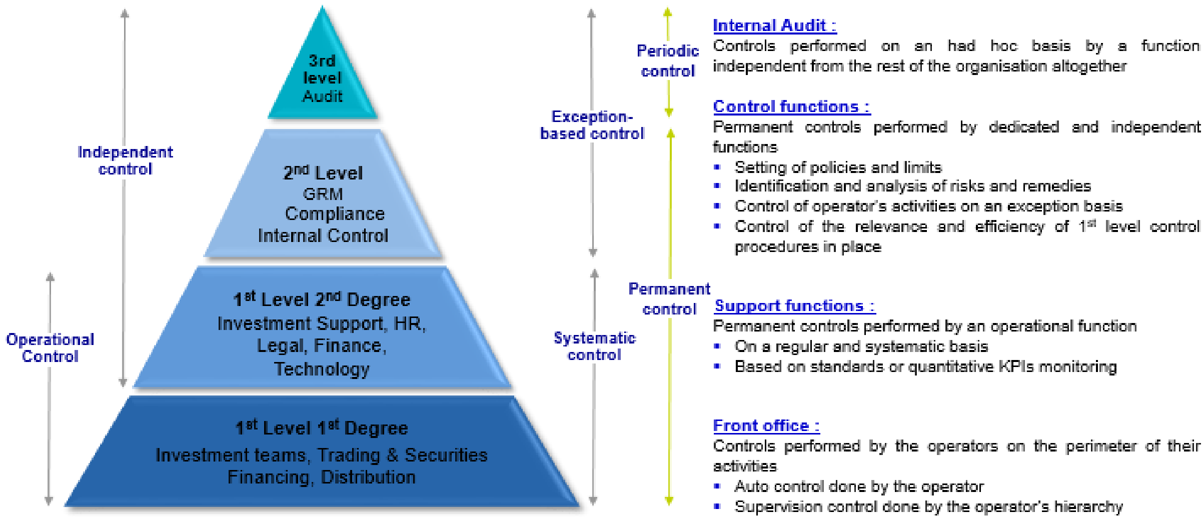
ESG-related investment guidelines consist of the implementation of our exclusion policies, as well as of eligibility criteria and rules specific to funds which have been awarded sustainability-related labels. They are monitored by:

- The portfolio management teams are primarily responsible for the implementation of policies and commitments. Funds' specific responsible investment objectives are reported in monthly Investment Oversight Forums. Following ban lists and/or eligible universe updates, portfolio managers divest from issuers taking into account both a client's as well as the fund's best interest;
- A dedicated Investment Guidelines (IG) team or equivalent ensures independent and systematic pre- and post-trade controls on policies and fund-level commitments. This team monitors the

[158] As exclusion of soft commodities is done at an instrument level across all food commodities futures and ETFs.

correct application of the exclusion lists derived from top-level RI policies and ESG Standards and other fund-specific commitments as mentioned in their regulatory documentation;

- The Compliance department carries out *ad hoc* controls on the work performed by the IG team;
- For AXA IM Core, the Risk management department assess the likely impact of sustainability risks in the products' return and classifies them within three levels: low, medium, or high; for AXA IM Alts, this assessment is performed by the internal controls team for Real Estate & Infrastructure and by the business teams for other alternative asset classes;
- The Audit department performs periodic controls. Audits are performed according to an annual risk-based audit plan, which is approved and monitored by our governance bodies, in particular the AXA IM Audit & Risk Committee. Higher risk areas and those that are required by regulations to be covered regularly are subject to audits on a more frequent basis compared to the less risky areas, which are covered over a longer cycle.



Source: AXA IM, 2022.

Regularly, through the integration of a wide range of ESG KPIs into our Front Office tools available for traditional asset classes, investment teams are able to analyse and monitor each individual holding and the portfolio positioning on ESG factors and ESG related metrics.

Pre-trade controls are performed by the business teams themselves. The COO ensures that fund managers divest all investments in restricted companies and do not invest in restricted companies as long as there are restricted or absent new instruction.

Our IG team is monitoring the correct application of the exclusion list with pre-trade and post-trade monitoring systems. Following the update of the eligible universe, the portfolio manager divests from assets taking into account both a client's as well as fund's best interest. These ban lists are integrated into our Front Office tools.

The Compliance and Risk Management teams are part of the RI governance committees. They oversee the adherence to regulatory requirements and management of risks related to these topics, through control plans which cover RI-related processes. At AXA IM, the Compliance department is in charge of monitoring regulatory changes and works closely with investment teams as well as responsible investment professionals and Risk Management department.

Moreover, as part of the sustainability-related regulatory changes, AXA IM has launched several working groups that are in charge to monitor regulatory changes related to responsible investment, to define our position, set up action plans and to adapt our commercial offer. In addition, we participate and share our views with industry bodies such as the EFAMA and regulators.

Additional level of internal control for Real estate direct property

Direct property provides us with ability to collect directly actual data. As an example, a large number of ESG data are collected and stored in an ESG data management platform for real estate properties. The data are collected directly in the platform by the property managers, supervised by our asset management team. We utilize both internal and external data controls to ensure the quality of the data. Throughout the data collection process automated and manual data controls are undertaken within the platform and by asset managers, the RI team and an external auditor.

Automated alerts have been set in our platforms to flag any inconsistency in the data collected or flag potential risks. Several alerts, which flag sensitive information, are a mandatory stage of the data collect process for our property managers, who are incentivised on their ability to comply on our data collect requirement.

At the end of the data collect process, qualitative and quantitative data automatically populate the ESG rating form and the GRESB rating form in Deepki. Asset Managers are required to verify and validate the data directly implemented in the form. In case of a discrepancy, they need to correct the data in the input sections. At the end of the review, they are required to formally validate they have reviewed the information.

After the end of the data collect, the RI team performs additional data control, using an Excel extract of all the data reported, by performing several consistency tests. If discrepancies are identified, the RI team contacts the asset manager to collect explanations and evidence on the data and check the data accuracy. Data are also communicated to fund teams for them to perform additional consistency checks based on their knowledge of the assets. If an issue is flagged, it is communicated to the RI team who coordinates with the Asset Management team.

Finally, AXA IM has mandated PwC as an independent third-party auditor to audit data collected, at AXA REIM SGP SA entity level, as well as for each fund participating to the GRESB (see Appendix 6). Data process and quality are audited against the international framework "Assurance engagements other than audits or reviews of historical financial information" (ISAE 3000) for Limited Assurance Report. The audit takes place from April to June.

8.3 Factoring climate risks in Real assets management

Resilience is the second pillar of AXA IM Alts' ESG strategy. The impacts of climate change represent a number of new risks to our investments. For AXA IM Alts, the most material are physical risks (such as from increasing extreme weather events) and transitional risks (such as from changes to regulations as major economies work toward a low-carbon future). These changes also bring new opportunities to add value. We are rapidly building our ability to identify and act on these risks and opportunities, improving the resilience of our investments and strengthening their ability to withstand some of the impacts of climate change.

Extreme weather events costs and physical risks assessment of Real assets

Physical risks are those that are already arising as a result of the rise in temperatures and of the increase in extreme weather events occurrence and magnitude. Potential costs of climate change damages could equate up to 10% of the global current GDP value in a world at 1.5°C and up to 23% in a world at 3°C, which represent what current countries' commitments support[159]. The last IPCC report on the impacts of a global warming of 1.5°C[160] showed that such temperature rise above historical levels would lead to unprecedented impacts for the nature and human beings.

Our work on physical risks is exploratory and can be categorized in three parts:

- Assessment of Real Estate portfolio exposure to climate risks across AXA Group's investments using insurance risk management natural catastrophe models;
- AXA IM Real Assets Australia Ltd partnering with Deloitte on physical risk assessments of cities in Australia and Asia;
- Assessment of listed assets physical risks exposure using Carbon Delta extreme weather events costs.

Focus on AXA IM Alts – Real Estate: resilience tests on property portfolio

At AXA IM Alts, we take a comprehensive approach to considering the physical and transitional impacts of climate change. Focusing on the physical risks and the resilience of the real estate portfolios, in 2019, AXA IM Alts built on current engagement with AXA Natural Catastrophes (NatCat) teams within the AXA Group for a better understanding of physical risk exposure. Utilising these tools, the Real Estate team now has visibility on the level of risk exposure in relation to natural hazards across the global real estate portfolio and CRE Debt portfolios.

With this level of understanding of physical risk exposure at both the asset and portfolio level to flood, earthquake, hail and windstorm, we have begun to identify assets with higher levels of climate risk exposure to set in place adaptation plans in order to mitigate risk from a physical perspective. The risk level identified is driven by three components: the hazard (defined by severity and frequency), the exposure (characterized by the building's physical properties) and the vulnerability (defined by destruction rates, function of the hazard and the exposure).

In 2022, this climate risks assessment risk was extended to CRE debt investment management as well. We also monitor the international and local transitional regulatory landscapes to anticipate market legislations that will influence the liquidity of assets and act upon such notions in order to avoid the risk of stranded assets.

By formally integrating this analysis within AXA group tools into the investment process for real estate and CRE debt, we intend to not only understand risk based on historical events, but to better understand future risk associated with climate change for a clearer view on the climate value-at-risk

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159 CRO Forum, 2019.

160 See IPCC (2018), *Global warming of 1.5°C, An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*: https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf

of the portfolio. We plan to further integrate climate risk assessment in our infrastructure equity and debt investment platforms.

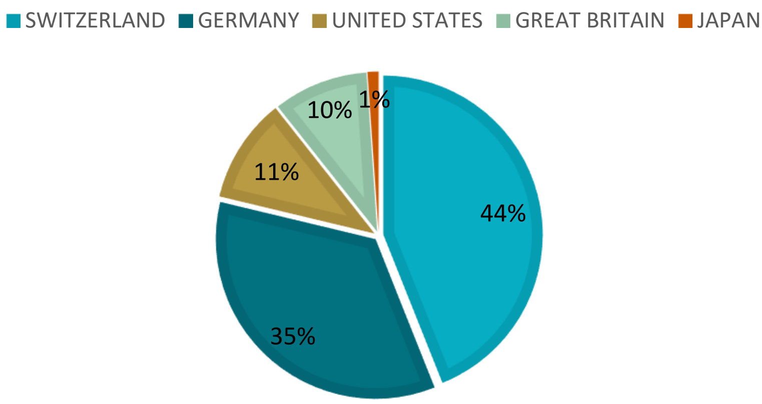
Physical risks assessment of real estate portfolios through the Clymene analysis

Since its inaugural Climate Report (2016), AXA IM Ats has studied the effects of climate change on its real estate holdings. This analysis covers a range of direct property investments totalling more than **€86bn in 2022**[161]. Our Responsible Investment and Risk Management teams analysed the financial impact of floods, windstorms, and hail on these properties in a selection of 20 countries.

According to research utilising AXA's proprietary "Clymene" analytic platform, average annual losses (ALL) are still small in comparison to the value of all assets. The analysis currently uses asset-level data that depends on the geolocation of buildings as well as their primary occupancy. The key figures below provide the results of the assessment based on the average annual loss for each country.

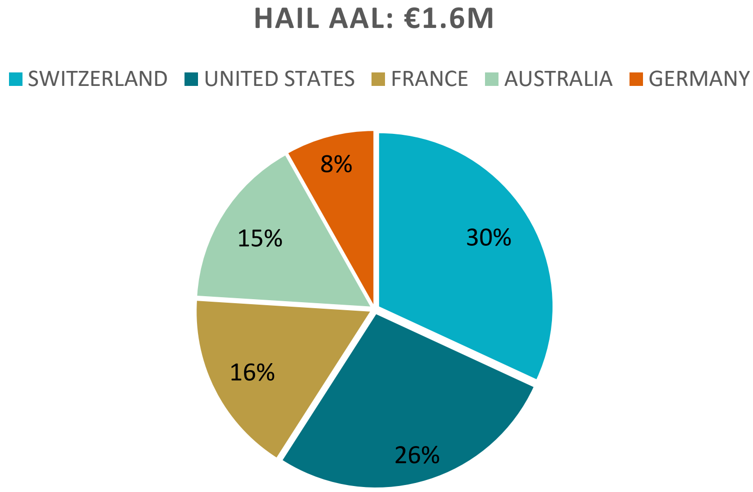
AXA IM Alts's real estate exposure is global with most of the portfolio at risk located in Europe (76%). The portfolio's highest risk exposure is to flood (46% of ALL), followed by hail (26%) and windstorm (27%). Total average annual loss for the 2022 real estate portfolio amounted to an estimate €10.3M. This figure was calculated in proportion with AXA IM's stake in each property. Furthermore, Switzerland leads the AAL in terms of the risk of flooding (44%) followed by Germany (35%) and the United States (11%) and Great Britain (10%). France, Japan, the United States, Great Britain, and Germany account for 79% of the average yearly loss due to windstorms. Switzerland, the United States, France and Australia make up 87% of the AAL for hail hazard.

FLOOD AAL: €2M

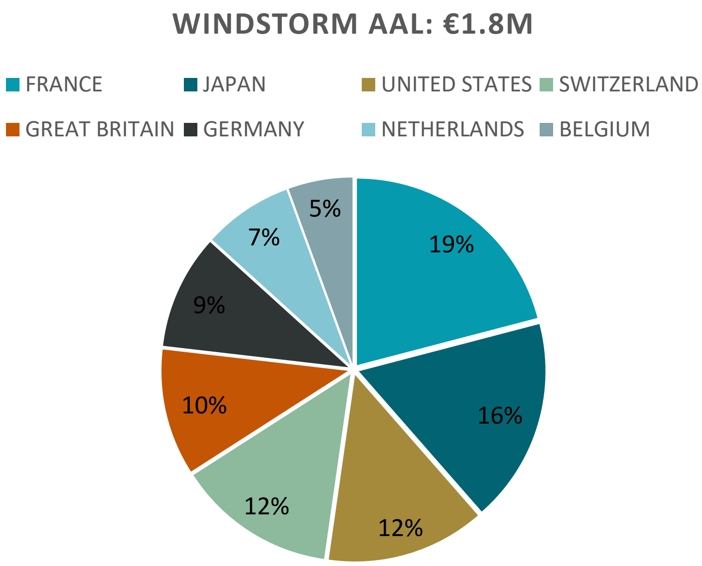


Flood AAL split by country. Source: AXA IM, 2022.

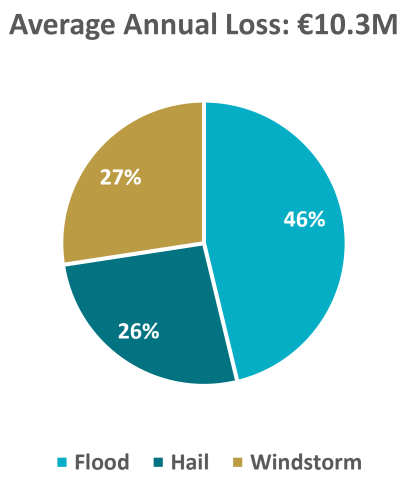
[161] Representing real estate assets managed by AXA IM Alts with available data as of 31/12/2022.



Hail AAL split by country. Source: AXA IM, 2022.



Windstorm AAL split by country. Source: AXA IM, 2022.



Average annual loss due to Wind, Flood and Hail perils on AXA IM's real estate portfolio. Source: AXA IM, 2022.

Integration of physical risk assessment of real estate portfolios in the investment decision

Through the use of internal AXA tools such as the underwriting Aegis tool and the Clymene platform, AXA IM Alts' investment team has been able to identify buildings with higher levels of historical physical risk, to be addressed by the asset management teams tasked to develop subsequent adaptation responses as a result. Some projects were undertaken in 2020 to obtain a proof of concept and advance to a portfolio wide analysis of future scenarios, including models from MSCI Carbon Delta and AXA Climate.

For a pan-European real estate portfolio, MSCI Carbon Delta modelled resilience to transitional and physical risks in relation to climate change, a holistic approach that enabled the investment team to identify the value-at-risk of assets in the fund and the tail-risk buildings which need additional attention to develop a subsequent adaptation strategy.

As another proof of concept, in 2021, our investment teams engaged with AXA Climate to focus on physical risk using RCP 4.5 and 8.5 scenarios, to capture the normalized risk score of a representative global portfolio of 90 assets, with a deep dive into 3 assets for which they developed a detailed adaptation report to guide the asset management teams. These pilot tests enable the team to better understand the market of climate risk service providers and to develop a strategy to increase the resilience of our real estate assets utilising both backward- and forward-looking data.

In addition, AXA IM Alts is increasingly utilising the Aegis underwriting tool to strengthen the analysis of physical resilience in relation to climate change during the acquisition process. The responsible investment team supports local acquisition teams by underwriting a climate physical risk analysis of the buildings in question and incorporating the results in the technical due diligence phase. This has enabled acquisition teams to engage with their technical partners to reinforce their climate-related ambitions and include a specific adaptation strategy for those assets where required.

In conclusion, according to in-house risk modelling, the financial impacts of climate-related "physical risks" on real estate assets is currently limited. The teams at AXA IM Alts continue to collaborate with the AXA NatCat teams to better understand physical risk levels and determine appropriate adaptation efforts to limit such exposures to climatic event.

In addition to the physical risks of climate change our teams increasingly consider the risks of transition to a low-carbon economy, with specific consideration of liquidity and regulatory risk.

Transition risk assessment of real estate portfolios: a holistic approach to resilience

Physical risks are not the only Climate-related risks considered by financial institutions. Risks related to the transition to a low-carbon economy allow financial institutions to increase their resilience to new regulatory frameworks introduced in order to mitigate further financial or performance related risks. Among these efforts to identify and mitigate transitional risks, AXA IM Alts investment teams have relied on different market-standard tools, such as the Energy Performance Certificate (EU EPC) and the Carbon Risk Real Estate Monitor (CRREM) model.

Aligned with the EU Taxonomy for sustainable activities and with the MEES (Minimum Energy Efficiency Standard) regulation in the UK, the EU EPC is becoming a useful tool to determine the stock of buildings on which to concentrate the efforts to improve energy efficiency and thus reduce the carbon footprint. In addition to an EU EPC being required in order to sell or trade an asset, our conviction is that this regulatory standard will continue to be used to define minimum energy performance standards, as it is currently in the UK and Netherlands. This is now used as internal guidance by AXA's investment teams in order to limit the transitional liquidity risk of its buildings, with the goal to have at least 75% of its European portfolio with an EPC of C or better by 2025, from 45% as at of end of 2021.

The CRREM model is another tool available to benchmark buildings' energy performance against Paris Agreement targets. Importantly this tool provides science-based intensity targets for different building types, in different countries, which provide, for the first time, consistent asset level performance targets in both kWh and GHG emissions which need to be met in order for the underlying asset to align with global targets. While still in its early stages, the tool more accurately reflects the complex reality of delivering a meaningful roadmap towards carbon neutrality and continues to evolve as new data, evidence and market insight emerges.

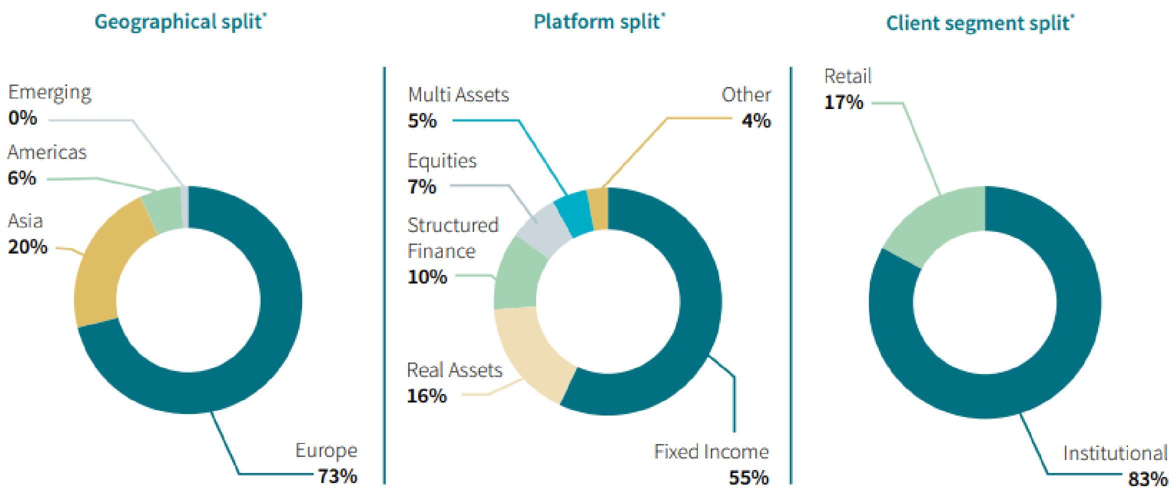
AXA IM also utilises CRREM trajectories to measure the performance of its asset as described in the AXA IM For Progress Monitor (see section 3.2).

Appendices

1. AXA IM at a glance

AXA IM at a glance – A breakdown of the assets under management across asset classes and geography:

AuM: €824.2bn



Source: AXA IM, as of end-2022.
*Figures may not total 100% due to rounding.

2. Our RI organisational chart

AXA IM Core RI professionals

Source: AXA IM as of 31/01/2023.

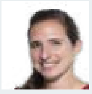
** Covering ESG analysis as part of fundamental credit research. Information regarding the background and personnel of AXA IM are provided for information purposes only. Such persons may not necessarily continue to be employed by AXA IM, and may not perform, or continue to perform services for AXA IM.*

AXA IM Alts RI professionals

Ulf Bachman
Chief Transformation Officer AXA IM Alts

RI resources in AXA IM Alts

Justin Travlos
Global Head of Responsible Investment AXA IM Alts



Juliette Lefébure
Deputy Head of Responsible Investment
AXA IM Alts - Real Estate

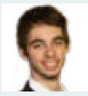
- Samiya Jmili
  Sreydao Lenain
- Thomas Van Rompaey
- Sophie de Malefette
- Daniel Bezrodnych

Local ESG Leads

Oriane Loubens
France

Valeria Bianco
Switzerland

Raphael Amajuoyi
UK & Nordics



Oscar Salling
France

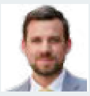
Leah Gelardini
Switzerland

Lola Araujo Hazas
Iberia & Italy

Katharina Hopp
Switzerland

Alexandre Martin-Min
Head of Natural Capital & Impact Investments

AXA IM Alts Impact Management



Jonathan Dean
Head of Fund Management Impact PE

Shade Duffy
Director of Impact Management

- Camila A. Estabridis

Information regarding the background and personnel of AXA IM are provided for information purposes only. Such persons may not necessarily continue to be employed by AXA IM, and may not perform, or continue to perform services for AXA IM.

3. List of AXA IM initiatives, codes and principles

AXA IM seeks to comply and adhere to various principles, standards, and codes, considered best practices in the market, which govern our policies and practices.

Codes / Principles	Signature date
United Nations Principles for Responsible Investment (UN PRI)	2007
UK Stewardship Code	2010; Signatory of the revised UK Stewardship Code in 2020
Japanese Stewardship Code	2014

Task Force on Climate-Related Financial Disclosure	2017

We also support and participate to a number of initiatives focusing on sustainability topics where we believe our involvement will have a material impact. These industry initiatives and groups are intended to reflect on the evolution of practices, establish standards, support companies to address global challenges and/or provide solutions. Please refer to our 2022 Stewardship report to find the list of initiatives and groups in which we are involved.[162]

4. List of AXA IM ESG commitments

Status update on our progress towards our commitments are provided within this Article 29 – TCFD combined report and in our 2022 Stewardship report[163].

Those commitments are publicly reported on the Observatoire de la Finance Durable website, a transparency tool designed to analyse the transformation of financial institutions practices and financial flow, as well as to monitor their progress on public sustainability commitments.

Year	Theme	Commitment	Link
2018	Climate	In 2018, AXA Investment Managers has committed to include "forward-looking" indicators in our climate reporting, for the scope of funds eligible of this type of reports.	AXA IM TCFD-Article 29 Report
2020	Climate	AXA Investment Managers made a commitment in 2020 to phase out coal by 2030 in the OECD and 2040 for the rest of the world.	AXA IM Climate Risks Policy To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2020	Climate	AXA Investment Managers has strengthened its Climate Risk policy in 2020 and committed to reporting on its progress in its annual reports.	Sustainability Policies and Reports | AXA IM Corporate (axa-im.com)
2020	Climate	In 2020, AXA Investment Managers made a commitment to the Net Zero Asset Managers Initiative to achieve net zero emissions by 2050 at the latest. As part of this commitment, by 2022, AXA Investment Managers will manage 65% of its total assets under management in line with the Net Zero target, representing nearly €580 billion by the end of 2021.	65% of AXA IM's total assets are managed to be in line with Net Zero | AXA IM Corporate (axa-im.com)
2021	Climate	AXA Investment Managers launched an engagement initiative in 2021 with issuers exposed to coal but whose operations are below our exclusion thresholds	Sustainability Policies and Reports | AXA IM Corporate (axa-im.com)

[162] Stewardship and Engagement | AXA IM Corporate (axa-im.com)
[163] Stewardship and Engagement | AXA IM Corporate (axa-im.com)

2021	Climate	In 2021, AXA Investment Managers has reinforced its Climate risks policy for the Oil & Gas sector, on the engagement side.	AXA IM further strengthens its climate actions to accelerate its contribution to a low-carbon world | AXA IM Corporate (axa-im.com)
2021	Climate	In 2021, AXA Investment Managers has extended its Climate risks policy to the Oil & Gas sector, on the exclusion side.	AXA IM further strengthens its climate actions to accelerate its contribution to a low-carbon world | AXA IM Corporate (axa-im.com)
2021	Climate	In 2021, AXA Investment Managers has developed a "Three Strikes and You're Out" engagement approach. In 2022, this policy applies in particular to 'climate laggards'.	AXA IM intensifies pressure on companies to take meaningful action on sustainability issues with enhanced stewardship focus | AXA IM Corporate (axa-im.com) AXA IM ramps up stewardship activity with companies with a twofold leap in engagements | AXA IM Corporate (axa-im.com)
2022	Climate	In 2022, AXA Investment Managers committed to reducing the carbon intensity of its corporate portfolios by 25% by the end of 2025.	To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2022	Climate	In 2022, AXA Investment Managers made a commitment that 50% of its direct real estate assets would be in line with the Carbon Risk Real Estate Monitor (CRREM) trajectory by the end of 2025.	To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2022	Climate	AXA Investment Managers has committed, in 2022, to a 20% reduction of the landlord operational emissions of its direct real estate assets by 2025 compared to 2019 (and a net zero target by 2050)	AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2022	Climate	In 2022, AXA Investment Managers committed to reducing its operational carbon footprint by 26% by the end of 2025.	2021 AXA IM Climate Report To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2022	Climate	In 2022, AXA Investment Managers made a commitment to engage with issuers belonging to the 70% of issues financed in the material sectors by the end of 2025.	To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2020	Biodiversity	In 2020, AXA Investment Managers launched an initiative to develop a tool to measure the impact of investments on biodiversity. Following this, AXA Investment Managers announced in 2020 a partnership with Iceberg Data Lab and I Care & Consult	AXA IM,bnP Paribas AM, Sycomore AM and Mirova launch joint initiative to develop pioneering tool for measuring investment impact on biodiversity | AXA IM Corporate (axa-im.com)

		to develop indicators to measure the impact of investments on biodiversity.	
2021	Biodiversity	In 2021, AXA Investment Managers has strengthened its biodiversity strategy by expanding the exclusions of its Ecosystem Protection & Deforestation policy (former Palm Oil policy)	AXA IM expands its palm oil policy to protect ecosystems and fight deforestation | AXA IM Corporate (axa-im.com)
2022	Biodiversity	AXA Investment Managers is committed to investing at least €500 million in natural capital solutions by the end of 2028.	To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2020	Social	In 2020, AXA Investment Managers has integrated gender diversity objectives into its corporate governance and voting policy	AXA IM to expand its gender diversity voting policy for both developed and emerging market economies | AXA IM Corporate (axa-im.com)
2015	Sustainability	AXA Investment Managers committed in 2015 to reach 75% of certified real estate assets by 2030 (in AUM). Those certifications include, among others, BREEAM and DGNB.	AXA IM Alts - ESG Strategy
2018	Sustainability	AXA Investment Managers is committed in 2018 to achieving more than >75% AUM assessed with the internal ESG rating tool (direct real estate assets)	AXA IM Alts - ESG Strategy
2020	Sustainability	In 2020, AXA Investment Managers developed a charitable scheme for its range of impact funds.	Full-year 2022 earnings | AXA IM Corporate (axa-im.com)
2021	Sustainability	AXA Investment Managers renames its Sustainable fund range in 2021.	AXA IM renames its most focused ESG funds to help simplify its sustainable range for clients | AXA IM UK (axa-im.co.uk)
2022	Sustainability	In 2022, AXA Investment Managers has reinforced its voting policy to further integrate ESG considerations into our voting. This strengthening was accentuated in 2023 with the addition of additional criteria on the governance of ESG issues, biodiversity risks, tax practices, remuneration and conflicts of interest.	AXA IM unveils new voting policy to urge investee companies to further consider environmental and social issues | AXA IM Corporate (axa-im.com)
2023	Sustainability	AXA Investment Managers is committed to ensuring that at least 70% of employees participate in at least one ESG and sustainability training or awareness session, with a focus on ESG Pillar E, by the end of 2023.	To see progress on this metric: AXA IM For Progress Monitor | AXA IM Corporate (axa-im.com)
2023	Sustainability	In 2023, AXA IM committed to align the compensation of senior executives to its ESG ambitions	AXA IM aligns compensation of senior executives to its ESG ambitions | AXA IM Corporate (axa-im.com)

5. AXA IM thought leadership: selected RI research and publications in 2022

Bringing research, insights and investment ideas to our clients is an integral part of our service. With this in mind, in June 2022, we created the AXA IM Investment Institute. This thought leadership platform brings together experts from across our research, responsible investment and investment teams, to discuss the short- and long-term trends affecting the global macroeconomic and investment landscape, to generate insights, to help clients make more informed investment decisions.

At AXA IM, we produce in-house ESG research and thought leadership on key themes including climate change, biodiversity, gender diversity and human capital, responsible technology and corporate governance. Research papers are published on the Investment Institute page of our website. This research allows us to identify ESG risks, understand and anticipate their impacts on the assets in which we invest as well as understand the environmental and social impacts of our investments. Key findings from this research also help guide adjustments to our stewardship and exclusion strategies.

Environmental

COP15: Debunking myths on biodiversity and deforestation target-setting, Liudmila Strakodonskaya, Geoffroy Dufay, 7 December 2022

Meagre but maybe meaningful: The key COP27 takeaways for investors, Olivier Eugène, 23 November 2022

COP 27: Modest hopes for a climate meeting convened in an energy crisis, Olivier Eugène, 28 October 2022

Hydrogen and the energy transition: One molecule to rule them all? Olivier Eugène, 4 October 2022

Biodiversity loss: Understanding and responding to a global systemic risk, Liudmila Strakodonskaya, Sian Long, 28 September 2022

Climate change: The relationship between net zero and rising global temperatures, Olivier Eugène, 9 September 2022

How investors can respond to the plastics invasion, Liudmila Strakodonskaya, Jules Arnaud, 1 September 2022

A ministry of all talents: Exploring technologies in the fight against climate change, Olivier Eugène, 26 August 2022

The circular economy: A potential value driver across industries, Virginie Derue, 29 July 2022

The impact of the Ukraine crisis on climate change, David Page, Olivier Eugène, 7 June 2022

Responsible investment in the shadow of the Ukraine war, Gilles Moëc, 26 May 2022

Back to our roots: How responsible investors can help tackle the biodiversity crisis, Liudmila Strakodonskaya, 22 May 2022

Carbon Capture and Storage: Hiding dirt under the rug or a real clean up? Olivier Eugène, 21 March 2022

Social

Rising social risks in emerging markets should be a catalyst for action for responsible investors, Virginie Derue, 12 December 2022

Liquid assets: Why water stress should be a priority for responsible investors, Liudmila Strakodonskaya, 5 December 2022

Bridging society's digital divide: How investors can help, Anne Tolmunen, 8 November 2022

How companies can rethink how they address social issues, Alexandre Prost, 27 October 2022

Is social the most important part of ESG investing? Chris Iggo, 27 October 2022

Four reasons why social investing will be a driver of long-term sustainability, Anne Tolmunen, 27 October 2022

Social impact: Testing a new opportunity for institutional investors, 27 October 2022

Artificial Intelligence: Responsible AI and the path to long-term growth, Théo Kotula, 26 September 2022

Climate Change: How investors can help deliver a Just Transition, Virginie Derue, 22 June 2022

More accessible and effective health solutions: What is the social impact and economic potential? Anne Tolmunen, 14 January 2022

Governance

Board ESG oversight: Embedding sustainability in corporate strategy, Héloïse Courault, 15 November 2022

Does linking ESG performance to bonuses actually work? Constance Caillet, 12 August 2022

AXA IM's voting policy: Five key questions, Clémence Humeau, 13 April 2022

6. Industry surveys

Survey	AXA IM ranking / score	Date	Link
PRI annual assessment	Investment & Stewardship policy: 4 ★ Direct – Listed Equity – Active quantitative – Incorporation: 4 ★ Direct – Listed Equity – Active fundamental – Incorporation: 4 ★ Direct – Listed Equity – Investment trusts – Incorporation: 4 ★ Direct – Listed Equity – Active quantitative – Voting: 4 ★ Direct – Listed Equity – Active fundamental – Voting: 4 ★ Direct – Listed Equity – Investment trusts – Voting: 4 ★ Direct – Fixed income – SSA: 4 ★	August 2022	2021 PRI Assessment Report

	Direct – Fixed income – Corporate: 4 ★ Direct – Fixed income – Securitised: 4 ★ Direct – Fixed income – Private debt: 3 ★ Direct – Private equity: 1 ★ Direct – Real estate: 4 ★ Direct – Infrastructure: 3 ★ Direct – Hedge funds – Structured credit: 1 ★		
ShareAction	BBB – ranked 7th /77, moving up 4 compared to the 2020 ranking	February 2023	ShareAction report
	Ranked 32/68	January 2023	ShareAction Voting Matters Report
H&K Responsible Investment Brand Index	Avant Gardist – Top Category	March 2023	2023 H&K RIBI Report
Influence Map	A	January 2021	influencemap.org Asset Managers and Climate Change 2021
	A (Stewardship)	March 2022	AXA IM implements AXA's Stewardship strategy Finance_and_Climate_Change_March_2022 (3).pdf
Climetrics 2022 rankings	21 out of 94 AXA IM funds ranked have received the best score of 5 leaves (5.46% of total 18,368 funds rated have 5 leaves).	December 2022	Climetrics - CDP
Reclaim Finance's report "Who's managing your future? An assessment of asset managers' climate action", 20223	AXA IM is assessed on various criteria regarding investments in coal, and oil & gas respectively, both on our holdings in these activities and our implemented exclusion policies.	June 2023	Rapport : "Who's managing your future?" - Reclaim Finance
Global Real Estate Sustainability Benchmark (GRESB)	In 2022, $33.6bn of AuM submitted across 19 funds, within diversified sectors. AXA IM has reached its company target to obtain the 4-star status, with an average score of 82/100 across its 19 funds (+6 points compared to 2021, +13pts compared to 2020).	October 2022	

7. Mapping tables with Article 29 implementation decree and TCFD recommendations

Article 29 of the French Energy Climate Law[164]

Decree	Content	Reference Sections
Art 1er-III- 1°	Entity ESG general approach	1.2 AXA IM Responsible Investment Framework
	Means to inform clients	1.4 Our ESG disclosure communication
	Article 8 and Article 9 financial products	Appendix 11. List of financial products referred as Article 8 or 9 under the SFDR
	List of initiatives, codes and principles	Appendix 3. List of AXA IM initiatives, codes and principles
Art 1er-III- 2°	Internal resources and means	2.1 Our human resources 2.3 Our technical resources
	Reinforcement of internal capabilities	2.2 Our training & internal capacity building resources
Art 1er-III- 3°	ESG Strategy oversight process	3.1 Our RI governance & committees
	Remuneration policy	3.2 Integration of ESG factors into remuneration policy & ESG objectives
	Inclusion of ESG criteria in the internal rules of the Board of Directors	3.1 Our RI governance & committees
Art 1er-III- 4°	Scope of the stewardship strategy	4.1 Engagement, collaboration and escalation
	Voting policy presentation	4.3 Voting - 2022 voting season highlights
	Engagement strategy results	4.2 Public policy: involvement with industry groups and policy makers
	Voting strategy results	4.3 Voting - Our ESG convictions in our voting activity
	Investment decisions following engagement	4.1 Engagement, collaboration and escalation, see sub-section “Engagement with objectives”
Art 1er-III- 5°	EU Taxonomy eligibility &	5.1 Green share of activities, see sub-section: “Sustainable share of activities following the EU Taxonomy for sustainable activities”
	Fossil fuel exposure	5.2 Exposure to fossil fuel activities
Art 1er-III- 6°	Climate strategy aligned with the Paris Agreement	6.1 AXA IM Net zero targets
	Methodologies used within the Paris Agreement Alignment strategy	6.1 AXA IM Net zero targets 6.4 Implementing our Net zero targets
	Results	6.5 Climate forward-looking metrics, see sub-section “AXA IM Climate Dashboard” (as for historical and other forward-looking climate metrics)
	Policies to progressively exit coal and unconventional hydrocarbons	6.2 Exclusions: our Climate risks policy
	Monitoring, changes and updates	6.1 AXA IM Net zero targets (as for progress measured on achieving our NZ targets)
	Biodiversity strategy aligned with long term goals	7- Our biodiversity strategy

[164] Article 29 - LOI n° 2019-1147 du 8 novembre 2019 relative à l'énergie et au climat (1) - Légifrance (legifrance.gouv.fr)

Art 1er-III- 7°	Alignment with Convention on Biological Diversity	7- Our biodiversity strategy
	Analysis of the contribution to the reduction of main pressures and impacts on biodiversity	7.3 Introducing biodiversity-specific indicators
	Biodiversity footprint	7.3 Introducing biodiversity-specific indicators
Art 1er-III- 8°	Identification, assessment, prioritization, management of ESG risks	1.2 AXA IM Responsible Investment Framework 8.1 Identification and mitigation of key sustainability risks
	Description of the main ESG risks considered and analysed	8.1 Identification and mitigation of key sustainability risks, see sub-section "Main identified sustainability risks"
	Frequency of review of the risk management framework	8.1 Identification and mitigation of key sustainability risks
	Action to reduce the entity's exposure to the main ESG risks	8.1 Identification and mitigation of key sustainability risks, see sub-section "Main identified sustainability risks"
	Quantitative assessment of ESG-related financial impacts	8.1 Identification and mitigation of key sustainability risks, see sub-section "Main identified sustainability risks"
Art 1er-III- 9°	Improvement plan and remediation actions	7- Our biodiversity strategy (as for biodiversity strategy aligned with long term goals) 8.1 Identification and mitigation of key sustainability risks, see sub-section "Main identified sustainability risks" (as for quantification of ESG-related financial impacts)

Recommendations of the TCFD[165]

Sections	Recommended Disclosures	Reference Sections
Governance Strategy	Board's oversight of climate-related risks and opportunities	3.1 Our RI governance & committees
	Management's role in assessing and managing climate-related risks and opportunities	3.1 Our RI governance & committees
	Identified Climate-related risks and opportunities over the short, medium, and long term	6.5 Climate forward-looking metrics 8.1 Identification and mitigation of key sustainability risks, see sub-section "Main identified sustainability risks"
	Impact of climate-related risks and opportunities on investment strategy	6- Our climate strategy

165 Publications | Task Force on Climate-Related Financial Disclosures (fsb-tcfd.org)

	Climate-related scenario analysis (including a 2°C or lower scenario)	6.1 AXA IM Net zero targets 6.5 Climate forward-looking metrics
Risk Management	Identification and assessment process of climate-related risks	6- Our climate strategy 8.1 Identification and mitigation of key sustainability risks 8.3 Factoring climate risks in Real assets management
	Climate-related risks management process	8- Our ESG risk management process
	Integration of climate-related risks identification, assessment and management processes into overall risk management framework	8.1 Identification and mitigation of key sustainability risks 8.2 Internal controls & audit 8.3 Factoring climate risks in Real assets management
Metrics and Targets	Metrics used to assess climate-related risks and opportunities	6.5 Climate forward-looking metrics
	Disclosure of Scope 1, 2 and, if appropriate, Scope 3 GHG emissions and related risks	6.1 AXA IM Net zero targets 6.5 Climate forward-looking metrics
	Targets used to manage climate-related risks and opportunities and performance	6.1 AXA IM Net zero targets 6.5 Climate forward-looking metrics

8. List of financial products referred as Article 8 or 9 under the SFDR

The products or strategies discussed in this document may not be registered nor available in your jurisdiction.

To the extent SFDR has been applicable for a relatively short period of time, the classification under SFDR is subject to adjustments and amendments, as certain aspects of SFDR may be subject to new and/or different interpretations than those existing at the date of this Report. As part of the ongoing assessment and current process of classifying its financial products under SFDR, AXA IM reserves the right, in accordance with and within the limits of applicable regulations and legal documentation applicable to its financial products, to amend the classification of a particular fund to reflect changes in market practice, in its own interpretations, in SFDR-related laws or regulations or in currently-applicable delegated regulations, in communications from national or European authorities or court decisions clarifying SFDR interpretations. Investors are reminded that they should not base their investment decisions on the classification presented pursuant to SFDR.

Mandates		
Investment Platform	SFDR Classification	Number of mandates
EQUITY	Article 8	6

FIXED INCOME	Article 8	141
INFRA EQUITY	Article 8	1
MULTI-ASSET	Article 8	89
REAL ESTATE	Article 8	4

Segregated funds		
Investment Platform	SFDR Classification	Number of funds
EQUITY	Article 8	124
FIXED INCOME	Article 8	57
MULTI-ASSET	Article 8 & 9	49

Open funds classified as Article 8 or 9			
Portfolio Name	Investment Platform	Managed by AXA IM Paris SA	Managed by AXA REIM SGP SA
AGIPI Actions Europe	EQUITY	X	
AGIPI Actions Monde	EQUITY	X	
AGIPI Ambition	MULTI-ASSET	X	
AGIPI Convictions	MULTI-ASSET	X	
AGIPI Grandes Tendances	EQUITY	X	
AGIPI Immobilier	REAL ESTATE		X
AGIPI Obligations Monde	FIXED INCOME	X	
AGIPI Régions Solidaire	EQUITY	X	
AXA ACT Carbon Offset Equity QI	EQUITY	X	
AXA ACT Carbon Offset Eurobloc Equity QI	EQUITY	X	
AXA ACT Green Short Duration Bond Fund	FIXED INCOME		
AXA ACT Social Progress	EQUITY	X	
AXA Aedificandi	REAL ESTATE		X
AXA Amérique Actions	EQUITY	X	
AXA Asie Actions	EQUITY	X	
AXA Avenir Infrastructure	INFRA EQUITY		X
AXA B Fund Equity Belgium	EQUITY		
AXA Belgian Equities	EQUITY	X	
AXA Chance Invest	MULTI-ASSET		
AXA CoRE Europe Fund	REAL ESTATE		X
AXA Court Terme	FIXED INCOME	X	
AXA Defensiv Invest	MULTI-ASSET		
AXA ES Long Terme	MULTI-ASSET	X	
AXA Euro 7-10	FIXED INCOME	X	
AXA Euro Crédit	FIXED INCOME	X	
AXA Euro Obligations	FIXED INCOME	X	
AXA Euro Valeurs Responsables	EQUITY	X	
AXA Europa	EQUITY		
AXA Europe Actions	EQUITY	X	

AXA Europe Opportunités	EQUITY	X	
AXA Europe Small Cap	EQUITY	X	
AXA European Infrastructure Fund	INFRA EQUITY		X
AXA Formule Autonomie	MULTI-ASSET	X	
AXA Framlington FinTech Fund	EQUITY		
AXA France Opportunités	EQUITY	X	
AXA France Small Cap	EQUITY	X	
AXA GENERATION EQUILIBRE	MULTI-ASSET	X	
AXA GENERATION EURO OBLIGATIONS	FIXED INCOME	X	
AXA GENERATION EUROPE ACTIONS	EQUITY	X	
AXA GENERATION TEMPERE SOLIDAIRE	MULTI-ASSET	X	
AXA GENERATION VITALITE	MULTI-ASSET	X	
AXA Global Health Impact Opportunities Fund SA SICAV-RAIF	NATURAL CAPITAL & IMPACT	X	
AXA Impact Fund Climate and Biodiversity	NATURAL CAPITAL & IMPACT	X	
AXA IM AC Asia Pacific ex Japan Small Cap Equity QI	EQUITY	X	
AXA IM ACT Biodiversity Equity UCITS ETF	MULTI-ASSET	X	
AXA IM ACT Climate Equity UCITS ETF	MULTI-ASSET	X	
AXA IM ACT US Short Duration High Yield Low Carbon	FIXED INCOME	X	
AXA IM EMERGING MARKETS SUSTAINABLE	FIXED INCOME	X	
AXA IM EURO 6M	FIXED INCOME	X	
AXA IM EURO LIQUIDITY SRI	FIXED INCOME	X	
AXA IM EURO SELECTION	EQUITY	X	
AXA IM Eurobloc Equity	EQUITY	X	
AXA IM Europe Short Duration High Yield	FIXED INCOME	X	
AXA IM FIIS Europe Short Duration High Yield	FIXED INCOME	X	
AXA IM FIIS US Corporate Intermediate Bonds	FIXED INCOME	X	
AXA IM FIIS US Short Duration High Yield	FIXED INCOME	X	
AXA IM Global Emerging Markets Equity QI	EQUITY	X	
AXA IM Global Equity QI	EQUITY	X	
AXA IM Global Health Feeder Fund SCSp SICAV-RAIF	NATURAL CAPITAL & IMPACT	X	
AXA IM Global Health Fund SCSp SICAV-RAIF	NATURAL CAPITAL & IMPACT	X	
AXA IM Global Small Cap Equity QI	EQUITY	X	
AXA IM InMotion French RCF Fund 2	ALTERNATIVE CREDIT	X	
AXA IM Japan Equity	EQUITY	X	
AXA IM Japan Small Cap Equity	EQUITY	X	
AXA IM Nasdaq 100 UCITS ETF	MULTI-ASSET	X	
AXA IM Natural Capital Feeder Fund	NATURAL CAPITAL & IMPACT	X	
AXA IM Opera IV SCA SICAV-RAIF	ALTERNATIVE CREDIT	X	
AXA IM Optirisk Actions Euro	MULTI-ASSET	X	
AXA IM Pacific ex Japan Equity QI	EQUITY	X	
AXA IM Partner Capital Solutions IX	ALTERNATIVE CREDIT	X	
AXA IM PRIME IMPACT FEEDER FUND I SCA SICAV-RAIF	NATURAL CAPITAL & IMPACT	X	
AXA IM PRIME IMPACT MASTER FUND I SCA SICAV-RAIF	NATURAL CAPITAL & IMPACT	X	
AXA IM Smart Matching Solutions Fund E	FIXED INCOME	X	

AXA IM Smart Matching Solutions Fund J	FIXED INCOME	X	
AXA IM Smart Matching Solutions Fund L	FIXED INCOME	X	
AXA IM US Enhanced Index Equity QI	EQUITY	X	
AXA IM US Equity QI	EQUITY	X	
AXA Immoresidential	REAL ESTATE		
AXA Logistics Europe Fund	REAL ESTATE		X
AXA Logistics Europe Master	REAL ESTATE		X
AXA NATURAL CAPITAL FUND SA SICAV-RAIF	NATURAL CAPITAL & IMPACT	X	
AXA Oblig Inflation	MULTI-ASSET	X	
AXA Obligations Objectif Rendement Responsable	FIXED INCOME	X	
AXA Optimal Income	MULTI-ASSET	X	
AXA PEA Régularité	MULTI-ASSET	X	
AXA Pension 2024 - 2026	MULTI-ASSET	X	
AXA Pension 2027 - 2029	MULTI-ASSET	X	
AXA Pension 2030 - 2032	MULTI-ASSET	X	
AXA Pension 2033 - 2035	MULTI-ASSET	X	
AXA Pension 2036 - 2038	MULTI-ASSET	X	
AXA Pension 2039 - 2041	MULTI-ASSET	X	
AXA Pension 2042-2044	MULTI-ASSET	X	
AXA Pension Long Terme	MULTI-ASSET	X	
AXA Pension Zen	MULTI-ASSET	X	
AXA Residential Europe Fund	REAL ESTATE		X
AXA SELECTIV' IMMO	REAL ESTATE		X
AXA SELECTIV' IMMOSERVICE	REAL ESTATE		X
AXA Trésor Court Terme	FIXED INCOME	X	
AXA Valeurs Euro	EQUITY	X	
AXA Wachstum Invest	MULTI-ASSET		
AXA Welt	EQUITY		
AXA WF ACT Biodiversity	EQUITY	X	
AXA WF ACT Clean Economy	EQUITY	X	
AXA WF ACT Dynamic Green Bonds	FIXED INCOME	X	
AXA WF ACT Emerging Markets Short Duration Bonds Low Carbon	FIXED INCOME	X	
AXA WF ACT European High Yield Bonds Low Carbon	FIXED INCOME	X	
AXA WF ACT Eurozone Impact	EQUITY	X	
AXA WF ACT Factors - Climate Equity Fund	EQUITY	X	
AXA WF ACT Green Bonds	FIXED INCOME	X	
AXA WF ACT Human Capital	EQUITY	X	
AXA WF ACT Multi Asset Optimal Impact	MULTI-ASSET	X	
AXA WF ACT Plastic & Waste Transition Equity QI	EQUITY	X	
AXA WF ACT Social Bonds	FIXED INCOME	X	
AXA WF ACT Social Progress	EQUITY	X	
AXA WF ACT US Corporate Bonds Low Carbon	FIXED INCOME	X	
AXA WF ACT US High Yield Bonds Low Carbon	FIXED INCOME	X	
AXA WF Asian High Yield Bonds	FIXED INCOME	X	
AXA WF Asian Short Duration Bonds	FIXED INCOME	X	
AXA WF China Responsible Growth	EQUITY	X	

AXA WF China Sustainable Short Duration Bonds	FIXED INCOME	X	
AXA WF Defensive Optimal Income	MULTI-ASSET	X	
AXA WF Digital Economy	EQUITY	X	
AXA WF Euro 10+LT	FIXED INCOME	X	
AXA WF Euro 7-10	FIXED INCOME	X	
AXA WF Euro Bonds	FIXED INCOME	X	
AXA WF Euro Buy and Maintain Sustainable Credit	FIXED INCOME	X	
AXA WF Euro Credit Plus	FIXED INCOME	X	
AXA WF Euro Credit Short Duration	FIXED INCOME	X	
AXA WF Euro Credit Total Return	FIXED INCOME	X	
AXA WF Euro Government Bonds	FIXED INCOME	X	
AXA WF Euro Inflation Bonds	FIXED INCOME	X	
AXA WF Euro Inflation Plus	FIXED INCOME	X	
AXA WF Euro Selection	EQUITY	X	
AXA WF Euro Short Duration Bonds	FIXED INCOME	X	
AXA WF Euro Strategic Bonds	FIXED INCOME	X	
AXA WF Euro Sustainable Bonds	FIXED INCOME	X	
AXA WF Euro Sustainable Credit	FIXED INCOME	X	
AXA WF Europe Ex-UK Microcap	EQUITY	X	
AXA WF Europe MicroCap	EQUITY	X	
AXA WF Europe Opportunities	EQUITY	X	
AXA WF Europe Real Estate	REAL ESTATE	X	
AXA WF Europe Small Cap	EQUITY	X	
AXA WF Evolving Trends	EQUITY	X	
AXA WF Framlington American Growth	EQUITY	X	
AXA WF Framlington Emerging Markets	EQUITY	X	
AXA WF Framlington Sustainable Europe	EQUITY	X	
AXA WF Framlington Sustainable Eurozone	EQUITY	X	
AXA WF Global Buy and Maintain Credit	FIXED INCOME	X	
AXA WF Global Convertibles	EQUITY	X	
AXA WF Global Emerging Markets Bonds	FIXED INCOME	X	
AXA WF Global Flexible Property	REAL ESTATE	X	
AXA WF Global High Yield Bonds	FIXED INCOME	X	
AXA WF Global Income Generation	MULTI-ASSET	X	
AXA WF Global Inflation Bonds	FIXED INCOME	X	
AXA WF Global Inflation Bonds Redex	FIXED INCOME	X	
AXA WF Global Inflation Short Duration Bonds	FIXED INCOME	X	
AXA WF Global Optimal Income	MULTI-ASSET	X	
AXA WF Global Real Estate	REAL ESTATE	X	
AXA WF Global Short Duration Bonds	FIXED INCOME	X	
AXA WF Global Strategic Bonds	FIXED INCOME	X	
AXA WF Global Sustainable Aggregate	FIXED INCOME	X	
AXA WF Global Sustainable Credit Bonds	FIXED INCOME	X	
AXA WF Italy Equity	EQUITY	X	
AXA WF Longevity Economy	EQUITY	X	
AXA WF Metaverse	EQUITY	X	

AXA WF Next Generation	EQUITY	X	
AXA WF Optimal Income	MULTI-ASSET	X	
AXA WF Robotech	EQUITY	X	
AXA WF Selectiv' Infrastructure	REAL ESTATE	X	
AXA WF Sustainable Equity QI	EQUITY	X	
AXA WF Switzerland Equity	EQUITY	X	
AXA WF UK Equity	EQUITY	X	
AXA WF US Credit Short Duration IG	FIXED INCOME	X	
AXA WF US Enhanced High Yield Bonds	FIXED INCOME	X	
AXA WF US High Yield Bonds	FIXED INCOME	X	
AXA WF US Short Duration High Yield Bonds	FIXED INCOME	X	
AXA WFII European Opportunities Equities	EQUITY	X	
AXA WFII Evolving Trends Equities	EQUITY	X	
AXA WFII North American Equities	EQUITY	X	
CAPITAL MONETAIRE	FIXED INCOME	X	
CAPZA Private Equity Selection	ALTERNATIVE CREDIT	X	
COMPT - Convertibles	EQUITY	X	
COMPT - Euro	FIXED INCOME	X	
COMPT - EUROPE	EQUITY	X	
COMPT - Immobilier	REAL ESTATE		X
COMPT - Obligation	FIXED INCOME	X	
COMPT - Pacifique	EQUITY	X	
Delegio Privilege Ambitious Fund	MULTI-ASSET	X	
Delegio Privilege Balanced Fund	MULTI-ASSET		
Delegio Privilege Cautious Fund	MULTI-ASSET		
Delegio Privilege Entrepreneurial Fund	MULTI-ASSET		
Development Venture V	REAL ESTATE		X
Diversis	MULTI-ASSET		
Diversis Dynamique	MULTI-ASSET		
Horizon Long Terme	MULTI-ASSET		
Horizon Moyen Long Terme	MULTI-ASSET		
Horizon Moyen Terme	MULTI-ASSET		
HORIZON TRES LONG TERME	MULTI-ASSET		
ImmoWert	REAL ESTATE		
Label Euro Obligations	FIXED INCOME		
Label Europe Actions	EQUITY		

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