Article 173 – TCFD combined report

- French Energy Transition for Green Growth Act
- Taskforce for Climate-related Financial Disclosure

April 2020

Contents

Explanation of the report structure

In August 2015, against the backdrop of an international wave of interest in climate change in the run-up to COP 21, France passed into law its ambitious Energy Transition for Green Growth Act. Article 173(VI) of the Act effectively introduced the world's first regulatory framework requiring institutional investors to make information available to clients on their management of climate-related risk and, more broadly, on the incorporation of environmental, social and governance (ESG) parameters into their investment policy. While Article 173 laid down no explicit obligations as regards to investment decisions, the law was intended to increase awareness and to bolster the role of institutional investors in financing the transition to a low-carbon economy. It also encouraged better incorporation of ESG criteria into investment processes across asset classes.

In June 2017, the Task Force on Climate Related Financial Disclosures ("TCFD") was an additional call asking companies to disclose information on climate-related risks and opportunities, this time with a global reach. A few years later, these two initiatives have had a major impact on investors, asset managers but also issuers more broadly, and is used as a key framework in our regular interactions with companies.

This report describes AXA IM's responsible investment initiatives. Its intention is two-fold: to comply with mandatory disclosure requirements related to the French "Article 173 VI" decree and to adhere to the voluntary disclosure recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). Each requires disclosure on separate yet complimentary aspects of sustainability and how these are systematically integrated into our investment processes. The TCFD focuses on climate-related risks and opportunities, while Article 173 pertains to Environmental, Social and Governance (ESG) considerations in addition to climate.

To satisfy both, and for the second consecutive year, we are publishing a report which follows the TCFD structure, namely 1) Governance, 2) Strategy, 3) Risk Management, and 4) Metrics & Targets, and adheres to the TCFD's general guidance for the financial sector.

The report has been reviewed by our RI Strategic Committee and Global Risk Committee.

1- Governance

Our Philosophy

The world is currently facing huge challenges, including climate change and social inequality. AXA IM firmly believes that, in this context, developing sound responsible investment ("RI") expertise is no longer an option but a necessity. Accordingly, AXA IM is actively engaged in an approach of progressively incorporating Environmental, Social and Governance ("ESG") factors into each area of management expertise, and in the development of a range of innovative responsible- and impact-investment products.

AXA IM has been involved in responsible investment for more than 20 years and believes that being a responsible asset-management company is crucial to our long-term success. We believe that ESG factors can 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 more ways than one:

1) It is instrumental in removing companies from portfolios when they cause exposure to high levels of ESG risk, which would ultimately affect financial performance
2) It focuses on companies 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
3) It enables improved performance by means of active dialogue with companies on managing ESG concerns around investments and limiting our clients' exposure to reputational risk

Human and Technical Resources

1. Human resources

RI Centre of Excellence

A central RI team acts as a centre of excellence and oversees developing methodologies and framework to support ESG integration within investment platforms. The team of 15 comprises research/ qualitative profiles, engagement/voting profiles, as well as quantitative profiles[1]. Focus for research include climate, human capital and diversity, biodiversity, health and cyber security.

ESG analysts integrated within investment teams

In addition, ESG specialists are embedded the investment teams to conduct ESG analysis at the company level, working closely with fund managers.

They integrate ESG criteria in their assessment of an investment, our conviction being that ESG provides a complementary analysis to traditional financial research; these issues may have financial impacts for companies in the short and/or long-term time horizon.

[1] As of December 2019

Impact analysts

In addition to ESG analysts, three Impact analysts have been hired in 2019. They are dedicated to qualitative impact analysis, reviewing the products or services and the operational contributions of companies.

ESG objectives and Training

Regular training on ESG is organised across the company, including on shareholders' engagement and scoring methodologies. In 2019 we deployed an e-learning on ESG and RI which was assigned to all employees in a mandatory manner, in order to ensure awareness of key issues and opportunities, but also of our internal strategy and framework.

Management Board members have objectives related to ESG and Climate, which are cascaded down to selected teams, including portfolio managers. ESG is also part of the Risk & Control target letter assigned by the Risk & Compliance teams to each head of business.

2. Technical resources

The RI team bases its analysis models on a range of internal and external data sources: ESG-rating agencies, broker research, and company and press publications.

SUPPLIERS	STRENGHTS / EXPERTISE	ADDED VALUE	Scores and Research	Raw Data and KPIs
MSCI	Full range ESG research: risks and opportunities approach, key aspects by sector, strong experience in governance matters	Specialist in governance and environmental analysis, broad coverage (8,000 issuers)	✓	✓
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	Wealth of expertise in monitoring controversies	Leading analyst of controversies and reputational risks	✓	✓
Ethifinance	Strong expertise on European micro and small caps	ESG ratings used for Leverage loans and private debt asset classes.		✓
Bloomberg	Full range of ESG services	ESG KPIs used for investment and reporting purposes.		✓
ISS – Ethix	Expertise in Governance analysis	Ethical filters and controversial weapons	✓	
ISS – Oekom	Expertise in Impact analysis	Impact research and UN SDG alignment assessment	✓	✓
Trucost S&P	Strong expertise in carbon-footprint measurement	Full range of quantitative environmental KPIs		✓
Beyond ratings	Expertise in Climate analysis	Climate research for Sovereign assets	✓	✓
Carbon Delta	Expertise in Climate analysis	Climate research for Corporate assets	✓	✓
Carbon 4	Offers a climate risk package	Measures the carbon impact of investments	✓	✓

Information accurate as of April 2020. For illustrative purposes only.

In order 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-known 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, etc.), 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.

RI Governance committees and Policies

1. Governance committees

Management Board (MB)

The AXA IM MB reviews annually the strategy on climate change and responsible investment in general. As part of this discussion, targets are discussed around how to ensure ESG and Climate integration are effective across all asset classes, but also how AXA IM can continue to drive innovation on RI and Impact.

RI Strategic Committee

The RI Strategic Committee is the leading body in charge of defining AXA IM's strategy with regards to Responsible Investment and monitoring its delivery. It reports to the Management Board.

ESG Monitoring and Engagement Committee

The ESG Monitoring and Engagement Committee is the body in charge of ensuring views developed on controversies and ESG engagement topics at investment team and RI team levels are discussed collegially, considering possible implications for AXA IM. The Committee meets on a quarterly basis and reports to the RI Strategic Committee.

Corporate Governance Committee

The 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. The Voting strategy is defined on an annual basis by the Committee, including on Climate.

Scoring, Methodologies and RI Processes Committee

The Scoring, Methodologies and RI Processes Committee is in charge of supporting the development of a robust ESG integration framework across AXA IM, through scoring methodologies, quantitative tools and solutions, reporting and associated processes (including IT and Data). It acts as a gatekeeper for AXA IM ESG scoring methodologies. This Committee reports to the RI Strategic Committee.

RI Research Committee

The Responsible Investment Research Committee focuses on sharing views developed at investment team levels on environmental, social and governance (ESG)-related research conducted at AXA IM level and ensuring coordination. It reports to the RI Strategic Committee and to the Editorial Committee.

Climate Task Force

The Climate Taskforce is a working group in charge of driving the implementation of the TCFD framework within the company and to help steer its contribution to the Paris Agreement goals, either directly by proposing actions to be implemented as part of our Responsible Investment and Corporate Responsibility strategies and / or by supporting clients related demands. Beyond AXA IM's senior Climate expert, the Task Force integrates various teams, from quantitative profiles to fund managers and risk managers in order to provide a robust approach to Climate as well as more predictability, and to ensure the development of technical skills. Regular reports on progress are provided to the RI Strategic Committee and the working group acts in close cooperation with the other RI committees (including on quantitative methodologies and shareholders' engagement).

Working Group on Sustainability-related regulatory changes

AXA IM launched a working group in 2019, which meets on a monthly basis to review regulatory changes related to sustainability, gathering Compliance and Risk Management, Responsible Investment, Sales teams as well as Investment teams. The objectives are on one hand to define our position and how we will share our views with industry bodies and regulators, and on the other hand to start preparing for these. Specific project governances are then put in place when needed, depending on the significance of the change (e.g. Taxonomy).

2. Our responsible investment policies

Exclusion policies

As a responsible investor, AXA IM has implemented policies ruling out certain activities. All our investments benefit from AXA IM's policy of ruling out coal and tar sands, controversial weapons, agricultural derivatives and palm oil not certified by the Roundtable on Sustainable Palm Oil (RSPO). Additional screening is in place for RI assets through our ESG standards.

Stewardship

Engaging with companies in which we invest allows us as an asset manager to not only monitor our investments, but also to ensure we have an open dialogue to enable change. Through our Voting and Engagement activities, we have an opportunity to use our influence to drive a broader change for the benefit of both society and the planet. AXA IM's Voting & Corporate Governance, as well as Stewardship policies can be found here.

Responsible Investment policy

Our Responsible Investment policy provides an overview of our strategy and organisation around ESG integration, Impact and Stewardship. It can be found here.

2- Strategy

We have combined in this section the information related to our strategy with regards to ESG, Impact and Climate, as well as key metrics.

2.1 ESG integration

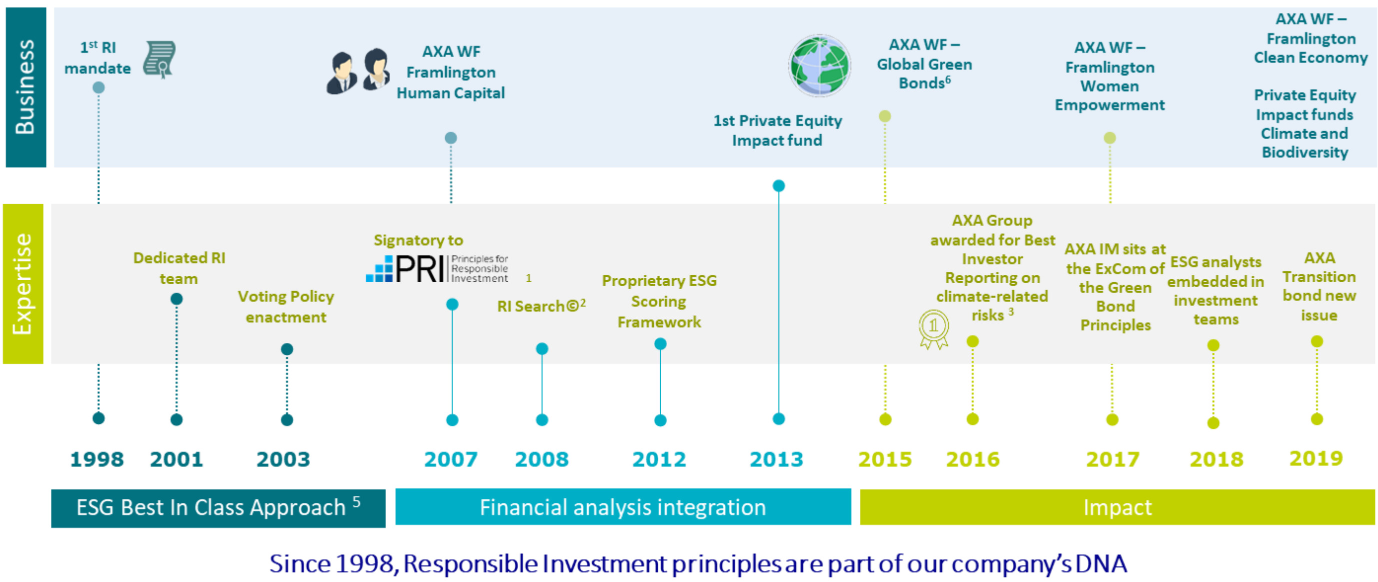
At AXA IM, we believe the global economy will move to a more sustainable model over the next decade, and we want to be an active partner for clients as that transition takes place. We have been engaged in Responsible investment (RI) for more than 20 years, and it is one of the three fundamental pillars of AXA-IM's approach and offering. It is a training priority throughout the organisation, from the Boardroom to the trading desk. We are supported by the scale and ambition of our parent company, AXA Group, which has doubled its green investment target to €24 billion by 2023 and pledged to contain the "warming potential" of its investments to below 1.5°C by 2050[2].

AXA IM's ambition is to incorporate and follow ESG criteria in its various investment strategies; to develop specific, innovative and pragmatic sustainable and impact investing funds; and to put in place RI solutions for our clients.

Over the years, AXA IM has developed an approach and an offering capable of meeting all our clients' needs, geared to their sensitivity:

- Systematic screening for the most material exposure risk types
- Incorporation into our management processes
- Specialist- or impact-management strategies

That ambition has been guiding our determined and methodical development of skills in this area for two decades. AXA IM managers are now able to incorporate ESG aspects into their underlying investment processes, by applying a series of methods proposed by AXA IM's RI team, in line with our clients' demands. To achieve that, investment teams enjoy direct access to all our ESG research and ESG analysts.



Source: AXA IM as at 31/12/19. (1) Principle for Responsible Investment. RI = Responsible Investment ESG = Environmental, Social, Governance (2) In-house RI Platform (3) awarded by the Environmental French Ministry in 2016. References to league tables and awards are not an indicator of future rankings in league tables or awards. (4) Source Novethic Launched at the end of 2015 following the COP21 by the French Ministry of the Environment, Energy and the Sea, the "Transition Energétique et Ecologique pour le Climat" label (Energy and Ecological Transition for Climate) helps to comply and fulfil a fund's commitment to financing the green economy.

[2] Source: AXA Group, November 2019

The Environment Ministry sets out the share of green activities to be held to claim the label. references to league tables and awards are not an indicator of future rankings in league tables or awards. Information contained in this document may be updated from time to time and may vary from previous or future published versions of this document (5) based on AXA IM's methodology, (6) before the 3rd of August 2018, its name was AXA World Funds- Planet Bonds fund. The products mentioned are included for illustrative purposes only and may not be available nor registered in all countries.

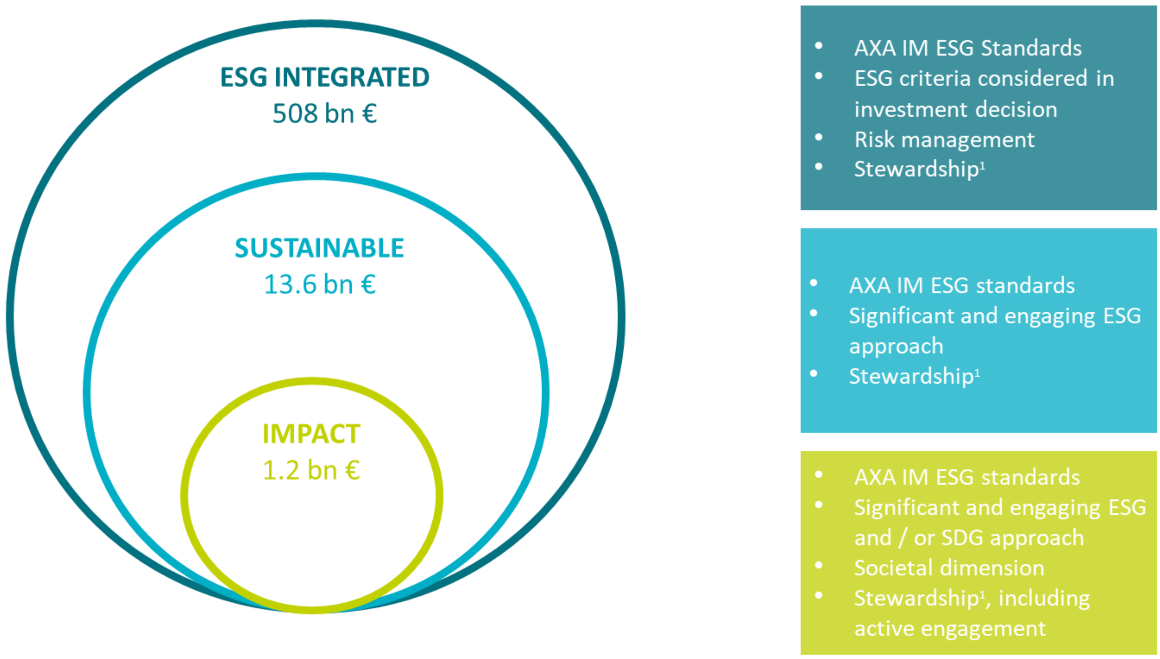
a) RI offering

In 2019, in an environment where EU and national regulators are putting in place new standards and requirements notably to address greenwashing concerns, AXA IM has evolved its RI categories to ensure they remain in line with best practices in the markets, but also that they are easy to understand by clients. These new categories consider the EU Disclosures regulation as well as at the AMF[3] approach and sustainability-related labels.

Foundations: Our screening policy applies to more than 90% of assets as of end 2019. We were among the first asset managers to put in place a blanket exclusion for companies which derive more than 30% of revenues from coal. We also exclude assets linked to food commodities and palm oil production and follow exclusion rules on controversial weapons.

Analysis: We have developed our own ESG scoring system which we use to compare assets and influence decision making. We use raw data to deliver a score from 0 to 10 and we monitor carefully companies with the lowest scores as they may represent a risk. Our objective is to consider and address most significant ESG risks to protect client returns into the future[4]. Portfolio ESG score and Carbon footprint are included in our standard reporting.

Framework: Screening and scoring provide a stable base for our approach. From here we steadily increase the intensity and assign investment products to one of three responsible investment categories, all of which are subject to our active stewardship policy.



Source : AXA IM as of 31/12/2019. Non audited figures.
1 - AXA IM Joint Ventures have a specific approach with regards to ESG scoring and stewardship

[3] "Autorité des Marchés Financiers", the French regulator which issued a new position on ESG in February 2020

[4] More details available in our study "How responsible investing standards and policies affect returns"

1. ESG Integrated[5]:

Funds in this group expand on our screening policy to exclude tobacco producers and companies in violation of the Global Compact – a UN initiative which promotes 10 sustainability principles for corporations. ESG and engagement training, as well as research and key performance indicators (KPIs) are provided for all portfolio managers.

ESG scores form part of the investment decision-making process and are used to identify and address risks. A portfolio manager must submit a written justification of any decision to hold stocks with an ESG score below 2. A review of these submissions is carried out twice a year.

On average, about 4% to 5% of a benchmark index are excluded from investments at this level.

In 2019, AXA IM has continued to roll-out its robust ESG integration framework across its open fund ranges, with 80% of their AUMs ESG integrated at 1 April 2020.

2. Sustainable:

Funds in this category embed sustainability factors more meaningfully into the portfolio construction process, with a significant and engaging ESG approach. They adopt the same screening policies as detailed above but use responsible investment criteria to refine the investment universe further. For example, funds might follow a best-in-class policy with an eligible universe defined by removing the bottom companies in terms of ESG-score with a selectivity threshold defined in the prospectus. They might also for instance adjust portfolios to target a specific KPI such as a carbon footprint.

Each specific objective is clearly stated in the fund prospectus, and in a manner aligned to the latest regulatory demands. Granular ESG and voting reporting is published on our Fund Centre, and detailed information on the broad ESG approach at company and fund level is provided.

At least 10% of a benchmark index will be excluded from investments in this category. Local market labelling regimes may add further requirements.

As of end February 2020, 23 of our open funds had been awarded the French Label ISR, representing € 5.8bn AUM, and 8 funds had been awarded the Belgian Towards Sustainability Quality Standard, representing € 1.9bn AUM.

3. Impact:

This is our most focused responsible investment offering. Products incorporate the demands of the Sustainable category but are specifically designed to have a direct and positive impact on society and/or the environment.

Our strategies will report definitive and measurable data against impact KPIs such as carbon footprint, and each will target one or more UN SDGs. These strategies have a parallel commitment to deliver market-rate returns by tapping into key themes of the sustainability economy.

Portfolio managers may directly invest in projects or companies which address the SDGs, or in listed assets or funds which are exposed. Funds incorporate our full exclusion and stewardship policies and take an enhanced engagement approach on ESG and SDG issues, seeking change where appropriate.

[5] The Real Assets approach to ESG integration is adapted to the idiosyncrasies of the real estate, infrastructure and debt business.

Focus on Impact Funds

AXA IM has a long history in investing for Impact in private markets, with a first fund launched in 2013. The Impact team manages three funds, including one which was launched in 2019. An overview of the impact of the first two funds is available below:

AXA Impact fund I[6]:

Theme	KPI	Performance (as of 12/19)
Access to Finance / Insurance	Underserved banking clients	71.5m
	Underserved Insurance clients	31.5m
	% Female clients	70%
	% Rural clients	66%
Education	Number of schools	1,417
	Number of students	802,605
	% Female students	48%
Climate Change	CO^2 emissions avoided (tonnes)	34,766,818
Health	Healthcare Facilities in underserved locations	56
	Number of sanitation centers	4,275
	Number of medical products[7] for global health (regulatory approval)	6

AXA Impact Fund II[8]:

Theme	KPI	Performance (as of 12/19)
Transforming Rural Economies	Number of beneficiaries	4,789,192
Education	Number of underserved students	2,700,000
	Number of emerging countries	16
Access to Clean Energy	CO^2 emissions avoided (tonnes)	9,100,000

In July 2019, a third private market impact fund was launched, with a focus on Climate and Biodiversity[9]. Its goal is to tackle climate change and protect biodiversity and the ecosystems that will support our world into the future. It invests to **Protect Natural Capital**; **Promote Resource Efficiency**; and improve the **Resilience of Vulnerable Communities** to the effects of climate change and biodiversity loss. The Fund was awarded the **Best Impact initiative for ESG** in the 2019 Sustainable Investment Awards.

The Fund is making good on its promise to fund credible, investable solutions that deliver positive outcomes. To date the fund has made a numbers investments that align with its Climate and Biodiversity mission. Examples of our investments are shown in the table overleaf.

[6] This fund is dedicated to a single client and not available to third party clients

[7] Drugs, Vaccines, Preventatives, Diagnostics and other related technologies

[8] This fund is closed and not available to third party clients.

[9] This fund is dedicated to a single client and not available to third party clients.

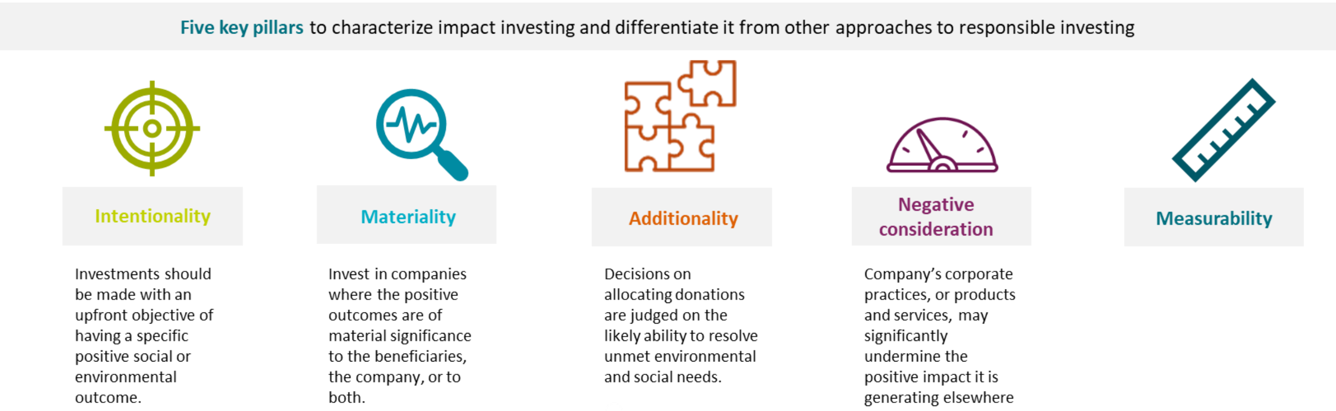
Investment	Activity	Expected impact / Illustrated investments
Madecasse	This investment in sustainable agroforestry and cocoa production will protect the unique biodiversity of Madagascar by providing critical habitats that support lemurs and other endangered species.	The expected impact from this investment include: 2,900 hectares under sustainable management for biodiversity and soil conservation; 528 hectares of Critical Habitat that supports lemurs; 4 lemur species on the International Union for Conservation of Nature endangered list; and create over 120 jobs.
RRG Sustainable Water Impact Fund	This investment directly addresses the effect that extreme weather due to climate change is having on the availability of water, critical habitats and biodiversity in climate stressed areas of California. Our capital is financing groundwater recharge and storage, restoring habitats for endangered species; and generally promoting more sustainable use of agricultural land.	The expected impact outcomes from this investment will have a significant effect on the water and conservation needs of California. The direct and indirect impact outcomes will address 30% of the annual groundwater overdraft; 24% of the migratory bird habitat and 28% of the land restoration needs of the California San Joaquin Valley – a very important region for food production in the United States.
Environmental Technologies Fund 3	This investment funds innovative technology-enabled solutions that contribute credibly to the transition to a more sustainable and green economy under three primary pillars – Smart Energy, Smart Industry and Smart Cities.	Examples of investments includes energy efficient data centres using water cooling technology to replace air cooling; and the manufacture of sustainable leather composites from waste leather thereby saving 3,000 tonnes of leather over the past three years.
Lightsmith Climate Resilience Partners	Through this investment, our aim is to reduce the climate vulnerability of at least 1 million people by empowering them through climate-resilient products and services which will mitigate the damage, disruption, risk and resource scarcity that can follow from changes to the global climate.	Illustrative investments will increase the availability of parametric insurance to farmers in developing countries and the provision of clean drinking water in areas affected by drought using an off-grid hydro panel powered by solar energy.

These cases are provided for illustrative purposes only and do not constitute investment advice or a recommendation. There is no guarantee that they will remain in the portfolios or that the expected impacts will be achieved.

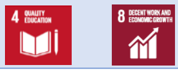
Focus on Impact in Listed Markets

In 2019 AXA IM reinforced its approach of Impact Investing in Listed Markets with a new proprietary framework to identify and select issuers. We hired Impact analysts to support the roll-out of this framework for equity assets.

AXA IM's approach to impact investing in listed assets:



Four strategies were part of this category at end 2019:

Strategy[10]	Underlying investment theme	SDGs
Human Capital (equity)	Promoting Human capital as a key asset of small and mid-cap European companies	
Women Empowerment (equity)	Investing in companies that have the highest ranking in promoting and fostering gender diversity is a way to assess the strength of these foundations. It recognises the critical role gender diversity plays in business success over time.	
Clean Economy (equity)	Population growth and rising wealth continue to increase demand for energy, transportation, food and water. Growing social awareness of the pressure on scarce natural resources and greenhouse gas emission reduction is influencing state policies (ie Paris Agreement to keep the temperature rise below 2°c) and infrastructure investments, ultimately encouraging corporates to act rapidly.	
Global Green Bonds (bonds)	Investing in green bonds supporting the development of environmental projects with a proprietary analytical framework	

[10] This information is provided for illustrative purposes only and does not constitute a solicitation, or investment advice. The products above may not be registered nor available in your country.

b) ESG methodologies & tools

Analysis of the ESG quality of corporate and sovereign issuers is guided by an in-house methodology. The ESG criteria are determined by AXA IM's RI team, using a mix of qualitative and quantitative perspectives.

Corporate issuers

For companies, we have developed a three-pillar and six-factor frame of reference that covers the main issues encountered by businesses in the environmental, social and governance fields. The frame of reference draws on fundamental principles, such as the United Nations Global Compact,[11] the OECD Guidelines, the International Labour Organisation conventions, and other international principles and conventions that guide companies' activities in the field of sustainable development and social responsibility. The same analysis methodology is applied to the equities and corporate bonds of all companies. The final ESG rating also incorporates the concept of industry-dependent factors and deliberately differentiates between sectors, to overweight the most material factors for each industry. Materiality is not limited to impacts relating to a company's operations, it also includes the impacts of its stakeholders and the underlying reputational risk arising from a poor grasp of major ESG issues.

The ESG analysis model for companies considered by the RI analysts is the following:

ESG-analysis model

AXA IM's frame of reference for analysis is built on three pillars: environmental, social and governance.

For each pillar, key themes have been identified. Those themes comprise six factors, which are then divided into 13 sub-factors.

	Corporate framework	
Pillar	Factor	Subfactor
E	Climate change Resources & Eco-systems	Climate change Resources & Eco-systems
S	Human Capital	Career Management Working Conditions Social Dialogue
S	Social Relations	Human & Labor Rights Customer Relationships Supply Chain
G	Corporate Governance	Board Structure Transparency & Controls Shareholder Rights Management Quality & Remuneration
G	Business Ethics	Business Ethics

Source: AXA IM

Selection of external ESG-data suppliers

An in-depth analysis has been conducted into ESG-data suppliers to select the most relevant information.

The results of this study led to the selection of three rating agencies (MSCI ESG Research, Sustainalytics, Vigeo-Eiris) and the activation of 53 raw scores.

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[11] United Nations initiative launched in 2000, with a view to encouraging companies worldwide to adopt a socially responsible stance, by committing to incorporate and promote principles as regards human rights, international labour law and combating corruption.

Raw score calculation

Each factor and sub-factor of AXA IM's corporate ESG frame of reference has raw scores fed into it, obtained from our partner rating agencies using a proprietary allocation matrix. Having standardised the necessary data to take account of the specifics of each source, they are aggregated, and a score range from 0 to 10 is calculated for each factor and sub-factor.

The processing of controversies is an entirely separate stage; the most material controversies automatically result in a lower ESG score.

Companies' ESG evaluations are updated every six months. The list of criteria and sectorial weighting matrix that apply to the various ESG sub-criteria are regularly reviewed for a better grasp of the most significant issues for each sector and for identification of the data suppliers that best match up with the sectorial analysis frame of reference. The goal is an ESG score that best reflects the Responsible Investment team's ESG-analysis convictions and each issuer's intrinsic ESG quality. With that in mind, we ensure that the most serious controversies are monitored, and we factor an equal weighting to Corporate Governance factors whatever the sector because of the strong materiality of this criteria and the increased ambition of AXA IM on engagement purposes.

Each sphere of investment has been broken down into 16 sectors, with the classification combining a rationale that is both ESG and financial.

An unadjusted ESG score is calculated as the weighted average of each sub-factor of the AXA IM corporate ESG frame of reference, with the weighting varying from sector to sector on the basis of a proprietary weightings table.

Adjustment of the overall ESG score

The sphere of investment is split into four regional groups: North America, developed Asia/Pacific, developed Europe and emerging economies.

Within each group, the overall ESG score is standardised on a scale from 0 to 10 (0 for the worst score, 10 for the best).

This balanced apportionment of scores ensures better interpretation of the issuer's ESG score, which could translate to five RI-quality bands (poor, below-average, average, above-average and high).

Leverage loans and private debt

For new loans and bonds issued by corporates that are not rated by the previous methodology, another scoring methodology is put in place based on Ethifinance data provider.

This methodology relies on answers to 32 questions rated on a scale from 0 to 10 and classified in the same 6 factors and 13 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.

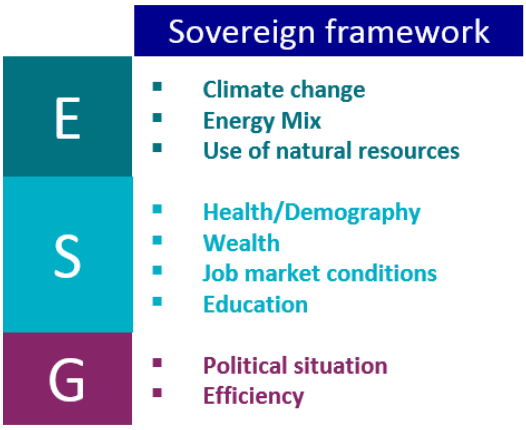
As ESG assessment is relatively new in this asset class, disclosure for some issuers is very low, therefore we add a penalty score for unanswered questions. This penalty also helps communicating to the loan market, the importance of looking at all these topics while it is at the start of these ESG considerations.

Sovereign issuers

For governmental and quasi-governmental issuers, we have also developed a country-rating model based on data from public bodies, such as the World Bank, the OECD and the UN. We currently cover around 100 countries, developed and emerging. This approach makes countries' ESG appraisal central to the notion of sustainable development. Key issues, such as the country's stance on the major climate, social and political risks are assessed, taking account of each nation's direction of travel and progress over the long term.

The ESG analysis criteria for sovereigns considered by the RI analysts are the nine factors below, based on approximately 50 ESG indicators such as:

- For environmental factors: CO_2 emissions in relation to population and economic activity, the energy mix,[12] renewables and pressure exerted on natural resources (water, forests, etc.).
- For social factors: population ageing, life expectancy, Gini coefficient[13] of income distribution, risk of poverty, the Program for International Student Assessment[14] and the youth unemployment rate.
- For governance factors: World Bank's indicators (democracy, effectiveness of laws, rule of law, political stability, corruption control, etc.), but also the ease of doing business index (World Bank) and the proportion of the national debt left to future generations.



Source: AXA IM

Calculation of ESG scores and standardisation by ESG-maturity level

We calculate standardised scores for each ESG indicators relative to its group of countries: mature or progressing.

The score for each ESG indicator consists of a static and a momentum part. Thus, we can use the ESG score to differentiate countries according to their profile (static note) or to their risks and opportunities (momentum note). Each ESG indicator score is equally weighed within a factor. Each factor is equally weighed within the 3 pillars and each pillar is equally weighed to build the final ESG score. By doing so, our model is neutral regarding ESG pillars.

Countries are rated on a scale from 0 to 10 (0 for the worst score, 10 for the best).

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[12] Distribution of the various primary energy resources consumed for the production of various energy types.

[13] The Gini coefficient, according to the French Statistics and Economic Studies Institute (INSEE): The Gini coefficient is an indicator summarising wage inequality. It ranges from 0 to 1. It is 0 in a situation of perfect equality, where all wages, incomes and living standards are the same. At the other extreme, it is 1 in a situation of the greatest possible inequality, where all wages, incomes and living standards, except for one, are zero. Between 0 and 1, the higher the Gini coefficient, the greater the inequality.

[14] Study conducted by the OECD since the start of the 2000s to assess the level of 15-year-old students and, therefore, to measure the performance of the education systems of the Organisation's 34 member countries.

c) ESG Dashboard – Mainstream asset classes

We produce on an annual basis an ESG Dashboard at AXA IM level aiming to summarise asset classes' contributions to the global ESG score and CO2 emissions. The dashboard below is based on AXA IM worldwide holdings' but specifically focuses on mainstream asset classes – equities, sovereign bonds and corporate bonds – at the end of year 2019[15].

The ESG rating coverage, at 95% as of end 2019, increases every year with the inclusion of new sub-asset classes covered by our proprietary ESG rating methodologies, a precise scaling down of ESG scores from mother companies to subsidiaries as well as our engagement with our ESG data providers to enhance coverage in specific areas where coverage improvement is required.

ESG Footprint Dashboard 2019

AXA Investment Managers ESG Footprint Dashboard 31/12/2019

TOTAL ASSET

	ESG scores						CO_2 emissions		AUMs	
	E	S	G	ESG	Rank	% Cov.	t / Mn$	% Cov.	in M€	%
AXA Investment Managers	**6,1**	**5,2**	**6,1**	**5,9**		**95%**	**181**	**88%**	**491 910**	
TOTAL ASSET										
Asset Class										
Sov. Debt	5,5	4,6	7,1	5,7	3	98%	157	100%	212 690	43%
JPM GBI Global	*4,3*	*4,6*	*7,2*	*5,4*		*100%*	*239*	*100%*	-	
Corp. Bonds	6,7	5,7	5,2	6,1	2	92%	225	73%	201 300	41%
Barclays Global Aggregate - Corporate	*6,3*	*5,3*	*5,0*	*5,7*		*95%*	*305*	*87%*	-	
Equities	6,3	5,6	5,4	6,2	1	93%	162	94%	77 921	16%
MSCI World AC	*6,0*	*5,1*	*5,1*	*5,8*		*100%*	*251*	*99%*	-	
Asset Manager										
AXA IM	6,1	5,2	6,1	5,9	1	95%	181	88%	491 910	100%
AXA Entity										
Multi-Asset Investment	6,1	5,0	6,4	6,0	4	96%	165	91%	218 477	44%
Fixed Income	6,1	5,4	6,0	5,9	6	95%	210	83%	182 457	37%
Framlington Equities	6,1	5,4	5,8	5,9	5	94%	152	94%	49 500	10%
High Yield and US Active Fixed Income	5,4	4,8	4,8	4,9	9	78%	214	65%	17 903	4%
Rosenberg Equities	6,0	5,1	5,2	6,2	3	96%	178	99%	13 328	3%
Structured Finance	7,1	6,0	5,9	7,1	1	98%	177	96%	7 060	1%
Real Assets	6,1	5,1	5,4	6,4	2	81%	147	80%	1 983	0%
Chorus	4,1	5,4	7,4	5,6	7	100%	247	100%	1 107	0%
TSF - Derivatives Management	3,4	4,4	7,1	5,0	8	47%	301	47%	95	0%

Color code for ESG scores

- 7.5 to 10.0
- 5.0 to 7.5
- 2.5 to 5.0
- 0.0 to 2.5

(1) Sum of % by breakdown (ie. size, sector, region, ...) can differ from 100% by up to 5% in case of data unavailability.

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AXA INVESTMENT MANAGERS

15 Worldwide holdings include the assets managed by AXA IM Paris.

ESG Footprint Evolution Dashboard from 2018 to 2019

If we compare to last year's dashboard, the overall general feeling is positive with stability of the ESG Score, reduction of the carbon footprint, the progression of ESG & carbon footprint coverage and the fact that ESG scores per asset class remain above benchmark.

AXA Investment Managers ESG Footprint Evolution Dashboard

	ESG scores						CO_2 emissions		AUMs	
	E	S	G	ESG	Rank	% Cov.	t / Mn$	% Cov.	in M€	%
AXA Investment Managers 2018	**6,1**	**5,2**	**6,1**	**5,9**		**94%**	**186**	**88%**	**473 624**	
AXA Investment Managers 2019	**6,1**	**5,2**	**6,1**	**5,9**		**95%**	**181**	**88%**	**491 910**	
Evolution	=	=	=	=		+	+	=		
Asset Class										
Sov. Debt 2018	5,5	4,6	7,1	5,8	3	97%	155	100%	213 211	45%
Sov. Debt 2019	5,5	4,6	7,1	5,7	3	98%	157	100%	212 690	43%
Evolution	=	=	=	-		+	-	=		
Corp. Bonds 2018	6,7	5,8	5,2	6,1	2	92%	237	72%	194 952	41%
Corp. Bonds 2019	6,7	5,7	5,2	6,1	2	92%	225	73%	201 300	41%
Evolution	=	-	=	=		+	+	+		
Equities 2018	6,2	5,7	5,4	6,1	1	92%	180	94%	65 461	14%
Equities 2019	6,3	5,6	5,4	6,2	1	93%	162	94%	77 921	16%
Evolution	+	-	=	+		+	+	=		

d) Focus on Real Assets ESG strategy

ESG-approach

Real Estate is responsible for over 30% of global carbon emissions, annually[16]. As one of the world's largest real asset managers, we are able to take actions which may ultimately have a meaningful, tangible, and measurable impact on achieving the emission reductions required to achieve the Paris Agreement targets and limit global temperature increase to below 1.5°C.

Our goal is to enhance the value of assets we manage on behalf of our clients in a responsible and sustainable way. To do so, we have actively integrated ESG criteria into our investment decision-making processes and we increasingly advise clients on both financial and non—financial risks and opportunities within their investments.

Our ESG approach is based on three pillars: Decarbonisation, Resilience, and Building Tomorrow.

"Decarbonisation" means identifying and cutting an asset's carbon emissions profile to align with the Paris Agreement targets. This means reducing an asset's emissions by >40% by 2030 and reducing emissions to 'net zero', by 2050.

[16] Source: UNEP-FI

''Resilience'' means ensuring our assets are better able to withstand the physical and transitional impacts of climate change. *'Physical resilience'* means identifying and mitigating the physical risks of climate change. These include the impacts of extreme weather events such as flood, hail, windstorm, fire, costal inundation, extreme heat & cold, and earthquake. *'Transitional resilience'* means identifying and mitigating the risks posed to an asset as a result of the transition to a low carbon economy. These include regulatory risks, such as mandatory energy performance benchmarks, or financial impacts such as an increasing cost of carbon.

''Building Tomorrow'' means further developing the capability of our investment teams to identify new opportunities to create value and minimise risk by taking a broader view on the new and rising set of risks facing our clients' investments. Initiatives include both the literal investment in the foundations of tomorrow's world, as well as enterprise innovation across both the physical and social spectrum, reflecting and better meeting changing societal and market expectations.

In order to achieve these aspirations, we have put in place tools and methodologies to assess the ESG performance for each of our real asset investment strategies (Real Estate, CRE Debt and Infrastructure Debt).

Some tools available to our real asset teams include:

- ESG scoring: Consistent with other AXA IM businesses, Real Assets uses proprietary methodologies for calculating an ESG score for each asset or loan across our Direct Real Estate, CRE Debt and Infrastructure Debt businesses. In each instance, we use a questionnaire approach to identify the risks, performance and opportunities of each asset, while taking sector-specific ESG issues into account. A detailed written explanation is required to be provided by the investment team for any new investment proposal which scores below 2.0, and a remediation plan is required to be in place for any standing asset with an annual score below 2.0.
- ESG Guides: For our Direct Real Estate investments, guidebooks and action plan templates have been developed for our asset management teams to ensure consistency in the deployment of our ESG strategy. These tools provide assistance in implementing meaningful asset and sector appropriate action plans and initiatives to improve performance. This is also a useful resource for knowledge sharing between teams and geographic regions. (NB Real Estate only).
- Benchmarks: We use both asset level certifications and fund level benchmarking to asses our performance. Asset specific environmental certifications include brands such as BREEAM, LEED, or NABERS which allow us to benchmark real estate performance at an asset level. Fund performance is assessed using the annual GRESB survey for many of our real estate and infrastructure funds.
- ESG Data Management Platform: Real Assets has invested in a dedicated web-based platform specifically used for the gathering and monitoring of key ESG performance indicators and the measurement of an asset's environmental and social impact. We use this tool to calculate the annual ESG footprint for our real estate assets (energy consumption, CO_2 emissions, water consumption, ESG scores, etc.) which we report retrospectively, in line with best practice.

ESG criteria selection

Direct Property

The ESG assessment for direct property is a three-level approach considering the performance of the physical asset, along with the property manager and country. The environmental, social and governance factors of each level have been weighted according to our propriety methodology to produce the final output score.

	E	S	G
Property	Energy performance, environmental certification, carbon footprint, water consumption, waste management, etc.	Health and safety risks, accessibility, engagement with stakeholders, etc.	Transparency, management with stakeholders, green lease, etc.
Property manager	Same approach as the corporate framework.		
Country	Same approach as the sovereign framework.		

Real estate and infrastructure private debt

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. A scoring methodology specific to these two asset classes has been developed for the purpose of allocating an ESG score taking into account some 20 criteria.

For CRE Debt, the methodology developed reflects the approach in place for real estate, analysing key criteria of the underlying real estate assets to determine relative ESG performance. Analysis of the underlying asset is complemented by an assessment of loan sponsors, the ultimate owners of the underlying asset, based on their publicly available commitments and policies in relation to ESG.

For Infrastructure Debt, the assessment methodology has been developed to reflect performance relative to the investment's alignment with the Climate Bond Initiative taxonomy, UN SDGs, Health and Safety documentation and other ESG related covenants. Similar to the approach for CRE debt, the analysis of the infrastructure loan is complemented by a review of the loan sponsors relative to their commitment and policies related to ESG.

AXA IM Real Assets announced its ambition to be in line with the Paris Goals by 2030

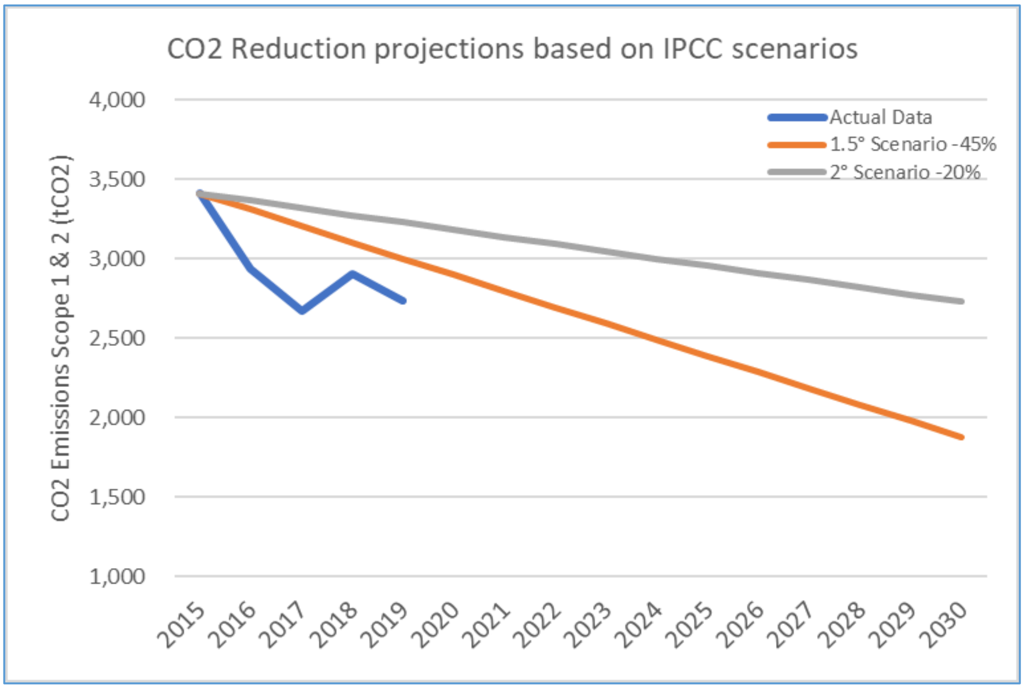
In 2019, AXA IM Real Assets has set an aspirational ambition to align real estate performance with Paris Agreement targets, working towards net zero operational emissions by 2050. In so doing, AXA IM Real Assets are setting in place action plans to improve performance and data coverage, with intermediate targets in place for 2030 and 2040. (ex. reduction of scope 1 and 2 absolute emissions of 45% by 2030).

To demonstrate efforts on an asset level, as of Q4 2019, a flagship office building in France achieved a 20% reduction in Scope 1 & 2 CO_2 emissions, from baseline year (2015), with 576 tCO_2 avoided since 2015 [Illustrated in Figure overleaf]. Detailed energy monitoring and action plans have aided in the reductions demonstrated to date.

Efforts to reduce CO_2 emissions are mirrored by local regulations in France and across Europe, highlighting the impact of transitional risk of climate change affecting investment decisions to improve energy performance. (ex. Increasing the required minimum energy performance standards in different countries effects asset liquidity. To maintain liquidity, new minimum standards need to be met, ultimately reducing CO_2 emissions through improved performance.

Lastly, regarding Scope 3 emissions, through 2020 AXA IM Real Assets will continue engaging with tenants to increase data coverage to cover the full building footprint. Provision of this data will help to improve energy efficiency of buildings and raise climate and ESG awareness among tenants.

Flagship office in France demonstrating decarbonisation efforts



This is an example for illustrative purposes and is not necessarily representative of all cases

2.2 Climate Strategy

We are deeply committed to tackling the impact of climate-related risks and as a large investor we have a role to play in limiting global warming. We believe it is our duty to provide the relevant expertise to help our clients better understand climate change and how it may impact their portfolios and support them in adapting their investment decisions accordingly.

As shareholders, it is also our responsibility to engage with companies to encourage them to not only take better care of the environment but help improve public health and working conditions too.

Our Climate strategy is aligned with the framework proposed by the Task Force on Climate-related Financial Disclosures, and is evidenced by our active involvement in sector and international initiatives such as Climate Action 100+ or the Climate Bonds Initiative (see overleaf). In November 2019, AXA Group joined the Net Zero Asset Owner Alliance[17], and AXA Investment Managers works closely with its parent company in this collective initiative aimed at defining how investment strategies will support the shift of the economy to a 1.5°c pathway.

[17] https://www.axa.com/en/newsroom/press-releases/axa-launches-a-new-phase-in-its-climate-strategy-to-accelerate-its-contribution-to-a-low-carbon-and-more-resilient-economy

a) Stranded assets risks mitigation

As part of our ESG integration process, we exclude firms which fail to meet certain climate change criteria. Our investment portfolios exclude electric power generating utilities and mining companies that are not credibly demonstrating a commitment to energy transition, as part of our climate risks exclusion policy (see 3.1) - its scope of application was extended to all the Assets Under Management in 2019.

b) Integration of Climate risks & opportunities in portfolio management

AXA IM has a long experience in the construction and testing of carbon risk measurement. Since 2018, we started to prototype reporting frameworks on new climate indicators covering both corporate and sovereign investments with forward-looking metrics such as portfolio temperature, climate risks resilience assessment and contribution to the energy transition. We have relied on our collaboration with a consortium of external experts such as Trucost-S&P, Carbon Delta and Beyond Ratings to select meaningful metrics and set-up our climate framework and approach.

Combined with a shareholder engagement strategy through which we actively interact with companies most at risk, our climate exposure assessment capacity is aimed at helping portfolio managers to further integrate climate risks and opportunities into their activities.

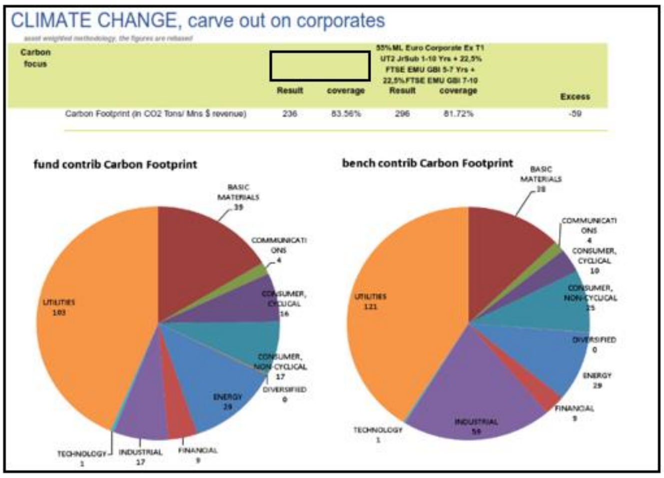
In 2020, we will continue improving the knowledge and disseminate these analytical tools across our investment teams, reinforcing our reporting and looking at whether they could be used as targets for selected portfolios. We will also use our new scenario analysis approach to prepare for upcoming regulatory change such as the Disclosures regulation.

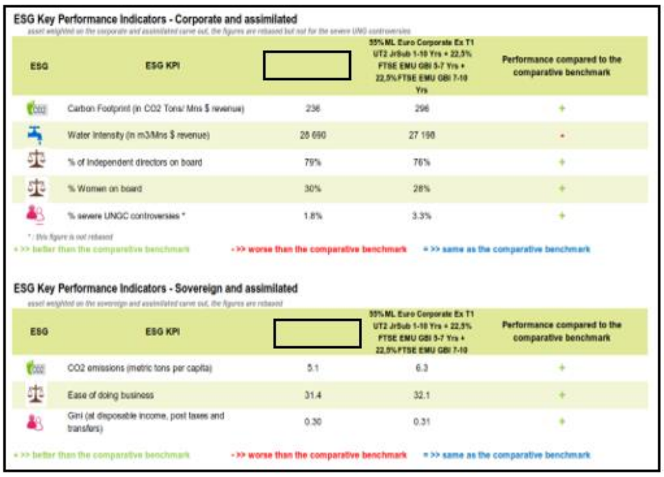
i. Measuring climate risks & opportunities

<u>Carbon Footprint</u>

Partnering with Trucost S&P, AXA IM discloses the carbon intensity of portfolios in the climate section of the ESG reporting of its RI funds, and is progressively incorporating this information 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).

AXA IM ESG Impact reporting: ESG KPIs and Climate Change sections





ESG Key Performance Indicators - Corporate and assimilated

ESG	ESG KPI		55%ML Euro Corporate Ex T1 UT2 JrSub 1-10 Yrs + 22,5% FTSE EMU GBI 5-7 Yrs + 22,5%FTSE EMU GBI 7-10 Yrs	Performance compared to the comparative benchmark
	Carbon Footprint (in CO2 Tons/ Mns $ revenue)	236	296	+
	Water Intensity (in m3/Mns $ revenue)	28 690	27 198	-
	% of Independent directors on board	79%	76%	+
	% Women on board	30%	28%	+
	% severe UNGC controversies *	1.8%	3.3%	+

+ >> better than the comparative benchmark - >> worse than the comparative benchmark = >> same as the comparative benchmark

ESG Key Performance Indicators - Sovereign and assimilated

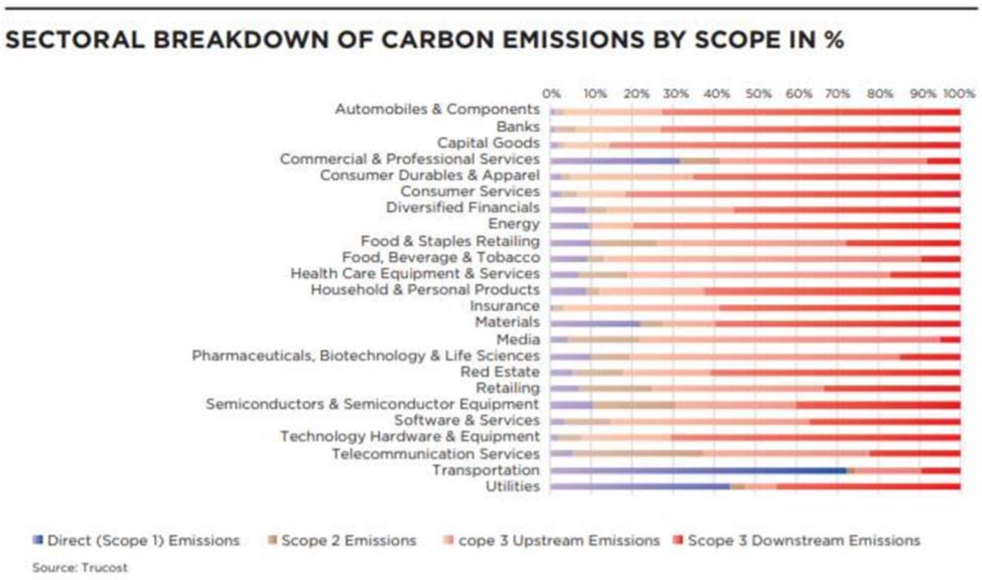
ESG	ESG KPI		55%ML Euro Corporate Ex T1 UT2 JrSub 1-10 Yrs + 22,5% FTSE EMU GBI 5-7 Yrs + 22,5%FTSE EMU GBI 7-10	Performance compared to the comparative benchmark
	CO2 emissions (metric tons per capita)	5.1	6.3	+
	Ease of doing business	31.4	32.1	+
	Gini (at disposable income, post taxes and transfers)	0.30	0.31	+

+ >> better than the comparative benchmark - >> worse than the comparative benchmark = >> same as the comparative benchmark

Sources: Trucost S&P, AXA IM, 2019

The next challenge for carbon performance analysis will be to integrate scope 3 emissions more broadly, considering emissions from suppliers and from the use of products. While companies do report on scope 1 and 2, they do not report on scope 3 in a homogeneous manner. Scope 3 represents more than 50% of the overall carbon emissions for certain sectors (e.g. Aerospace, Auto, Energy, Materials), better disclosures will help get more sectors in the economy accountable for climate change.

Scope 3 - the “Elephant in the room”



Source: Trucost S&P, 2019

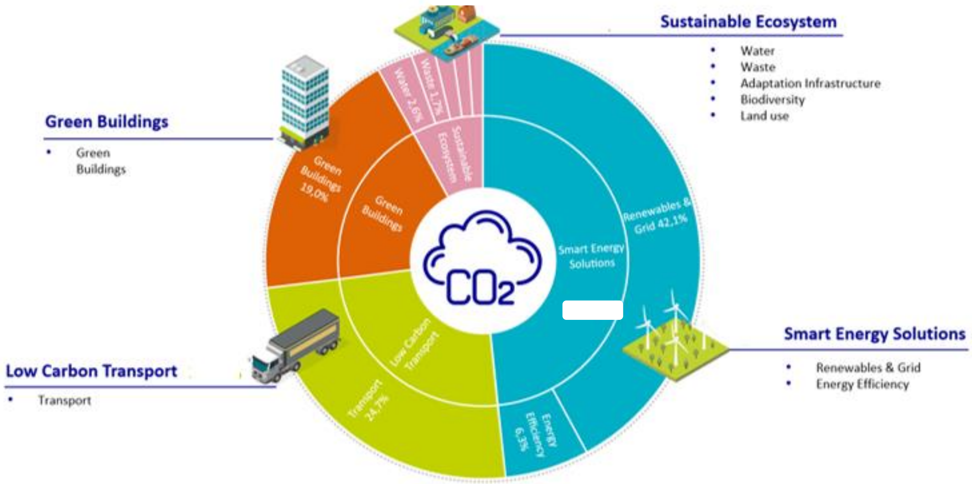
Contribution to the energy transition

Discussions on Level 2 Eligibility criteria for the EU Green Taxonomy will encourage the development of new tools and solutions to measure the greenness of investments. While they currently focus on core green activities (notably renewables) investors will need to capture other shades of green, such as enabling activities and activities in transition.

AXA IM has proposed an approach to identify green assets, with four different categories of green activities defined for both investment and reporting purposes. Using a combination of environmental solutions such as Trucost, business mix allocation database and existing taxonomies such as Climate Bond Initiative and French Greenfin framework, this grid provides an understanding of how a portfolio is exposed to green activities. It can be used for both unlisted assets and listed assets[18] (green equities, green bonds, loans …). AXA IM monitors closely on-going discussions on EU Green Taxonomy, as well as how data providers are proposing to address these new requirements - our approach may evolve accordingly.

[18] For listed assets, the green share has been defined as the average revenue percentage of companies in portfolio exposed to green activities.

AXA IM internal green taxonomy: a grid to measure greenness of investments across all assets



Source: AXA IM, 2019

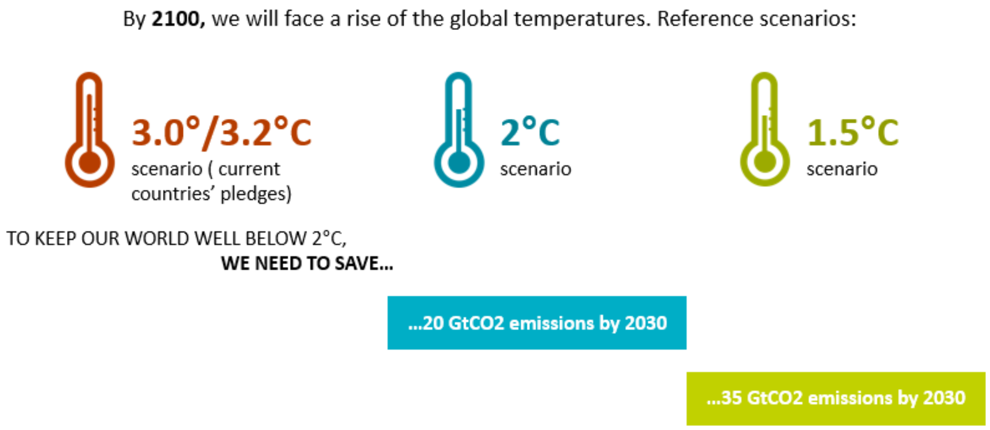
ii. Scenario analysis: Global warming scenarios or possible climate futures

In 2018, human-induced warming already reached a global average of about 1°C above pre-industrial levels. The world's emissions curve needs to peak before 2050 and follow a downward trend to reach carbon neutrality by the second half of the century. Achieving Carbon neutrality or net zero emissions requires to strike a balance between anthropogenic emissions by sources and removals by sinks. To reach this stage, the world will have phased out most CO2 emissions and will be employing methods that capture and store the remaining low levels of emissions ("offsetting") as well as the CO2 in the atmosphere from the build-up of historical emissions. Green technologies are instrumental in achieving this decarbonisation pathway.

The Paris Agreement binds parties to limit warming well below 2°C compared to pre-industrial levels by 2100. Most of the current Intended National Determined Contributions ("NDCs") have 2020 to 2030 as their stated compliance period. NDCs expressed to 2050 are scaled back to 2030 in our modelling. The 2018 UNEP Gap Report estimates that implementing the unconditional NDCs would lead to a mean global temperature of around 3.2°C, and analysts estimate that a "BAU world" (NDCs not implemented) would produce at least +4°C by 2100.

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. This requires reducing carbon emissions by 45% by 2030 compared to 2010 levels and achieving carbon neutrality by 2050.

Remaining carbon budget between Paris agreement country pledges, 2° and 1.5°c scenarios



Sources: IPCC 1.5°c report, AXA IM, 2019

The TCFD recommendations specifically state that organisations consider a set of scenarios, including a "2°C or lower" scenario, in reference to the 2015 Paris Agreement. The starting point for the analysis is to identify which scenarios will be used to assess potential implications of climate change on investments.

What is a climate scenario?

A climate scenario is a forecast of the future based on projecting several variables. 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.

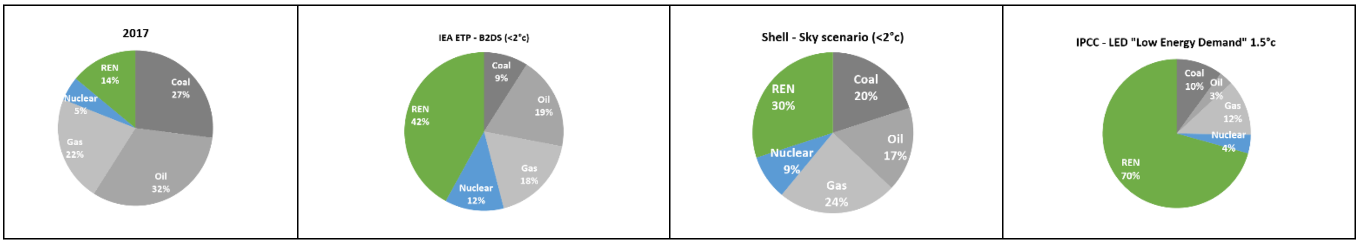
Scenarios well-acknowledged by investors and companies are the ones from the IPCC and the International Energy Agency ("IEA"). There are other scenarios developed by non-governmental organisations such as Greenpeace, academics such as Potsdam Institute and commercial market data providers (e.g. Bloomberg). Oil & gas companies within the energy sector, including BP, Royal Dutch Shell and Equinor, have also developed scenarios which are generally close to the IEA scenarios.

There are clear limitations to developing scenarios. There are often simplistic compared to real life. They focus on several key variables and do not sufficiently consider change which can be surprising, unexpected or disruptive. Most climate scenarios assume a future world in which the main economic parameters - GDP growth rates, demographics, political control - are like the ones we experience now.

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 scenarios such as the IEA's one, efforts to limit greenhouse gas emissions are derived mainly from technical and technological energy efficiency measures. They say little on social conditions, relative costs and technological developments to achieve such energy mix shift.

Primary Energy mix by 2040 in below 2°C scenarios



Sources: AXA IM, Shift Project, IEA World Energy Outlook 2019, IPCC1.5[19], 2020

Integrated Assessment Models: going beyond energy supply mix

For the scenario analysis section of its reporting, AXA IM uses data from Integrated Assessment Models scenarios (IAMs). The main output from IAMs that are used in the Climate VaR calculations are annual carbon prices.

Climate change IAMs are tools that bring together very different types of information (such as climate systems, economic data, and ecological data) in a coherent framework that is usable by researchers and decision makers to ask "what if" questions such as "how can the world meet the 1.5°C or 2°C targets?". IAMs can provide a framework for understanding the climate change problem and for informing judgments about the relative value of options for dealing with climate change. The links between the various climate and non-climate modules that are inherently built into complex IAMs allow them to explore cascading effects, how decisions in one area of the economy affect all the other areas. This allows, for example, to see how population and GDP growth could impact the demand for electricity and how that demand could be met in an optimal way by either maximising the social impact or by minimising costs to meet the new demand.

To run its scenario analysis, AXA IM has been focusing on three temperature outcomes using IAM scenarios[20] and tested for the impact of possible futures in terms of investment value.

- The Paris pledges scenario we put by default at 3°c (AIM/CGE 3°c)
- The 2°c scenario (AIM/CGE 2°c)
- The 1.5°c scenario (AIM/CGE 1.5°c)

The narrative behind each of these scenarios has been formulated by the Japanese National Institute for Environmental Studies (NIES), which includes indicators on population, economic growth, low carbon technology use, energy system information, land cover, etc.

These indicators are used in IAM scenarios to determine the outputs of the models. Overleaf we present some indicators that enter the AIM/CGE scenarios and set future trends from now to the end of the century.

[19] In the comparison, we exhibit two IPCC1.5 report SSPs scenarios: P1 - Low Energy Demand scenario (LED) ; P3 - SSP2 "Middle of the road": This future poses moderate challenges to mitigation and moderate challenges to adaptation; Population growth stabilizes toward the end of the century ; Current social, economic, and technological trends continue ; Global and national institutions make slow progress toward achieving sustainable development goals

[20] Scenario data has specifically been used from the AIM/CGE model (Asia-Pacific Integrated Assessment/Computable General Equilibrium). This model was developed by the Japanese National Institute for Environmental Studies (NIES) to analyse the future of climate change mitigation and its impact on economic conditions. AIM/CGE is classified as a computable general equilibrium model, which covers all economic goods while considering production factor interactions. The trade of goods and services is also considered.

Demographics

Each of the three AIM/CGE scenarios used in the Climate VaR calculations project population levels under the UN median projection, with a deviation starting between 2030 and 2040. The bulk of the scenarios project a stabilisation of the population growth around the middle of the century.

Most of the scenarios project a world population at the end of the century of about 9 billion against more than 10 billion as UN median projections.

GDP Growth

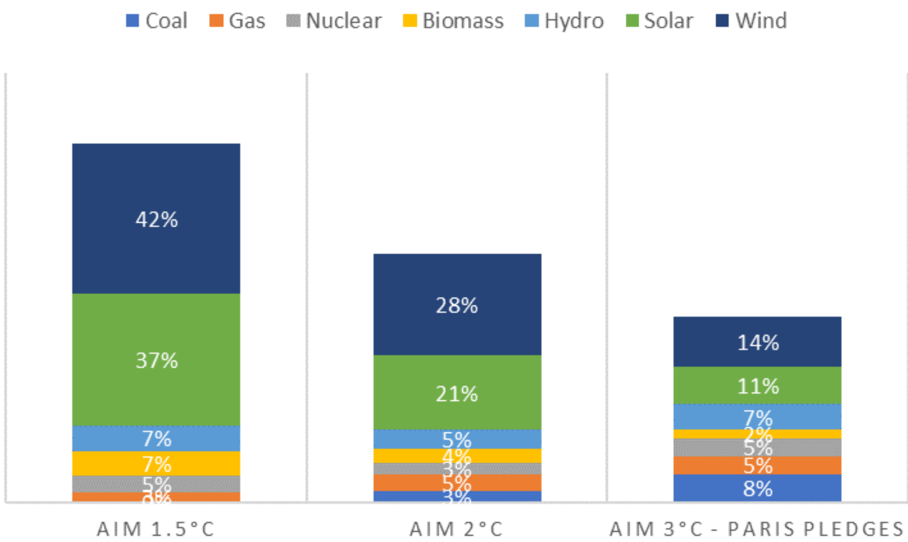
For the first few decades, all three AIM/CGE scenarios project approximately the same GDP growth rates with a divergence starting at around 2030. All scenarios are forecasted to grow at a constant yet lesser rate during the same time period.

Most of the scenarios project less growth and lower end of century GDP levels than the OECD GDP forecast for the world.

Energy Mix

In general, each of the applied AIM/CGE scenarios project a major increase in installed renewable capacity by 2050.

Forecasted Energy Installed Capacity by 2050 in climate scenarios used for AXA IM Climate Value at Risk calculations



Sources: Carbon Delta, AXA IM, 2020

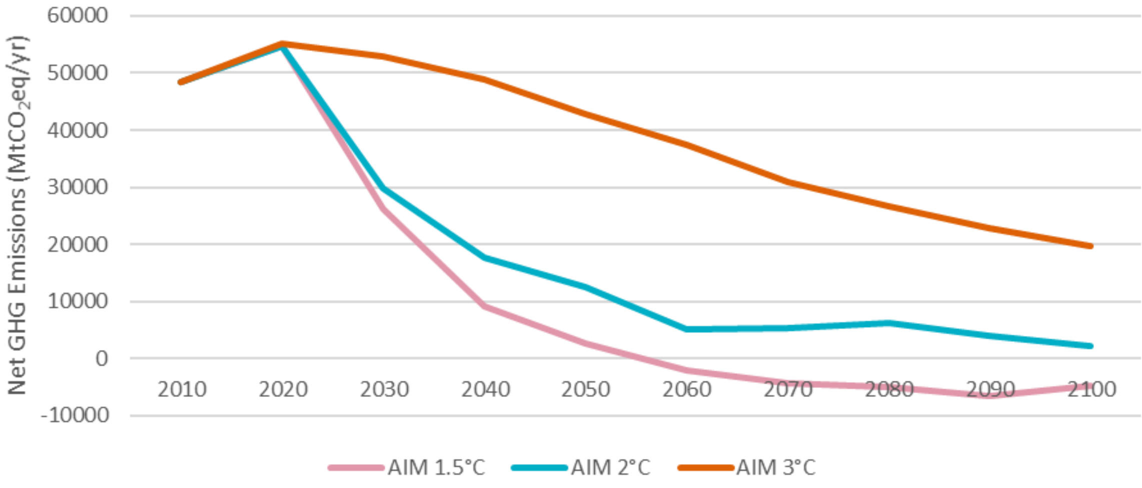
Future Green House Gas emissions[21]

The AIM/CGE 1.5°C and 2°C scenarios project a peak in emissions in 2020 and then a sharp decrease between 2020 and 2050, with the 2°C scenario leveling off between 2050 and 2060 and being close to zero emissions by the end of the century. The 1.5°C scenario projects a continuous decarbonisation whereby economies become emission neutral around 2055, going further negative until the end of the century.

[21] These emissions are net emissions (sequestered emissions are taken into account) and include the following gases: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The CH_4 and N_2O emissions were converted into CO_2 equivalent (eq) numbers using the IPCC AR5 global warming potentials (GWP) relative to CO_2. These gases account for the majority of global emissions (around 80% of the emissions) and are the main drivers of global warming.

The AIM 3°C scenario projects an emission peak in 2020 and is followed by a slow but constant decrease of emissions until the end of the century.

Forecasted Green House Gas emissions by 2100 in climate scenarios used for AXA IM Climate Value at Risk calculations



Source: Carbon Delta, 2020

iii. Forward-Looking metrics and climate-related impacts for the business

Many stakeholders are expecting the finance industry's contribution to the climate debate to embrace the concept of "Paris-aligned investments". The answers so far have taken various shapes, such as carbon footprinting which is not forward-looking, divestments which focus only on most carbon intensive sectors, green investments which are challenging to bring to scale and often overlook "transition" sectors and shareholder engagement where results are still difficult to measure.

Investors are now turning towards new types of analyses and corresponding metrics that seek to complement these efforts, while also presenting 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. Those sophisticated KPIs provide analytics to measure alignment of portfolios with international climate commitments, and to assess exposure of investments to climate risks and opportunities considering different global warming scenarios, which is a key recommendation of the TCFD.

The EU is expected to review the introduction of a 'green supporting factor' in its prudential rules, which would require to incorporating climate risks into risk management policies and would encourage financial institutions to fund sustainable projects. In 2019, several European regulators, including in the UK and France, have announced banks and insurers would need to assess their exposures to global warming and the risks associated with the transition to a lower-carbon economy, with stress tests on climate change.

To run such tests, the financial industry needs to translate climate risks into financial impacts for their assets and liabilities. Ahead of these regulatory explorations, AXA IM has supported AXA Group in measuring the alignment of its investments with the Paris goals since 2016, with initial assessments of transition and physical risks costs.

Impacts on portfolio value are presented in this report for AXA IM Corporate investments assets. We use Carbon Delta's Transition risks & opportunities and Physical risks cost assessments and corresponding Value at Risk metrics to do these calculations. *Refer to section 4 for more details on Metrics.*

Transition risks and opportunities

Transition risks are often associated to carbon regulation. Costs of carbon regulation and disruption are the extra charges for an emitting company arising from public policies strengthening. On listed corporate investments, AXA IM measures transition risks using tools developed by Carbon Delta (Transition and Green Opportunities Value at Risk). They rely on an assessment of future carbon prices and on an estimate of the carbon remaining budget before we reach various climate scenarios. This remaining carbon budget at company level depends on the geographical and sectoral structure of companies' assets/revenues.

Extreme Weather events costs and Physical Risks

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[22]. Last IPCC report on the impacts of a global warming of 1.5°c[23] 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 categorised in three parts:

- Assessment of Real Assets portfolio exposure to climate risks across AXA Group's investments using insurance risk management natural catastrophe models;
- AXA IM Real Assets Australia 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 Real Assets: resilience tests on property portfolio

At AXA IM Real Assets, 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 Real Assets built on current engagement with the NatCat teams within the AXA Group for a better understanding of physical risk exposure. Utilising these tools, the Real Assets team now has visibility on the level of risk exposure in relation to natural hazards across the global real estate portfolio.

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 (characterised by the building's physical properties) and the vulnerability (defined by destruction rates, function of the hazard and the exposure). 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.

We intend to build on these capabilities in order 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 of the portfolio.

[22] CRO Forum, 2019

[23] https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf

Investments' "temperature": the new game-changing metric to measure alignment

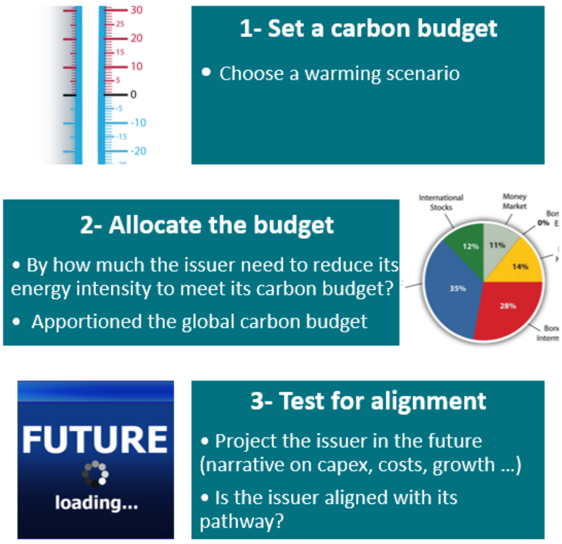
AXA IM has been working on the concept of investments' temperature or "warming potential" with Carbon Delta (Corporate investments) and Beyond Ratings (Sovereign investments) since 2018. The "temperature" concept provides a measure of the gap between future carbon pledges and science-based emissions budget still available before global warming increases.

This is a powerful tool that can provide an overall assessment of how companies and issuers can contribute to the convergence to a low sustainable carbon world. Climate model providers offer data and methodologies by which investors can calculate company or portfolio-level temperatures which can be compared to the 1.5°c target. Such a temperature is also a good way to incentivise dialogue and action by all agents involved such as companies and investors.

Investment's temperature metric relies on the physical linear relationship which exists between cumulative carbon emissions and temperature rise. As a result, to limit global warming, a well-defined carbon budget remains at global level. By apportioning this budget across various dimensions (country, sector, company), investments' temperature consists in determining the contribution of issuers to the global warming. Said differently, for any issuers given their current and future carbon emissions, it is theoretically possible to know how advanced there are comparing to their remaining carbon budget and which temperature it supports.

Temperature computation requires an investor to go through three steps: i) Set a carbon budget ii) Allocate the budget at issuer level considering various dimensions (country, sector) iii) Test for alignment

The 3 steps of an investment alignment test process (Corporate investments)



Source: AXA IM, 2019

The allocation of specific global warming carbon budget at issuer level is a difficult exercise. For carbon allocation step, Carbon Delta uses a Top Down/Bottom process. It combines geographical and sectoral structure of companies' assets/revenues with Nationally Determined Commitments (NDCs), which also contain some sector guidelines. These pledges are regularly tested in the UNEP Gap report against various warming scenarios.

AXA IM keeps exploring other temperature methodologies including some accounting more for scope 3 emissions and other leveraging existing sector carbon budget apportioning methods such as the Science Based Targets Initiative ("SBTi").

Investments' temperature: a "queen" metric still evolving

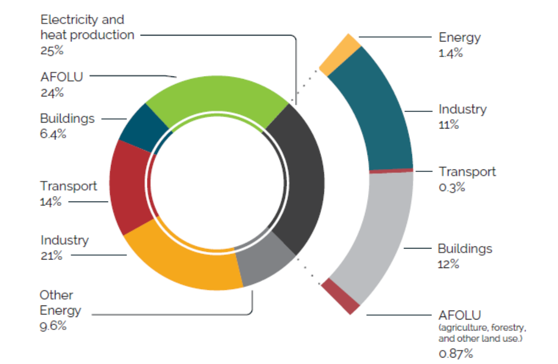
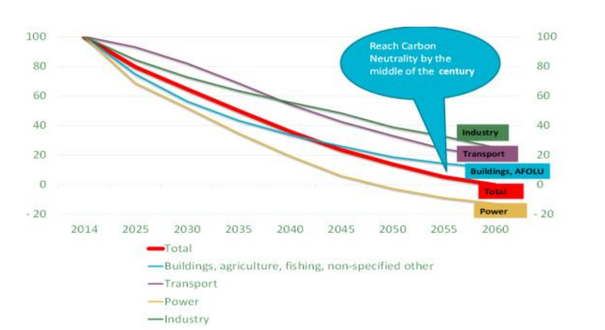
Better account for scope 3 emissions and other company-level data

Alignment tests are complexified by the lack of company level data including current carbon emissions. As mentioned above, while critical for a comprehensive assessment, Scope 3 emissions are still poorly disclosed. We also see a lack of self-reported and reliable data on revenue and production mix or in low carbon technologies capex.

Consider science-based carbon budget apportioning methods used by companies to set their targets

Other frameworks such as the ones developed by the SBTi offer a reliable and opposable carbon budget apportioning process. SBTi relies on sector pathways developed by the IEA Energy Technology Perspective. It provides benchmarks for carbon emissions reduction needs to reach various warming scenarios. These benchmarks cover industries most at stake in the global warming (Energy, Transportation, Materials, Industrials). More than 800 companies have reviewed their carbon emissions reduction targets using the SBTi model. Carbon Disclosure Project, one of SBTi sponsors, is currently developing a temperature score system called TROPIC that would rely on the SBTi methodology.

Carbon emissions "SBT" pathways: apportioning of remaining carbon budget in scientifically based manner

Direct and Indirect GhG Emissions by sectors	Carbon emissions 2°c Pathways IEA-ETP 2017
	

Source: Science Based Targets – Sector Decarbonization Approach (2014), IEA-ETP 2017, AXA IM

Sovereign Investments' temperature

Beyond Ratings follows an approach like Carbon Delta. It compares countries' carbon future commitments to Paris agreement carbon budget, associating a theoretical temperature to national carbon pledges. Beyond Ratings has developed an approach inferring 2°c compliant carbon budget by countries by relying on the bellow Kaya relationship between Carbon emissions GDP growth, demographics, energy efficiency and carbon intensity.

National carbon pledges (NDCs) that have been expressed in the Paris agreement are used to build a homogeneous allocation of CO2 emissions reduction commitments by countries by 2030. Country-level carbon intensities are then compared to the 2°c compliant carbon intensities. More generally, using the theoretical linear relationship between carbon emissions and temperature rise, Beyond Ratings define a corresponding temperature based on country-level 2030 carbon commitment intensities.

The Kaya equation

$$\frac{\text{GHG Emissions}}{\text{Population}} = \frac{\text{GDP}}{\text{Population}} \times \frac{\text{Energy}}{\text{GDP}} \times \frac{\text{GHG Emissions}}{\text{Energy}}$$

Taking proxies of each of the 3 determinants in a list of 15 KPIs and simulating many different combinations of the above correlations, Beyond Ratings defines the "most efficient" allocation of "2°C compliant" GHG emissions by 2030.

Source: Beyond Ratings, 2019

c) Alignment Investment Principles: a combined approach mixing quantitative alignment KPIs and deep qualitative analysis of issuers' strategy

The concept of temperature is powerful because self-explaining. However, challenges remain in calculating it for Corporate Investments. Temperature methodologies require comparability and reliability of estimates, especially carbon data. However, companies' disclosures are not enough on carbon emissions, structure of business mix, operations and capex which are needed to compute the temperature. In addition, models are still approximative and margins of errors in analytical assumptions amplify those arising from any climate scenario analysis exercise. For instance, short-cuts used to map between scientifically based carbon budgets by industries and sector classifications of financial instruments can be misleading. Choices made by providers to estimate missing data from companies are also often complex and not easy to access/understand.

As a result, investors still need to consider other metrics and elements of assessment. Developing a more holistic measure of alignment will support dialogue and further disclosure from companies over time.

AXA IM has drafted a combination of guidelines a portfolio would have to embrace to best contribute to the Paris goals. These Alignment investment principles are aimed at helping portfolio managers to achieve the ambitious goal of supporting, through investments, the transition to a 1.5°c world.

These principles are based on a decomposition of the universe in three categories of issuers depending on their level of alignment with Paris Goals and on their greenness.

- Carbon industry leaders: companies which are the best carbon performers in sectors at stake (industries with the most impact on climate)
- Green leaders: core green companies (companies already low carbon and contributing fully to the energy transition)
- Transition leaders: companies in transition to a Paris aligned trajectory

Alignment and greenness are measured combining historical and forward looking scientifically based metrics. They also encompass a qualitative assessment of the company's ability to transition and meet its targets which can be supported by an active engagement and dialogue.

AXA IM Alignment Investment Principles – a set of proposals to integrate alignment objectives within portfolio management

Proposal #1 – Invest in Low carbon industry leaders – Sectors at stake
Proposal #2 – Invest in Green companies – Any sectors
Proposal #3 – Invest in Transitioning companies – Any sectors
Proposal #4 – Ensure consistency of targets with overall company strategy – Any sectors
Proposal #5 – Consider the overall carbon performance of companies depending on the sector – Any sectors
Proposal #6 – Consider climate awareness and quality of the management about climate issues – Any sectors
Proposal #7 – Reduce carbon emissions and mitigate climate risks
Proposal #8 –Adjust exposure to non-contributing companies depending on investment mandate
Proposal #9 – Monitor portfolio's climate alignment KPIs
Proposal #10 – Monitor overall ESG performance

Going forward, AXA IM will further refine this approach, with the following priorities:

- Depending on the investment strategy (thematic core green portfolio, diversified portfolio ...), the allocation across the different categories may vary.
- We will precise the articulation between quantitative and qualitative criteria for Transition leaders.
- We will continue to survey solutions providers to better refine our knowledge of the climate metrics landscape.

d) AXA IM Climate dashboard

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

	Warming potential [°C]	Carbon footprint	Green Share [%]	Physical cost VaR (Average scenario) [%]	Transition cost VaR (1,5°C scenario) [%]	Cost of climate VaR (1,5°C scenario) [%]	Technology opportunity VaR (1,5°C scenario) [%]
	2019	2019	2019	2019	2019	2019	2019
AXA IM	2,8	181	14,1	-1,2	-5,1	-6,4	2,5
Weighted benchmarks by AUM	3,5	*270*	*9,5*	*-1,3*	*-5,4*	*-6,8*	*2,1*
Asset Class							
Government bonds	2,7	157	26,2				
JPM GBI Global	4,0	*239*	*14,5*				
Corporates	2,8	225	4,4	-0,1	-4,3	-4,5	0,1
BofAML Global Aggregate Corporate	3,1	*305*	*5,1*	*-0,2*	*-3,8*	*-4,0*	*0,1*
Equities	3,0	162	8,4	-3,3	-6,6	-10,2	7,0
MSCI World ACWI	3,0	*251*	*7,9*	*-4,2*	*-9,5*	*-13,8*	*7,3*

Focus on Government bonds		
2019	Warming potential [°C]	Green Share [%]
Australia	6,2	3,3
United States	5,5	13,0
Canada	5,0	20,6
Japan	3,5	8,1
Netherlands	3,3	3,0
Belgium	3,1	16,3
Denmark	3,0	8,3
Germany	3,0	11,8
Spain	2,5	20,3
Italy	2,5	8,7
United Kingdom	2,2	13,4
France	1,9	47,1
Sweden	-0,1	48,5
AXA IM	2,7	26,2
JPM GBI	4,0	14,5

Source : AXA IM, Carbon Delta

Carbon performance

The carbon intensity of AXA IM investments is of 181 tonnes of CO_2 per millions dollars of revenue as compared to 263 tonnes for a reference similar benchmark. If Corporate Bonds are more carbon intensive than both Sovereign Debt and Equities, each asset class will "save" carbon emissions as compared to similar market index.

Green Share / Contribution to the Energy transition

We measure the contribution to the energy transition with two angles.

i) Green investments (project-led green share): € 17bn AUMs

AXA IM has been an active investor in green bonds, green buildings and green infrastructure and is playing a key role in implementing the €24bn 2025 Green Investment initiative, announced by AXA Group in November 2019. There are three categories of Green investments: Real Assets Green buildings and Infrastructure, Green bonds and Green thematic equities. See more details below.

ii) Listed - Green Share: 14% average share of revenues holdings in portfolio is green activities

The green share for listed investments is the value-weighted average share of revenues of issuers in portfolio. This metric measure – all things equal – the level of greenness of investments and constitutes AXA IM's current interpretation of the Green Taxonomy. It will evolve over time as the regulatory requirements are clarified.

For corporate investments, we rely on Trucost S&P Green Share. Trucost S&P decomposes revenue mix of companies according to a proprietary taxonomy closed to the French Label TEEC grid. We focus on an extended version of the Trucost S&P Green share ("dark green" activities and "green candidates") – which will evolve over time.

For sovereign investments, the green share is based on the share of low carbon sources of energy (nuclear + renewables) in the total energy supply of one country.

At end December 2019, our green share was of 14% against 9.5% for a corresponding benchmark. This green share is decomposed between Sovereign investments (26.2%), Corporate Bonds (4.4%) and Equities (8.4%). While the green share for Corporate Bonds is slightly below benchmark, Equities and Sovereign Debt are greener than reference market indices.

Forward looking metrics: Investments' temperature and Climate Value et Risk

Overall, AXA IM Investments' temperature is 2.8°c, significantly below 3.5°c for the corresponding benchmark. This is also far below the projections derived from the current national pledges (3°c/3.2°c) and Business as Usual scenarios (i.e. should the NDCs not be implemented) in excess of 4°c.

Our Fixed Income investments (Corporate Bonds and Sovereign investments) have a warming potential which is lower than widely used market indices. The significant exposure to French Government Debt as well as a strict coal divestment policy that has been enlarged to all AXA IM funds this year have been a support to this good carbon performance. The warming potential of AXA IM's Equity investments is in line with a corresponding benchmark.

Focus on Equities and Corporates bonds			
AXA IM	**2018**	**2019**	**Evolution**
Transition cost VaR (1,5°C scenario) [%]	**-5,4**	**-5,1**	0,3
Transition cost VaR (2°C scenario) [%]	**-3,4**	**-3,1**	0,2
Transition cost VaR (3°C scenario) [%]	**-0,5**	**-0,5**	0,0
Cost of climate VaR (1,5°C scenario) [%]	**-6,8**	**-6,4**	0,4
Cost of climate VaR (2°C scenario) [%]	**-4,7**	**-4,4**	0,3
Cost of climate VaR (3°C scenario) [%]	**-1,8**	**-1,7**	0,1
Technology opportunity VaR (1,5°C scenario) [%]	**2,6**	**2,5**	-0,1
Technology opportunity VaR (2°C scenario) [%]	**1,6**	**1,5**	-0,1
Technology opportunity VaR (3°C scenario) [%]	**0,4**	**0,3**	0,0

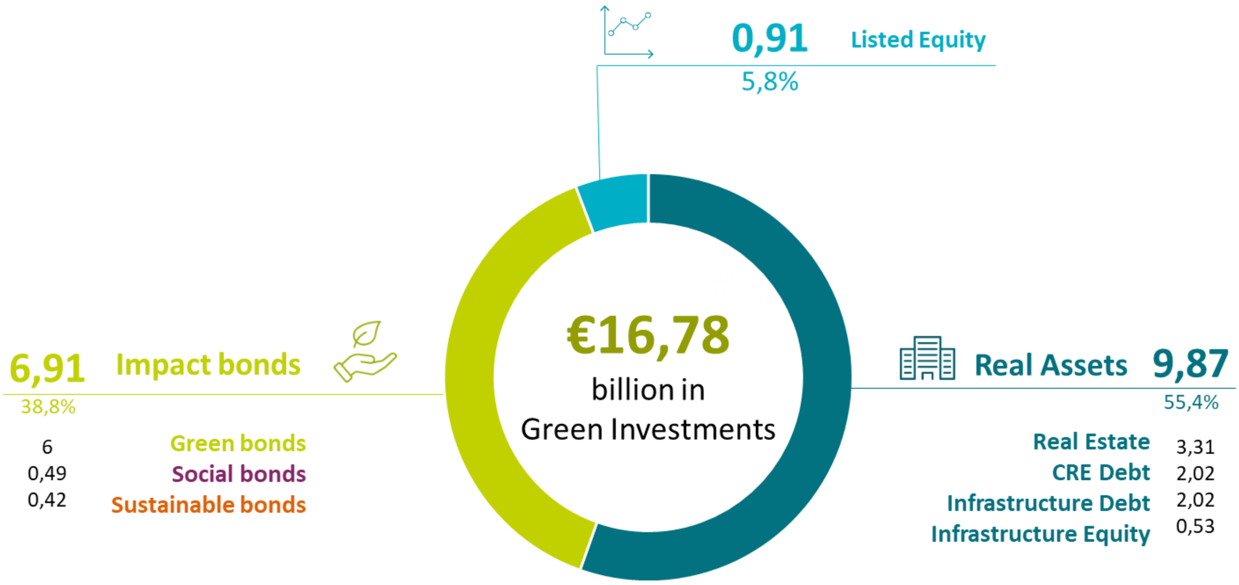
Source: AXA IM, Carbon Delta

Cost of Climate VaR (Transition risks + Physical risks VaR) represents a portfolio value loss of nearly 7% if the world went to a 1.5°c scenario, due to regulation costs and extreme weather events losses. It is already representing a portfolio value loss of nearly 5% in a 2°c scenario and of 2% in the Paris Pledges scenario (3°c).

In terms of new opportunities, Green VaR represents a portfolio value gain of nearly 3% in a 1.5°c scenario and nearly 2% in a 2°c scenario, companies being all the more incentivised to develop green technologies.

e) Focus on Green Assets

AXA IM has been an active investor in green bonds, green buildings and green infrastructure and is playing a key role in implementing the €24bn 2025 Green Investment initiative, announced by AXA Group in November 2019. The breakdown of these investments is available below.



Source: AXA IM as of 31/12/2019

NB: The Listed Equity figure comprises the two "green" equity funds managed by AXA IM. Refer to the section on green share for a more detailed assessment of the greenness of our investments.

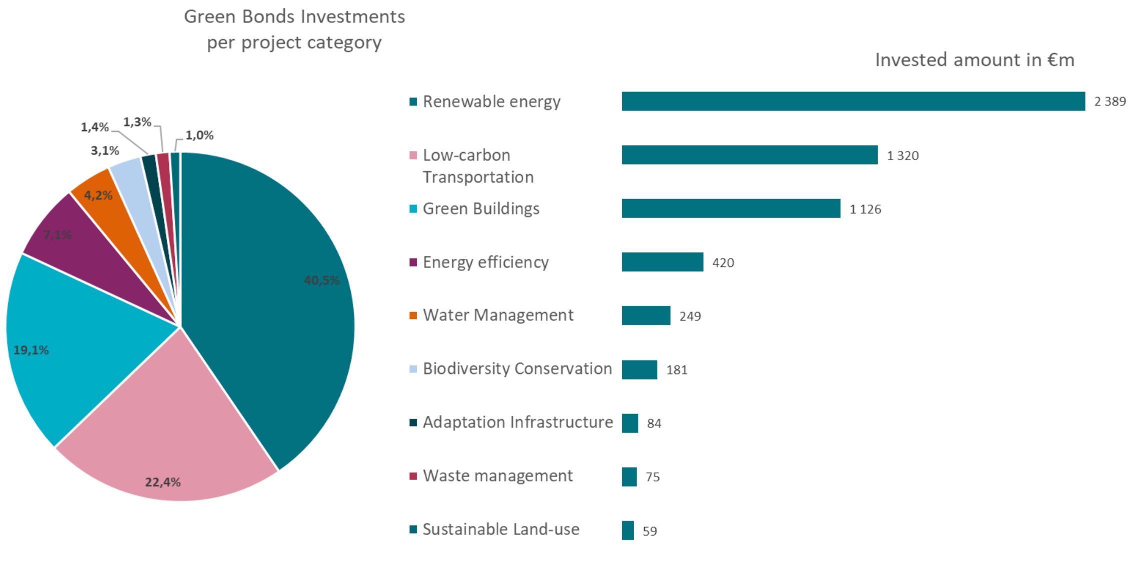
Green Bonds

AXA IM has defined a proprietary green bonds framework, relying on industry best practices. Our internal RI team defines the Green eligible universe mainly based on the Green Bond Principles (GBP) and the "Climate Bonds Initiative" (CBI) guidelines. The RI team employs a rigorous internal green bond selection process by filtering out green bonds which are not in line with our internal green bond requirements.

Our green bonds filtering is implemented at two levels:

- by excluding issuers which are not in line with our RI minimum standards
- at the security selection level by selecting transparent and impactful green bonds looking at ESG quality and sustainability strategy, greenness of the projects, managements of proceeds and reporting capabilities.

At end 2019, AXA IM managed c.€6bn of green bonds selected according to our rigorous internal green bond filtering process, an increase of €2.6bn vs 2018. €3.85bn of these investments were made on behalf of AXA Group. See overleaf.



Source: AXA IM, as of December 2019

Some examples of Green Bonds investments include:

Société du Grand Paris

Issuer's sustainability strategy

The issuer's sole public mandate is to build a new automated metro network (the Grand Paris Express) and to contribute to the modernisation of the existing transport network within the Greater Paris area. We consider this low carbon transportation mandate aligns with climate change mitigation and other social objectives.

Eligible Projects

The proceeds exclusively finance a new automated metro network: 200km of new lines, 68 stations and 7 technical centers. The whole project enter in the low-carbon transportation projects category. Of note, projects have been certified by CBI.

Management of Proceeds

Net proceeds are tracked through SGP's internal IT system and database. A detailed report on the satisfactory allocation of the net proceeds to the Eligible Assets will be published every year, with an assurance by an external third party.

Impact Reporting

Committed to report impact indicators such as estimated ex-ante GHG emissions reductions (tCO2eq./year), Estimated energy savings (KWh), Number of jobs created or supported in construction Phase

SDG contribution:

SNCF RÉSEAU

Issuer's sustainability strategy

SNCF Réseau is the world's leading railway infrastructure manager. In France, while transport accounts for nearly 30% of GHG emissions and rail accounts for 10% of traffic (goods and passengers), it emits less than 1% of transport related GHG emissions. It is committed to reduce its energy consumption and GHG emissions by 20% between 2015 and 2025. It has been the first transport company in Europe to issue a green bond and it aims to yearly issue €5bn in this format.

Eligible Projects

Projects, certified by CBI, are the following:
- Maintenance, modernization and energy efficiency projects for the railway system such as lane renewal projects, fixed electrical traction installations and signaling projects,
- Existing lines extension and development of new lines.

Some biodiversity and natural resources protection projects are also eligible but not part of the funded projects as of today.

Management of Proceeds

Proceeds are tracked and verified by an external auditor.

Impact Reporting

SNCF Réseau's green bond reporting, developed in cooperation with Carbone 4, is very detailed in particular regarding GHG emissions avoidance calculation and methodologies. Development of a specific methodology for measuring the impact of its rail network renovation or line creation.

SDG contribution

SSE

Issuer's sustainability strategy

Still important thermal generation assets but the company has a robust energy transition strategy to reduce its thermal generation exposure. While it had an initial objective to reduce its carbon factor from 600g CO2/kWh in 2006 to 300g in 2020 (below EU average), SSE already met this objective in 2017, with 304g CO2/kWh and is thus likely to well beat this target.

Eligible Projects

The issuer is very transparent on the assets to be funded through its green bonds.
The proceeds finance two main categories:
- Wind farms located in the UK
- Renewable energy transmission infrastructure

Management of Proceeds

Internal tracking of proceeds by financing and treasury department. Annual allocation report and external verification.

Impact Reporting

Detailed impact reporting offering relevant KPIs such as:
- Installed capacity (MW)
- Yearly energy generation (GWh)
- CO2 avoidance (Tm)

SDGs contribution:

Schneider Electric

Issuer's sustainability strategy

SE is a global specialist of energy management and automation. We consider that SE is a leading company on ESG matters, with a strong environmental performance. For example, the issuer has the ambition to be carbon neutral by 2030. Hence, we think that this green bond issuance is perfectly aligned with SE's environmental strategy.

Eligible Projects

The proceeds of the issuance will be 100% used to finance R&D programs to improve the issuer's products energy efficiency, which is perfectly in line with the Green Bond Principles. For projects to be qualified as "Green", environmental benefits should be an environmental gain of at least 10% compared to the previous product generation. Eligible projects are selected by a "Climate Bond Committee", which is made of business units representatives and the group environment leader, who assess the projects' climate value-additions.

Management of Proceeds

No segregated account but internally tracked and verified by an external auditor to ensure it finances eligible projects.

Impact Reporting

Reporting on the repartition by projects category, their maturity status and estimated CO2 reduction or energy efficiency gains.

SDGs contribution:

These examples are provided for illustrative purposes only and do not constitute a recommendation or investment advice. There is no guarantee that they will continue to be held in AXA IM's portfolios nor that they will achieve their objectives.

Real Assets Green Investments

Contributing to the €24 bn AXA Group Green Investment initiative announced in November, real assets represent a significant portion to this overall objective. 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 environmental certification (minimum level "Excellent" or "Gold") and a minimum Energy Performance Certificate (EPC) rating of "B" or equivalent.
- Forestry: Sustainably managed forests as demonstrated by an FSC or PEFC certification
- Commercial Real Estate Debt: for CRE Debt, similar to real estate, we consider loans securitised 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 taxonomy of the Climate Bond Initiative to classify the infrastructure as green.

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

Asset Class	Example of investment
Real Estate	A Minergie-certified residential complex in Switzerland became the first building managed by AXA IM Real Assets on behalf of AXA, to become a "self-consumption" community. This advanced energy strategy gathers together property owners to share photovoltaic energy produced via rooftop solar panels. Tenants benefit from the self-consumption communities by buying electricity from their landlords. This energy comes at a far lower price than that offered by commercial energy suppliers. At night, electricity is purchased form the grid, while during the day any surplus power can be sold to energy providers. The building meets approximately 70% of its electricity needs.
CRE Debt	One loan with an underlying asset in the New York is LEED Gold certified and has been publicly benchmarking energy performance since 2002, demonstrating above market energy performance. Significant building renovations that contribute to better energy performance in the asset include window replacements for better insulation.
Forest	A portfolio of forests in Finland are FSC certified, covering 4 900 hectares of land and capable of storing approximately 5.4 MtCO2e. A total of 12 000 tCO2e is stored when considered net from harvesting, transportation and wood processing operations. The Forest stores 0.88 tCO2/ha/year on average (post-harvest).
Infrastructure	An example in the infrastructure debt portfolio is the financing of a German offshore wind project. the project is the financing of a 465 MW offshore wind farm located in the Gorman north sea which benefits from average wind speeds of up to 10 m/s. fully operational since 2019, it will have stable secured long-term, cash flows since the project benefits from a fixed regulated feed-in tariff ("FiT") for the first 10 years and a floor price for 20 years of operation.

These examples are provided for illustrative purposes only and do not constitute a recommendation or investment advice. There is no guarantee that they will continue to be held in AXA IM's portfolios nor that they will achieve their objectives.

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.

2.3. Voting policy and engagement

A clear voting strategy on Climate change issues

Voting at general meetings is an important element of the dialogue between a company and its shareholders; as an asset-manager, this is a core element of our fiduciary duty towards our clients. We vote in a manner that is intended to be sustainably beneficial to the long-term value of the companies in which we invest.

Our corporate governance and voting policy provide a robust global framework for encouraging high-quality, responsible leadership. It is based on principles of good corporate governance which serve to protect the long-term interests of shareholders and wider stakeholders. We have also carefully considered our ESG themes in the context of our voting policy actions, specifically in climate change and gender diversity.

We also have voting guidelines for specific markets ensuring we do not apply a one-size-fits-all approach but are more refined in our thinking. Ultimately, when reviewing resolutions proposed at general meetings, we judge them against fundamental principles of good corporate governance, while taking account of best-practice standards appropriate to the relevant market and the company's circumstances.

AXA IM's Corporate Governance and Voting Policy is available here. We have also been publishing an annual Stewardship report since 2015.

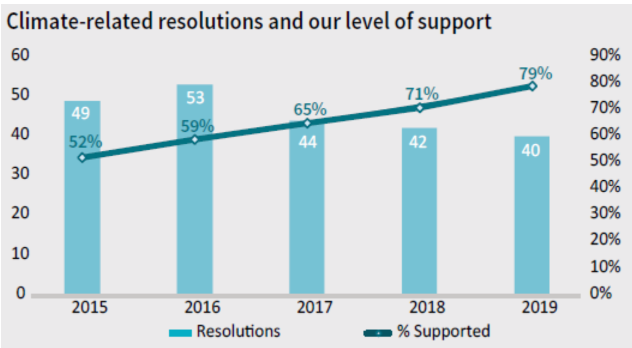
In 2019 we voted at **6,016** general meetings and did not fully support management for **46%** of relevant general meetings

A major challenge for investors is to encourage growth at the companies in which we invest – but to achieve that in a sustainable fashion which supports the goals of the Paris Agreement. Voting has become an increasingly powerful way for investors to highlight concerns to companies about climate change. For AXA IM, this is fully aligned with our broader research and engagement on this theme.

Over the last few years, there has been an increasing number of very public proxy battles at company annual general meetings (AGMs) on the issue of climate. 2019 was no different. There were some notable resolutions brought by shareholders, but we also expressed our views on climate to companies through votes on director elections, executive pay and other resolutions.

We have a clear stewardship approach that frames how we decide whether to support climate-related resolutions:

- Define policy approach and disclose it publicly
- Review company practices, disclosures and commitments: We look at how the company is handling climate issues in terms of governance
- Understand the rationale
- Consider long-term impact and implication



Source: AXA IM 2019 Active Ownership and Stewardship report

Shareholders' Engagement

Through our engagement activities, we seek to use our influence as investors to encourage companies to mitigate environmental and social risks relevant to their sectors. Alleviating Climate Change is one of our key focus when leading these activities.

Our key climate engagement objectives are shaped by the Taskforce for Climate-related Financial Disclosures (TCFD) framework, which has established itself as the de facto reporting framework on this issue. Alongside establishing public support for the TCFD, we urged companies to:

- Commit to short-, mid- and long-term carbon emissions reduction targets that are based on climate science. There should be a clear explanation of corresponding capital expenditure plans
- Perform scenario analysis using a scenario where global warming is limited to the Paris Agreement goal of well below 2˚C
- Align executive remuneration to climate change objectives

We are an integral part of Climate Action 100+, a major collaborative engagement initiative consisting of a large group of institutional investors and the 100 most carbon-intensive listed companies in the world. We led the group's engagement with several companies in the oil and gas, mining and utilities sectors, with dialogue focusing on conducting climate scenario planning, ensuring lobbying practices are aligned with climate goals and establishing clear coal exit roll-out plans.

In 2019, in addition to the collaborative engagement led via Climate Action 100+, our individual Climate-related engagement activities focused on:

- State-Owned oil companies;
- Small European companies that are significant users of energy – such as in the transportation, capital goods and real estate sectors.

See more details on Voting & Engagement in our 2019 Active Ownership and Stewardship report.

Involvement with industry groups and policy makers

Involvement with policy makers and industry groups on our key ESG themes – including climate and human capital – is a key part of our responsible investment strategy. As interest in ESG grows among clients and regulators in many geographies, the need for clearer definitions and usable standards is a top priority for the financial industry. This forms another important area for our public policy engagement.

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 an impact. Impact can often be greater by joining forces with other investors and stakeholders, so we use a combination of collective and individual engagement.

As part of these efforts, we contributed to, or supported several investor statements – the ones focused on climate are listed below.

Statement	Involvement
Climate	
Transition bonds guideline proposal	Initiator
Principles for Responsible Investment letter on investor expectations in climate change for airlines and aerospace companies	Signatory
Institutional Investors Group on Climate Change (IIGCC) letter asking the Australian extractive sector to be proactive in enabling Paris Agreement-aligned public policy	Signatory

We also participated actively to several industry groups. The list overleaf is accurate as of February 2020 and focuses on initiatives with a broad focus, and on those focused on climate and biodiversity – a more exhaustive list is available in our 2019 Active Ownership and Stewardship report.

Organisation	Description
Association Française de Gestion (AFG) - Responsible Investment and Corporate Governance Committees	The AFG is the French industry body for asset management.
Autorités des Marchés Financiers (AMF) Climate and Sustainable Finance Commission	The new commission is a reflection of the various components of the financial markets, civil society and academia, and will provide the AMF with multiple expertise in climate risk and sustainable finance. As a forum for discussion and advice, it will issue recommendations to the AMF and will contribute to the work carried out by the regulator in collaboration with the Autorité de Contrôle Prudentiel et de Résolution (ACPR) on the monitoring and evaluation of the climate-related commitments of the French financial market
CDP (Carbon Disclosure Project)	CDP works with shareholders and corporations to disclose the greenhouse gas emissions of major corporations.
Climate Action 100+	The Climate Action 100+ coalition aims to engage and work with companies and industry members to communicate the need for greater disclosure around climate change risk and company strategies aligned with the Paris Agreement
Climate Bonds Initiative	Climate Bonds Initiative is an international organisation working solely to mobilize the largest capital market of all, the $100 trillion bond market, to create climate change solutions. It promotes investment in projects and assets necessary for a rapid transition to a low carbon and climate resilient economy.
EC B@B (European Commission Business@Biodiversity)	The EU Business @ Biodiversity Platform provides a unique forum for dialogue and policy interface to discuss the links between business and biodiversity at EU level. It was set up by the European Commission with the aim to work with and help businesses integrate natural capital and biodiversity considerations into business practices. EU CoP Finance@B will serves as a forum of dialogue between FIs to share experiences, raise awareness and promote best practices at EU level on how to integrate biodiversity and natural capital into mainstream financial activities and foster investments in natural capital as a new asset class.
Eumedion	Eumedion operates as a representative of the interests of institutional investors in the field of corporate governance and sustainability. Eumedion enables institutional investors to collaborate efficently and effectively in engaging with companies.
European Fund and Asset Management Association (EFAMA) Stewardship and ESG Standing Committee	The EFAMA is the European industry body for asset management.
FIR (Forum pour l'Investissement Responsable)	The FIR's purpose is to raise awareness on socially and responsible investing, and to encourage investors to integrate social cohesion and sustainable development considerations in their work. The FIR is member of the European network Eurosif.
GIIN (Global Impact Investing Network)	The GIIN focuses on reducing barriers to impact investment so more investors can allocate capital to fund solutions to the world's most intractable challenges. We do this by building critical infrastructure and developing activities, education, and research that help accelerate the development of a coherent impact investing industry
GRESB (Global Real Estate Sustainability Benchmark)	An industry-driven organisation committed to assessing the sustainability performance of real estate portfolios around the globe
ICMA - Green and Social Bond Principles	The Group has an oversight role on the Green Bonds Principles. The Green Bond Principles and Social Bond Principles, as well as the Sustainability Bond Guidelines, referred to as the "Principles", have become the leading framework globally for issuance of green, social and sustainability bonds.
ICMA - Sustainable Finance Committee	Forum in charge of discussing sustainable finance in its entirety with representatives from key ICMA Committees including AMIC
ICMA - Transition Bonds working group	The working group considers the concept of transition financing in the context of the green bond market.
IIGCC (Institutional Investors Group on Climate Change)	The IIGCC's mission is to mobilise capital for the low carbon transition by working with business, policymakers and fellow investors. IIGCC works to support and help define the public policies, investment practices and corporate behaviours that address the long-term risks and opportunities associated with climate change. Members consider it a fiduciary duty to ensure stranded asset risk or other losses from climate change are minimised and that opportunities presented by the transition to a low carbon economy – such as renewable energy, new technologies and energy efficiency – are maximised
Institute of International Finance (IIF) - Sustainable Finance Working Group (SFWG)	The IIF SFWG brings together key stakeholders to identify and promote capital markets solutions that support the development and growth of sustainable finance. The SFWG includes representatives from global banks, major institutional investors, credit ratings agencies, consultancies and other interested parties, as well as public sector collaborators such as the UN Environment Programme, World Bank/IFC and many more
Investment Association (IA) - Sustainability and Responsible Investment Committee	The Investment Association is the trade body that represents UK investment managers
Net Zero Asset Owner Alliance	The United Nations-convened Net-Zero Asset Owner Alliance is an international group of institutional investors delivering on a bold commitment to transition their investment portfolios to net-zero GHG emissions by 2050. The initiative demonstrates united investor action to align portfolios with a 1.5°C scenario, addressing Article 2.1c of the Paris Agreement. AXA IM participates along its parent company, AXA Group.
Powering Past Coal Alliance (PPCA)	The PPCA is a group of public and private stakeholders (governments, supranationals, companies and financial institutions) working together to advance the transition away from unabated coal generation
PRI (Principles for Responsible Investment)	The PRI is the world's leading proponent of responsible investment. It works to understand the investment implications of ESG factors and to support its international network of investor signatories in incorporating these factors into their investment and ownership decisions.
SASB - Sustainability Accounting Standards Board	The mission of the SASB Foundation is to establish industry-specific disclosure standards across environmental, social, and governance topics that facilitate communication between companies and investors about financially material, decision-useful information

2.4. Corporate Responsibility

At AXA IM, we are firmly convinced that it is by closely interlinking professional practices and responsibility that a company can generate sustainable performance. By expanding insights and learning on material environmental, social, and governance (ESG) risks and opportunities in investment processes across our diverse platform, we become better overall investors, with enhanced long-term risk adjusted returns.

We approach responsibility through a framework aligned with the United Nations' Sustainable Development Goals (UN SDG) based on 3 key pillars:

- Climate action and environment: we support the long-term sustainability of our firm and the environment in which we and our clients live and operate, using our resources responsibly. We seek alternative approaches that can reduce or offset the environmental impact of our corporate offices through promoting energy and waste management best practices and driving operational efficiencies. We actively measure and manage our environmental footprint, implementing recycling and saving schemes (reduction of paper consumption, waste management, green energy consumption). In Jan 2018, AXA IM fulfilled all the requirements to be aligned with RE100 (collaborative initiative of influential businesses committed to 100% renewable power), with all the offices with more than 50 FTE being exclusively sourced with green energy.
- Social: we provide opportunities and means for employees to engage on sustainability-themed initiatives and outside of the office, via programmes such as 'AXA Hearts in Action', with which our employees are currently engaged in long-term partnerships with 20 organisations based in 10 countries, all focusing on social insertion and education. We encourage employees to give back and volunteer in their local communities. Since March 2018 we deployed worldwide the 'Day of Solidarity' and in France (our headquarters, covering 60% of our employees) an internal programme to share employees' skills with the charities at 3 moments of their professional career. Keeping 100% of their salaries, employees can work from 1 month up to 3 years within a charity helping in their development.
- Diversity and Inclusion: Our approach relies on a workplace that empowers and engages staff, encourages learning and development and supports employee wellbeing. We are a member of the Coalition for Inclusive Capitalism, which is a global effort dedicated to promoting and encouraging greater corporate and social responsibility. We became a member of the 30% Club, committing to actively promote gender balance and have signed the Women in Finance charter.

3- Risk Management

3.1 Mitigation of key ESG risks

As a responsible investor, we want to manage ESG risks and opportunities when investing on behalf of our clients. We have identified certain sectors, products and services, in which we will not invest in above a certain threshold due to ESG-related risk factors.

These policies are regularly discussed within our RI governance, and in particular in our ESG Monitoring & Engagement committee where new policies as well as updates of exclusion lists are discussed. The Management Board validates any new policy, as well as any change in criteria or scope of application.

RI sectorial policies

We monitor systematically and exclude strong ESG risks (controversial weapons, palm oil, soft commodities, climate risks) for all assets under management.

In 2019, we have reinforced our stance on Climate by reinforcing the scope of application of our stricter policy on climate risks (investment in companies involved in coal production or in using coal for its business (companies with coal representing more than 30% of their revenue are excluded, as well as those whose revenues are derived from the extraction or transport of oil sands for at least 20% of their revenues), from RI assets to all assets under management. We believe that this contributes to de-risking our portfolios on the long-term, and that it contributes to the global transition to a low carbon economy.

ESG standards

In addition to our RI sectorial policies, we have defined "ESG standards", which apply to our Impact, Sustainable Investing and ESG integrated open ended funds, and are available to institutional clients on an opt-in basis. They complement the Responsible Investment sectorial policies which are applied across AXA IM (incl. climate risks policy, controversial weapons policy, palm oil policy etc.), and are one dimension of our ESG integration approach[24].

AXA IM's ESG standards help us to manage ESG and sustainability tail-risks. They focus on material issues such as health and social capital, while also considering severe controversies as well as low ESG quality. As a result of these ESG standards, we exclude the Tobacco sector, White Phosphorus weapons producers and companies in violation of the UN Global Compact Violations. We also aim to minimise our exposure to ESG Low Quality issuers.

Impact on risk and returns

In 2019 we looked at how these exclusion policies affected risk and returns:

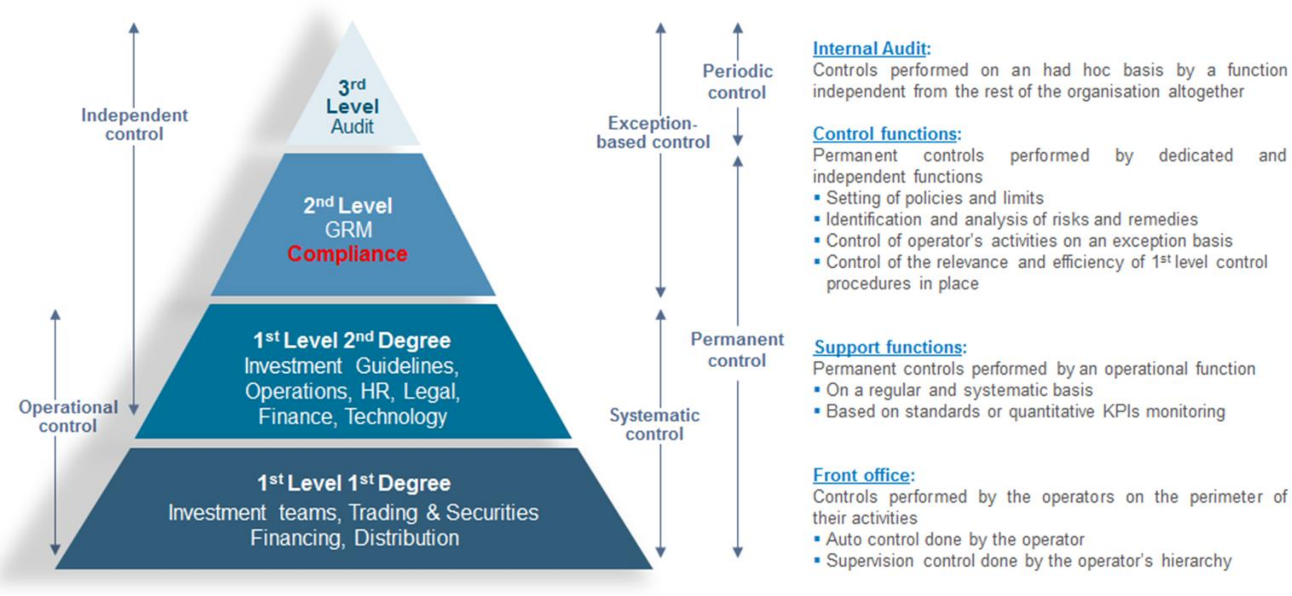
- This analysis showed that the policies have a relatively limited impact on the investment choice available to fund managers - and excluding certain companies did not come at expense of risk-adjusted performance. What's more, we also saw that it drove outperformance over the period studied.
- From a risk perspective, we observed that annualised volatility of indices with exclusion policies were in line with the parent index. The tracking error of filtered indices was like passive

[24] Detail of AXA IM ESG integration approach, and RI sectorial policies is available in our RI policy, and on AXA IM website.

management and ranges from eight basis points for the sectorial policies to 32 basis points for AXA IM sectorial and ESG standards policies combined.

- We noticed the risk/reward ratio is was slightly improving with the increase of exclusions. Over the long term, AXA IM exclusion policies have not come at the expense of risk-adjusted performance on a broad equity market index.

3.2 Internal Control



The ESG and Climate topics 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. 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.

In addition, ESG-related investment guidelines consist 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;
- A dedicated Investment Guidelines team with independent and systematic pre and post-trade controls;
- The Compliance department with ad hoc controls on the work performed by the Investment Guidelines team;
- The Audit department which performs periodic controls.

3.3 Disclosure & Transparency: Means of communication

AXA IM attaches great importance to communicating with its clients in the most transparent and exhaustive way possible, to give them a complete analysis of responsible investment and help them understand it. All the main financial and non-financial information on ESG funds is available on our Fund Centre in accordance with the regulations governing UCIs and Article 173 of the Energy Transition for Green Growth Act.

In order to enable our clients to measure the integration of ESG criteria into the funds and to communicate in a clear and transparent manner, AXA IM has taken the initiative to display three ESG metrics (i.e. indicators) to Business to Business and Business to Consumer reports for all our funds. The ESG score (absolute and relative) and the Carbon Footprint (CO2 relative intensity) are integrated into our reports since January 2019[25]. Please see appendix section for further information.

At asset-management company level

The following content is available on the website:

- Annual Active Ownership and Stewardship Report
- Annual TCFD and Article 173 report
- Annual PRI report
- Policies: see details in first section of this report

For Sustainable and Impact funds, and French ESG integrated funds above €500m

The following content is available on our Fund Centre:

- Fund Transparency Code
- Detailed ESG reporting, including ESG score, carbon footprint, contribution to green transition
- Voting report, for Equity and Multi-Asset funds

Focus on our ESG Impact reporting - Key Performance Indicators

An ESG impact report is also produced systematically for our entire Sustainable and Impact range and on demand for other funds. The ESG quality of the funds in scope is monitored through the ESG scoring of the portfolios – which is regularly monitored by the portfolio managers. Several E, S and G KPIs are reported in the ESG reports including carbon footprint, water consumption, % of independent directors, etc. which are compared to those of the Fund benchmark. In addition, this report contains the voting statistics.

	KPI	Source	Coverage of universe
Environment	Carbon footprint (in CO2e Tons/ Mns $ revenue)	Trucost	MSCI ACWI: 99.4%
	Water intensity (in m3/Mns $ revenue)	Trucost	MSCI ACWI: 99.4%
Social	Severe United Nations Global Compact controversies (%)	Sustainalytics	MSCI ACWI: 99.7%
	Employee turnover (%)	Bloomberg	MSCI ACWI: 26%
	Total hours spent by firm on employee training (hrs)	Bloomberg	MSCI ACWI: 30.4%
Governance	Women on board (%)	MSCI	MSCI ACWI: 99.1%
	Independent director on board (%)	MSCI	MSCI ACWI: 94.7%

[25] At end March 2020, 34% of B2B reports and 42% of B2C reports incorporate those KPIs

4- Targets & Metrics

4.1 ESG targets & metrics

Please refer to the strategy section.

4.2 Climate targets & metrics

AXA IM Climate metrics solutions mix to run climate reporting is a combination of environmental data experts (Trucost S&P) and new climate leading Fintech (Carbon Delta, Beyond Ratings).

Our climate metrics databank is composed of 2 main KPIs categories:

1) Historical climate KPIs
- Carbon emissions
- Contribution to the Energy Transition

2) Forward Looking climate KPIs
- Climate Value at Risk metrics
- Investments' temperature

AXA IM climate metrics solutions mix - methodology description at a glance

Historical Climate KPIs

Carbon Footprint – Corporate Investments (Trucost S&P) The amount of carbon dioxide released into the atmosphere as a result of the activities of a particular organisation and first tier indirect (GHG emissions from operations that are owned or controlled by the company & from its direct suppliers. It is expressed in CO2 tons per millions $ revenue. The carbon footprint is calculated from the carbon emission of each company~~/country~~ (scope 1 and 2 + scope 3 business travel) and from their turnover.
Carbon Footprint – Sovereign Investments (World Bank) Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring. Carbon Footprint for sovereign debt is expressed in CO2 tons per millions $ GDP PPP.
Green Share – Listed Assets (Trucost S&P) The French government's TEEC label (Energy and Ecological Transition for Climate Change) provides different types of activities that can be categorised as "green". The classification is based on the Climate Bond Initiative green categories where they have determined which type of activities can have a positive impact on the environment and on climate change. Trucost green taxonomy includes the followings activities from Energy and Utility sectors as 'Core green': Geothermal Power Generation, Hydroelectric Power Generation, Solar Power Generation, Wave & Tidal Power Generation, and Wind Power Generation. We also include activities classified as 'Green candidate' 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 candidates' activities.
Green Share – Listed Assets (BeyondRating) Share of low-carbon energy in primary energy use. Energy included in the calculation of the green proxy: hydropower, wind, solar, geothermal, tidal, nuclear.

Forward Looking Climate KPIs

Corporate Investments' temperature (Carbon Delta-MSCI)
It is based on a macroeconomic definition of carbon budgets (corresponding to different global warming scenarios and that Carbon Delta retrieves from annual UNEP Gap report), which are allocated by company according to the sectoral and geographical structure of its assets or revenues. This allocation process consists in defining temperature curves for each company. A notion of green technological innovation is considered to project the future carbon intensities of companies in the medium term. The underlying temperature is inferred by comparing future intensities to different warming curves. Carbon Delta offers two temperature levels: • A specific sector temperature where the company is compared to its main sectors of activity (sector carbon budgets); • An agnostic sector temperature where the company is compared to the universe as a whole (universe carbon budgets). This temperature measurement is now at the heart of the AXA Group's climate strategy and communications, which announced at its Climate Days, at the end of 2019, that it would align its investments with a global warming scenario of 1.5°C, in line with the Paris Agreement.
Climate Value at Risk metrics (Carbon Delta-MSCI)
• <u>Transition (or "regulation") costs</u>: The low carbon transition may significantly impact business models. This will likely create economic losses in the form of "regulation costs" for those who fail to adequately adapt. Transition risks for each company represent how much a reduction of their CO2 emissions by 2030 will cost them, relying notably on their sector/activities and on the countries where they operate. • <u>Green revenues/opportunities</u>: for each company, we identify how much revenues future green technologies developments by 2030 will generate for the company, using company-level patent databases (see chart page 33) to estimate future revenue flows from green and low carbon technologies. • <u>Physical costs</u>: for each company, we identify how much future extreme weather events (5 "chronic" hazards - extreme heat, extreme cold, heavy precipitation, heavy snowfall, wind gust – and 2 "acute" hazards - coastal flooding and tropical cyclones) by 2030 will cost them (via asset damages and business interruption), relying on their activities and location, and combined with expected vulnerability factors. Transition risks and green opportunities will differ depending on the warming scenario and then corresponding regulation burden. Physical risks are arising in any cases and are the same whatever the climate scenario. For transition and physical risks as well as for green opportunities, Carbon Delta calculate a Value at Risk by comparing the market value of each instruments to a DDM (for a stock) or a credit bond spread (for a bond) integrating future climate costs or green opportunities. AXA IM regroups Transition and Physical Risks Value at Risk metrics under the metric of Cost of Climate Value at Risk
Sovereign Investments' temperature (Beyond Ratings)
The Beyond Ratings methodology allocates a carbon budget by country supporting various warming scenarios, depending on key macroeconomic variables such as GDP growth, population growth, energy supply mix carbon-content and energy efficiency. National carbon pledges (NDCs) that have been expressed in the Paris agreement are used to build a homogeneous allocation of CO2 emissions reduction commitments by countries by 2030. Country-level carbon intensities are then compared to the 2°C compliant carbon intensities. More generally, using the theoretical linear relationship between carbon emissions and temperature rise, Beyond Ratings define a corresponding temperature based on country-level 2030 carbon commitment intensities.

4.3 Industry surveys and rankings

Survey	AXA IM 2019 ranking / score	Link
PRI annual assessment	Strategy and Governance: A+ Listed Equity – Incorporation: A+ Listed Equity – Active Ownership: A+ Fixed Income – SSA: A+ Fixed Income – Corporate Financial: A+ Fixed Income – Corporate non-financial: A+ Fixed Income – Securitised: A+ Property: A Infrastructure: A	AXA IM 2019 PRI assessment report
ShareAction	BBB – ranked 11th /75	ShareAction report
Influence Map	B+	Study on Asset Managers and Climate Change
Climetrics 2019 ranking	15 out of 81 AXA IM funds ranked have received the best score of 5 leaves (2.5% of total 17,000 funds rated have 5 leaves).	https://www.cdp.net/fr/investor/climetrics

The references to league tables and awards are not an indicator of future performance or places in league tables or awards

4.4 Research papers and articles on responsible investing published in 2019

Mind the gap: Digging into the diversity data challenge, March 2019

Financing brown to green: Guidelines for Transition Bonds, June 2019

Coal phase out: The investment case, June 2019

A lifetime of gender inequality: What investors can do, July 2019

ESG and financial returns: The academic perspective, July 2019

Climate scenario analysis: Assessing the future for investments, September 2019

Biodiversity crisis: The role of investors in resolving species extinction, September 2019

Just Transition: Managing the social impact of a low-carbon transition, November 2019

ESG and intangibles: Driving value creation across companies December 2019

Data Privacy: Trust is hard earned, easily lost December 2019

Appendices

Example of B2B/ B2C monthly report including RI metrics; ESG score and Carbon footprint. These reports are available on our Fund Centre[26]

MONTHLY REPORT
31/05/2019

FRAMLINGTON EQUITIES

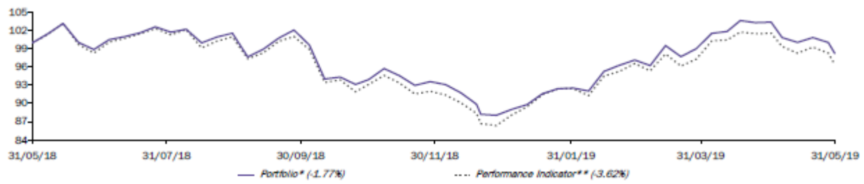
AXA WF Framlington Eurozone RI A EUR

ESG absolute rating | ESG relative rating | CO2 relative intensity

Key figures (In EUR)

Total assets under management (In million)	**186.43**	**Current NAV (A)**	**153.59**
		12 month NAV price High	162.84
		12 month NAV price Low	135.43

Performance evolution (In EUR)



Data is rebased to 100 by AXA IM on the graph start date.

Cumulative performance

	1 M.	3 M.	YTD	1 Y.	3 Y.	5 Y.	8 Y.	Launch
Portfolio*	-5.68%	1.64%	10.96%	-1.77%	18.62%	20.52%	44.09%	53.25%
Performance Indicator**	-5.70%	0.41%	11.02%	-3.62%	17.65%	22.31%	55.45%	-

Annualized performance

	1 Y.	3 Y.	5 Y.	8 Y.	Launch
Portfolio*	-1.77%	5.86%	3.80%	4.67%	2.51%
Performance Indicator**	-3.62%	5.57%	4.11%	5.67%	-

Annual performance

	2018	2017	2016	2015	2014	2013	2012
Portfolio*	-11.01%	9.85%	4.97%	10.05%	-0.58%	18.73%	22.46%
Performance Indicator**	-12.72%	12.55%	4.15%	10.33%	4.14%	23.74%	19.34%

The figures provided relate to previous months or years and past performance is not a reliable indicator as to future performance.

Risk analysis

	1 Y.	3 Y.	5 Y.	Launch
Annualized volatility				
Portfolio*	12.86%	12.76%	14.05%	16.51%
Performance Indicator**	13.35%	12.56%	13.86%	-
Relative risk ('Tracking Error')	2.45%	2.21%	1.95%	-
Sharpe ratio	0.03	0.62	0.41	0.17
Information ratio	1.47	0.97	0.75	-
Alpha	0.0637%	0.1706%	0.1185%	-
Beta	0.9466	1.0002	1.0033	-

* 1st NAV date: 18/03/2002
Fund AXA WF Framlington Eurozone RI benefits of the historical evolution of the performance of the fund AXA Euro Valeurs Responsables, since its creation on the 03/11/10, because they have the same investment objectives.

** Performance indicator : Please refer to the Benchmark section in the characteristics/disclaimers part of the document.

% of AUM covered by ESG absolute rating: Portfolio = 96.5% Performance Indicator = 99.8% (not meaningful for coverage below 50%)

% of AUM covered by CO2 intensity indicator: Portfolio = 96.5% Performance Indicator = 99.3% (not meaningful for coverage below 50%)

Source(s): AXA Investment Managers - ICB as at 31/05/2019
Editor: AXA Investment Managers Paris

AXA Investment Managers

www.axa-im.com

[26] This information is provided for illustrative purposes only and does not constitute solicitation or investment advice. The fund may not be registered nor available in your country.

Important Information

AXA Investment Managers