



AXA GROUP

Climate-related investment & insurance report

In line with France's Article 173
and Taskforce on Financial
Climate-related Disclosure (TCFD)
recommendations

April 2018

CONTENTS

Editorial - Climate risk analysis: combining analysis and action	3
Report Structure: “Article 173” and “TCFD” reporting frameworks combined	4
1) Governance of ESG and Climate-related Risks and Opportunities	4
Overall approach.....	4
ESG and climate-related governance.....	4
2) Strategy – Identification of ESG and Climate-related Risks and Opportunities	6
2.1 Investments	6
Global Responsible Investment Strategy	6
Investment-related ESG risks and opportunities identification: scoring tools and methodology	7
Investment-related Climate risks and opportunities identification	8
2.2 Insurance	12
3) Risk Management : Integration of ESG and Climate-related Risks and Opportunities	14
Sector exclusions	14
“One Planet Summit” 2017: a new climate ambition	14
“2°C” portfolio alignment analysis	17
Shareholder engagement	18
Public policy outreach	19
Academic research.....	20
ESG-Related Investment products and communications towards clients	20
ESG integration into insurance business	22
4) ESG and Climate-related Metrics and Targets.....	24
Carbon footprinting	24
Impact Fund KPIs & corresponding UN Sustainable Development Goals	27
Avoided emissions	28
Internal environmental footprint management	28
Renewable energy sourcing target.....	29
SRI Ratings.....	29
AXA Entity Sustainability Index.....	30

EDITORIAL - CLIMATE RISK ANALYSIS: COMBINING ANALYSIS AND ACTION

As UN Secretary General António Guterres at COP23 said, climate change is the “defining threat of our time”. On 12 December 2017, AXA’s CEO Thomas Buberl, during the One Planet Summit, announced new ambitious climate commitments, reiterating that “unsustainable business is un-investable and uninsurable”. AXA divested €3.7Bn in assets related to coal and oil sands, and no longer insures any coal-fired power plant construction or oil sands extraction activities and associated pipelines. We also massively ramped our green investments pledge to reach €12Bn by 2020. We made clear that we did not want a 4-degree world and demonstrated our conviction to reduce the risk of this scenario from materializing. We also supported the Taskforce on Climate-Related Financial Disclosures (TCFD), which defined a climate strategy reporting framework. As a responsible investor and insurer, we have acted on all the levers at our disposal – investment, divestment, insurance, outreach – towards achieving the 2-degree goal.

But what does a 2-degree scenario mean for our core investment and insurance business?

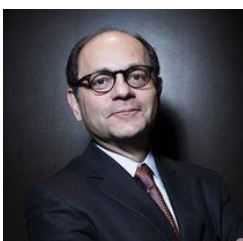
In 2016, AXA initiated an analysis to test the alignment of our portfolio with such scenarios focusing on certain sectors. Building on the results of this analysis, in 2017, we adopted a new forward-looking “Value-at-Risk” approach, which aligns our equities and corporate bonds portfolio against company-level and sector-level emission reduction targets based on broader country-level targets. We also conducted 2-degree portfolio alignment analysis by testing the “warming potential” of corporate bonds and equities, accounting for 45% of AXA’s General Account. The specific methodology and results are presented in this report.

With this new approach, we hope to better understand climate-related risks for financial assets by anticipating “energy transition” risks and “physical risks” and their impacts on specific assets in our portfolio. Climate-related events are inherently difficult to anticipate, and climate-related financial risks are, thus, even more complex to identify and measure. The impacts of climate change on financial assets also vary between geographical locations and over time, as well as among different sectors, companies, and asset classes. There is no magic one-size-fits-all climate-related financial KPI and our analysis in this report is one among others. What we try to do is to match short- and medium-term financial profitability goals with longer-term sustainability goals.

Sustainability includes climate transition, but it is also about investing in education and promoting innovation, respecting human rights, ensuring strong corporate governance, enhancing business transparency, and so on. In other words, harmonizing financial profitability and sustainability requires integrating all ESG – Environmental, Social, Governance - aspects in business practices. A section of this report is dedicated to ESG integration in our business. Examples include our RI Search tool that monitors ESG scores for 81% of AXA’s General Account assets. We also leverage our expertise in risk modelling and risk management to develop innovative “green” insurance products. Nevertheless, “green” does not mean risk-free, and in this context, we look forward to further developments of the EU taxonomy which can provide more clarity on which activities are considered ‘sustainable’.

This report is structured in line with the final recommendations of the TCFD. The recommendations, inaugurated in June 2017, aim to catalyse more consistent, comparable, and reliable disclosure of climate-related information. We believe that, beyond identifying and measuring climate risks, enhanced transparency and consistency in climate-related disclosure are also important to enable climate change considerations to become mainstream, as disclosure is deployed in a homogenous framework that focuses on material risks – in other words, we support not more reporting but better reporting. This is also one of the recommendations that the High-Level Expert Group on Sustainable Finance (HLEG) made to the European Commission, which was officially endorsed by the EU its “Sustainable Growth” [Action Plan](#) launched in March 2018, explicitly referring to the TCFD as a reporting framework.

Convening on the two-year anniversary of the Paris Agreement, the One Planet Summit was a showcase of commitments towards the 2-degree goal. Multiple new investments, products, and partnerships were announced. Thus, it is worth noting that climate change is not only about tackling risks but also about leveraging opportunities: we want to move away from unsustainable businesses, and to invest in and insure a sustainable future.



Jad Ariss,
AXA Group Head of Corporate Responsibility and Public Affairs

Laurent Clamagirand,
AXA Group Chief Investment Officer



REPORT STRUCTURE: “ARTICLE 173” AND “TCFD” REPORTING FRAMEWORKS COMBINED

This report describes AXA’s Responsible Investment (RI) initiatives in line with the *voluntary* disclosure recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD, focusing on climate risks) and the *mandatory* disclosure framework related to the French “Article 173 VI” decree (which considers ESG and climate issues). It is based on the TCFD structure, namely 1) Governance, 2) Strategy, 3) Risk Management, and 4) Metrics & Targets, according to the TCFD’s general guidance for the financial sector, and supplemental guidance for insurance companies and asset owners. This report is also summarized in our Annual Financial Report, published on www.axa.com in March 2018.

1) GOVERNANCE OF ESG AND CLIMATE-RELATED RISKS AND OPPORTUNITIES

OVERALL APPROACH

AXA defines Responsible Investment (RI) as the integration of Environmental, Social and Governance (ESG) considerations into investment processes, including ownership practices. Our conviction is that ESG integration may impact long-term investment performance by offering an enhanced understanding of risk drivers. This conviction is derived from academic research and empirical market data. It is also a way to strive for alignment between our investments and our broader Corporate Responsibility (CR) commitments. AXA developed a comprehensive RI strategy covering the Group’s €600bn+ General Account assets and will extend it to its Unit-Linked investments. The process of ESG integration is coordinated centrally, with an active input from our asset managers that include ESG metrics in their investment analysis across asset classes and regions, as well as local investment teams.

ESG AND CLIMATE-RELATED GOVERNANCE

AXA created a Group-level Responsible Investment Committee (RIC), chaired by the Group Chief Investment Officer, and including representatives from AXA Asset Management entities, Corporate Responsibility (CR), Risk Management and Communications. The RIC reports to the Group Investment Committee, chaired by the Group Chief Financial Officer. In addition, the “ESG Footprint Committee” reviews risks posed by companies or sectors presenting a low ESG performance and/or serious and persistent controversies. AXA’s RI policy is supported by the RI Center of Expertise, a transversal working group from AXA’s local investment teams interacting with the CR network and the Group’s Asset Management entities. Finally, in 2016 the Group created a dedicated shareholder engagement-related function at Group level, to complement engagement initiatives already undertaken by AXA IM and AB, AXA’s in-house investment managers.



Every year, the Board's Compensation & Governance Committee examines the Group's Corporate Responsibility strategy, with a strong focus on AXA's ESG and climate-related strategy. The CR Strategy may also be presented to the entire Board of Directors on an ad hoc basis. Moreover, the AXA Stakeholder Advisory Panel, which meets twice a year in the presence of the CEO and Chairman of the Board, also assesses and provides feedback on AXA's CR and RI strategy.

Insurance-related ESG risks and opportunities benefit from a specific governance, notably the Group Underwriting Committee, which defines underwriting limits. In addition, a dedicated team within Group Risk Management analyses Emerging Risks via a specific framework, tools and local network. These risks, which often relate to long term ESG issues, are monitored and their potential impact assessed within a risk mapping framework (regulatory & legal, environmental, socio & political, economic & financial, medical and technological).

2) STRATEGY – IDENTIFICATION OF ESG AND CLIMATE-RELATED RISKS AND OPPORTUNITIES

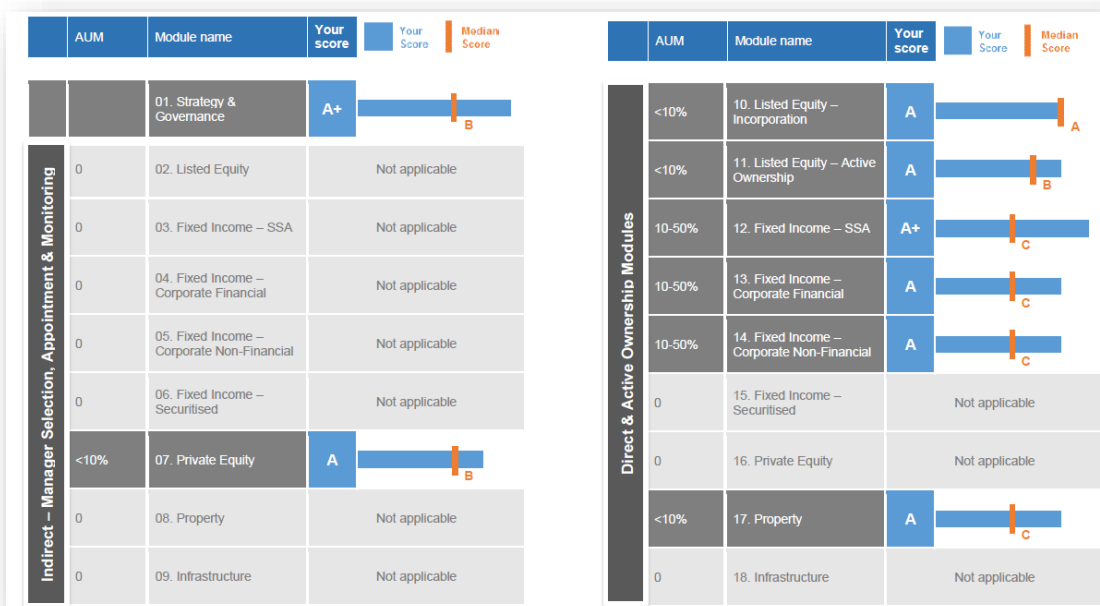
2.1 INVESTMENTS

GLOBAL RESPONSIBLE INVESTMENT STRATEGY

AXA’s RI strategy, embodied in its Global RI Policy (public on www.axa.com), is based on five main pillars:

- Integrating ESG performance scores into investment processes and decision-making, using KPIs and qualitative research across most of our assets. In addition to ESG, we implement a carbon footprinting methodology, as part of our “Montreal Pledge” commitment to assess and disclose the carbon intensity of our investments on an annual basis.
- Excluding sectors or companies that face acute social, human rights, ethical or environmental challenges. These sector restrictions (which apply both to investments and insurance) currently include: controversial weapons, coal mining / coal-based power generation, oil sands and associated pipelines, palm oil, food commodity derivatives, and tobacco. These policies are disclosed on axa.com.
- Promoting “Green” investments across different asset classes, based on proprietary criteria derived from a recognized market standard. These include bonds, infrastructures (debt and equity), property and commercial real estate (CRE) loans.
- Developing “impact investments” delivering positive environmental or social as well as financial returns which are actively tracked. AXA launched two impact funds, focusing on themes such as access to finance and healthcare, climate resilience, education, renewable energy, etc.
- Active stewardship through voting and engagement on a range of ESG or sustainability issues.

The AXA Group as well as its two Asset Management entities (AXA IM and AB Global) are signatories of the UN-backed principles for Responsible Investment (UN PRI, www.unpri.org). The UN PRI is a major collective initiative that seeks to promote responsible investment among investors and asset managers. **The Group’s 2017 UN PRI score reached A+,** confirming the maturity of its RI strategy.

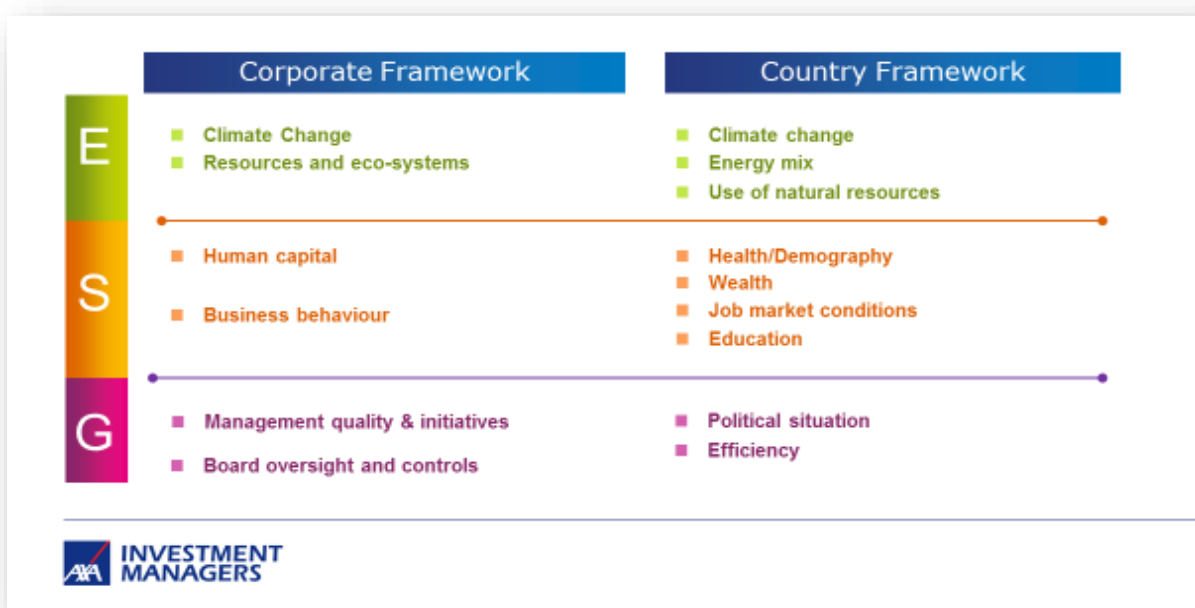


INVESTMENT-RELATED ESG RISKS AND OPPORTUNITIES IDENTIFICATION: SCORING TOOLS AND METHODOLOGY

AXA tracks its investments' ESG performance with accuracy by leveraging AXA IM's "RI Search" tool (and MSCI ESG data at AB), where cross-asset ESG scores and "impact-type" metrics are engineered and stored. The RI Search tool is also the dedicated recipient to manage ESG scores for non-listed assets, such as building properties, commercial real estate loans and infrastructure debt. This analysis process covers around 85% of AXA's General Account assets (sovereign and corporate bonds, equity, property, infrastructure, CRE debt ...). The ESG methodology is adapted to different asset classes:

- **Corporates issuers (equity and debt):** the ESG assessment focuses on the most material and impactful ESG issues at sector level, with a thorough selection of best data sources and most accurate ESG criteria. E, S and G factors are weighted differently in the overall ESG scores engineering depending on the sector. The overall score computation process also includes a monitoring of severe basic principles violations, resulting in a systematic score discount for the most material controversies. Finally, ESG scores take into account the performance of each company within its peer group, considering issuers' specificities (in particular regional) in the assessment of the ESG quality.
- **Sovereign issuers:** AXA's ESG scoring framework for countries is based on public data sources such as the World Bank, the OECD, and the UN. It currently covers more than 100 countries, both developed and emerging. This approach places the ESG assessment of countries at the heart of the notion of "sustainable growth" by analysing fundamental issues such as the positioning of countries with regards to major climatic, social and political risks. These are appreciated by internalizing the progress made by each nation on long term sustainability topics. In this process, selection criteria are adapted to the level of the countries' maturity and development.
- **Real Assets:** AXA's ESG scoring frameworks for Real Assets covers 3 asset classes: direct property, commercial real estate loans and infrastructure debt. The ESG scoring for these assets is based on proprietary dedicated questionnaires. The overall asset ESG score is a combination of various sources of ESG risks assessment: for example, the property / building, the property manager, etc. Criteria such as the building's energy efficiency, environmental certificates, its accessibility, and country factors (to reflect local regulation) are taken into account.

At AXA IM, ESG training is provided for the Fixed income, Equities and Real estate teams and Portfolio Managers on a continuous basis. Approximately 50% of Portfolio Managers, 40% of analysts and 25% of sales staff are trained.



Carbon footprinting, across asset classes, is developed in section 4.

INVESTMENT-RELATED CLIMATE RISKS AND OPPORTUNITIES IDENTIFICATION

Converting international climate objectives (such as those derived from the COP21 Paris Agreement, French or EU energy mix targets) into quantitative investment targets is a new and complex risk modelling exercise which AXA tested in 2016 using a methodology developed by the “2° Investing Initiative” think tank. Building on the results of the 2016 methodology, AXA is pursuing in 2017 a “test and learn” approach by reviewing another external methodology developed by Carbon Delta, a Swiss climate research firm. AXA also extends its use of internal “NatCat” models to cover a wider spectrum of our “Real Assets” investments, as explained in our “Physical risks” section.

Transition Risk analysis: our approach to assessing climate impacts on AXA’s Corporate Bonds & Equities portfolio.

AXA is reviewing an external methodological framework (developed by Carbon Delta) that models transition risks at company and sector level relating to “policy risks” (as defined in the TCFD recommendations) for curbing greenhouse gas (GHG) emissions, which correspond to the long-term goal of the 2015 Paris Agreement to limit climate change below a 2°C temperature increase. AXA is also assessing transition technology opportunities which would be generated via the development and sale of low carbon technology solutions to companies that need to comply with GHG reduction requirements. Only when balancing climate change policy risks on one hand with technology opportunities also generated by GHG reduction policies on the other hand could one obtain the comprehensive transition risk exposure for assets in a 2°C scenario.

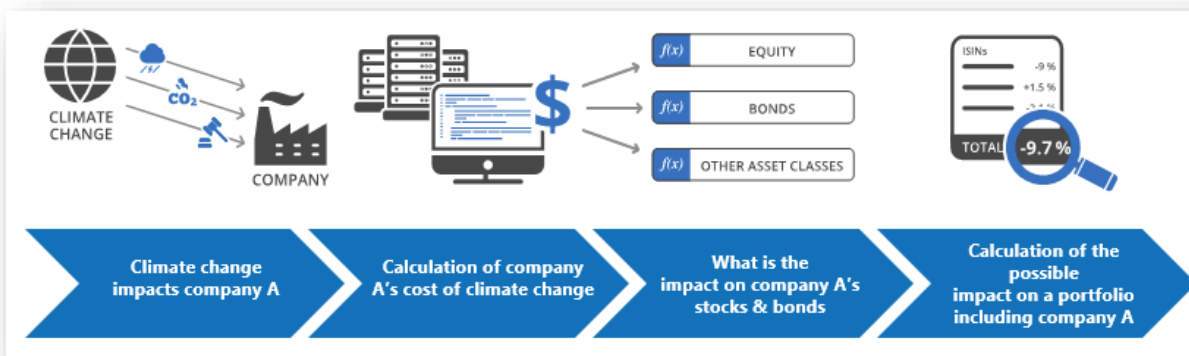
This scenario analysis currently focuses on our corporate bonds and listed equity portfolios (45% of AXA’s General Accounts assets). The climate risks and opportunities modelling has been undertaken using a top down approach. The risk model uses the following steps.

- The risk modelling starts by establishing absolute GHG emission reduction targets for each country, according to the “Intended Nationally Determined Contributions” (INDCs) that were submitted as part of the 2015 COP 21 Paris Agreement.
- Those national targets are then broken down to sector level, based on a detailed review of each INDC as well as country-specific climate policies.
- Company-level targets are then established based on the GHG emission profile of their individual assets / facilities.
- Finally, after each facility has been assigned a GHG emission reduction target in line with each INDC, future emissions reduction costs forecasts (as calculated by the Potsdam Institute for Climate Impact Research) are multiplied by the reduction target in order to attain a facility specific cost of meeting the reduction target until 2030, when the targets underpinning the INDCs are due to be delivered.
- These facility-level emission reduction costs are simply aggregated at company level in order to attain the “policy risks” associated with reaching the INDC targets.

In addition to this risk analysis, an “opportunities” analysis is also conducted. To assess the “low carbon” innovation potential of companies, a climate transition opportunities analysis based on issuer-level patent data is conducted. Indeed, patent databases have a global reach and can be used to assess low-carbon technologies developed by thousands of companies. Patent databases give an evidence-based, behind-the-scenes view into the strategic R&D investments of companies, which complements the policy risk analysis on GHG reduction requirements. A “technology opportunity” model comprises the following steps.

- First, patents are clustered into their appropriate technology classes, differentiating between low-carbon and classic technologies.
- Then the quality of each patent is assessed using standard valuation procedures, such as counting academic quotations, developed with patent offices and patent managers.
- Third, the same cost calculations established in the “policy risks” model outlined above are applied at global sector level. However, the same total costs are redistributed at sector level as revenues, based on the low carbon patent score of each company’s patent portfolio. Therefore, using patent analysis as a proxy for low carbon innovative

capacity, one can simulate which companies will be the likely beneficiaries if/when 2°C policies are implemented on a global level.



A forward-looking “Climate VaR”

Taken together, the “policy risk” model combined with the “technology opportunities” model assess the downside costs of climate change policy as well as the additional green revenues that are attainable by the most innovative companies in their field. Forward-looking quantitative results are used, in the form of company specific costs and revenues, to calculate a “Climate Value-at-Risk” (Climate VaR) per security in AXA’s portfolios.

This Climate VaR per security is calculated for equities and corporate bonds to understand the impact that future costs and/or revenues might have on the current pricing of these securities. A Dividend Discount Model (DDM) is also used to compute the impact that new, climate policy costs and revenues will have on future profits, which justify the current market value. The Climate VaR is the exact difference between the current market value of a security and the “new” present value after future climate change costs and/or revenues have been included into the DDM. The Climate VaR therefore represents the percentage of a company’s market value that is poised to decrease or increase given the occurrence of climate change costs or revenues related to each scenario. This means that the Climate VaR can be negative or positive, depending on risks and upsides.



Default risk and spreads

Since the payout profile of a bond is significantly different from equity, the effect of climate change onto the bond price, based on the change in default risk of the issuer, must be carefully modelled and cannot simply inherit the risk values from the associated equity. The higher the default risk, the lower the price for the bond. Credit risk of bonds is typically expressed as credit spread, the difference in risk free interest rate and a fair interest rate to be paid for by an issuer.

While future emission reduction costs would have no impact on the bond price per se – they must be paid for entirely by the shareholder – they would still indeed influence the EBIT of a company. Essentially, future costs must be subtracted from future EBIT, thus effectively reducing interest cover. Via this process, the development of interest cover over time is determined, with and without emission reduction costs considered.

Because of the relationship established between interest cover and credit spread, this enables to determine the difference that these costs could have on the credit spread of the issuer. Therefore, details about the default risk of the issuer, the term structure of the bond and the implied cost of a 2°C scenario are the determining factors in deriving a Climate VaR for bonds.

Although AXA is still in a testing phase of this “Climate VaR” approach, some preliminary results can be shared, below.

CLIMATE VALUE AT RISK PORTFOLIO ANALYSIS FOR EQUITIES AND CORPORATE BONDS

Climate Value at Risk Portfolio Analysis for Equities

AXA Group – Equities Portfolio (total €16Bn)		
Scenario	Climate VaR	Monetary Risk
Transition Risks potential costs and revenues (gross before tax and PB)		
2°C Scenario <i>Resulting in potential costs</i>	-3.7%	-\$904M
Green Technology Opportunities <i>Resulting in potential revenues</i>	+3.5%	+\$841M
Weighted Risk Scenario		
Aggregated Climate VaR	-0.3%	-\$63M

We have covered 98% of AXA’s listed equities portfolio with this analysis. The Climate VaR for the AXA Group’s equities portfolio is displayed in the first table above. It is worth noting that the policy risk analysis and technology opportunity analysis results aggregately in a slight downside risk for the equity portfolio under a 2°C scenario. Sectors having the highest potential costs are, in decreasing order, the utilities, transportation, energy, automobile and food/beverage. Within each sector certain issuers are much better equipped to face the low carbon transition, even in typically high-risk sectors such as utilities, energy, and materials. For instance, in the Materials sector, which contains large industries such as cement and steel manufacturers, AXA’s investments are poised to gain value even under a 2°C scenario. This shows that our portfolio managers, without having formally applied a “Climate VaR” approach to their investment decisions, have selected companies that have higher “low carbon” innovation potential.

We are still reviewing and assessing the detailed outputs of this experimental Climate VaR analysis in order to determine whether it is sufficiently robust to be deployed on our Equity portfolios. Nevertheless, we have been able to cover 98% of AXA’s listed equities portfolio by this analysis as of July 2017 and believe this work carries many insights into the much-researched area of climate risk analysis.

Climate Value at Risk Portfolio Analysis for Corporate Bonds

AXA Group – Bonds Portfolio (total €187Bn)		
Scenario	Climate VaR	Monetary Risk
Transition Risks potential costs and revenues		
2°C Scenario <i>Resulting in potential costs</i>	-0.01%	-\$24M
Green Technology Opportunities <i>Resulting in potential revenues</i>	+0.004%	+\$7M
Weighted Risk Scenario		

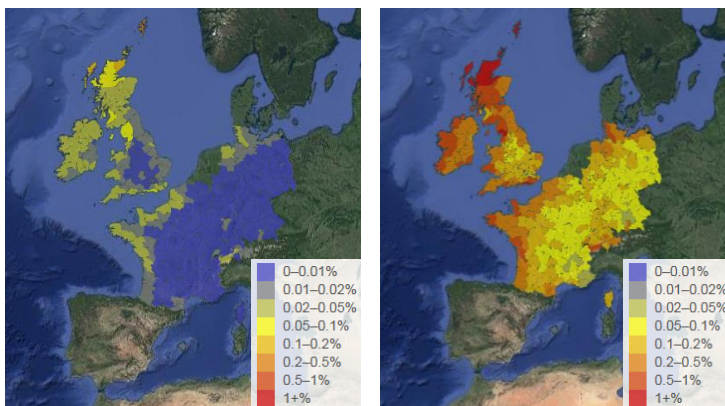
Aggregated Climate VaR	-0.01%	-\$18M
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We have covered 90% of AXA’s corporate bonds portfolio with this analysis. The Climate VaR of the AXA corporate bonds portfolio appears to be close to 0%, reflecting the fact that bonds generally have a lower exposure to climate change risks than equities, mostly due to their pay-out schedule. Sectors contributing to the already low levels of risk are, in decreasing order, utilities, materials, energy, automobiles and food/beverage. These findings are very much in line with both a composite benchmark mirroring AXA’s portfolio allocation in terms of sectors, geographies and currencies, as well as the ICE BofAML Global Corporate Index as of January 2018.

When compared side-by-side to these benchmarks, AXA’s bond portfolio is particularly well-positioned in the energy and automobile sectors, meaning that our bond holdings in these sectors should outperform these benchmarks under a 2°C scenario. This result probably reflects the impact of AXA’s divestments focusing on the coal and oil sand sectors (outlined in more details below).

We are still reviewing the detailed outputs of this Climate VaR analysis in order to determine how best to manage our bonds portfolio in the face of climate change scenarios. This analysis provides insights, but as with the equities portfolio, further assessments are required.

Physical risks: climate impacts on AXA’s Real Assets portfolio



In addition to the above “transition” risks, climate change, and in particular, extreme weather events, may impact “Real assets” such as real estate. This is termed as “physical” risks. In 2016, AXA conducted an analysis on a selection of €15bn of property assets. In 2017, AXA expanded this analysis to cover a broader scope of €34bn of property, Commercial Real Estate debt and infrastructure debt. AXA’s Investments and Risk Management teams evaluated the financial impact of floods and windstorms on the buildings and infrastructure of these portfolios.

Our physical risk assessment uses “NatCat” models – generally used to assess the impact of natural catastrophes on insured exposure – combining stochastic events in Europe (windstorms and floods) and US (hurricanes) and geolocalised portfolio of Real assets. Specific “destruction rates”, which factor location, building / infrastructure type and construction materials are then used to determine potential damage rates and derive a loss for each building / infrastructure.

Our results, which are based on an internal exploratory methodology, show that both annual average losses, as well as losses generated by flood and windstorm events with a return period of 100 years, remain limited compared to the total asset value.

AXA directly manages Real Estate portfolio located in 14 countries. Our Risk Management teams have evaluated the financial impact of floods and windstorms on these buildings in a selection of seven countries representing 88% of the portfolio. Some results are detailed in the tables below.

Floods and windstorm: potential average annual losses of AXA Real Estate Portfolio

K€	Germany	UK	Luxembourg	France	Switzerland	Belgium	USA
Floods	400	79	*	*	*	*	*
Windstorm	173	233	5	572	317	184	32

Floods and windstorms: potential losses of AXA Real Estate Portfolio potentially occurring once every 100 years

K€	Germany	UK	Luxembourg	France	Switzerland	Belgium	USA
Floods	6 960	798	*	*	*	*	*
Windstorm	1 946	3 205	52	5 149	5 778	2 598	668

For instance, AXA's real estate exposure in Germany (representing approximately 10% of AXA's real estate portfolio) can be impacted by floods and windstorms as follows:

- Per year, the loss would reach approximately 400K€ due to floods and 173K€ due to windstorms – which are relatively small figures.
- Events potentially occurring once every 100 years would cause losses of approximately 7M€ due to floods and 2M€ due to windstorms.

* As we base our analysis on a market CAT model, some countries, in particular for flood risk, are not covered as they are not in the scope of the model. We are currently working on an internal view of CAT risk and will be able, by 2019, to assess the impact on assets portfolios for a wider scope of European countries.

Note: AXA's Insurance (P&C claims) risks are fully modelled, but this is not the scope of this report; it is further developed in AXA's Annual Financial report in section 4.6 (Risk Factors).

2.2 INSURANCE

Climate risks analysis

AXA's Property & Casualty business is exposed to climate-related natural catastrophe risks such as windstorms, hurricanes, floods. New exposures and changing weather patterns create additional uncertainty on the frequency and severity of natural disasters. Our strategy is to accelerate the development of our catastrophe risk modelling capacities, based on both external (academic) and internal scientific resources. The link between the "observed" climate change and the frequency and severity of natural disasters is a key challenge for AXA. Catastrophe loss figures show a steadily increasing pattern, and this is largely explained by assets increasingly built near coasts, rivers, in small islands or earthquake-prone areas.

However, no robust statistical global link between the frequency or severity of climate-related perils and climate change has been scientifically proven yet. A distinction must be made between what is very likely (such as mean sea level elevation, small coastal floods, threats to biodiversity, population displacement) and what is not, especially wind events or severe floods driven by cyclonic phenomena, which have not appeared to be more frequent or more severe so far. This distinction is key to focus on the most relevant risks in order to take appropriate risk prevention measures and public policy in general.

Human rights risks analysis

AXA is exposed to Human Rights through its business and operations. The AXA Group is committed to respecting internationally recognized human rights principles as defined by the United Nations Universal Declaration of Human Rights, the core standards of the International Labour Organization and the Guiding Principles for the implementation of the United Nations "Protect, Respect and Remedy" Framework ("Ruggie Principles"). Our commitment also covers international general and sector-specific standards such as the UN Global Compact, the UN Principles for Responsible Investment and the UN Principles for Sustainable Insurance.

As a response, we have developed a Human Rights policy which is based on an assessment we used to identify the Human rights impacted by the business activities of insurance companies (i.e. insurance, investment, own operations) and to

define priority areas for Human rights due diligence at AXA. The "Responsibility to respect Human rights", as laid down in the Ruggie principles, formed the basis for this assessment. It requires that businesses:

- Avoid causing or contributing to adverse Human rights impacts through their own activities, and address such impacts when they occur;
- Seek to prevent or mitigate adverse Human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.

The scope of the assessment thus included AXA's Human rights impacts in relation to its employees, clients, investments and suppliers, and covers every AXA entity.

The basis for the identification of Human rights was the International Bill of Human rights consisting of the Universal Declaration of Human rights (UDHR); the International Covenant on Civil and Political Rights (ICCPR); and the International Covenant on Economic, Social and Cultural Rights (ICESR).

A list of various human rights-related issues was analysed to determine whether AXA could have adverse impacts on human rights and have the ability to protect or mitigate possible violations of these rights. For each Human right it was determined whether it was relevant for each of the business activities conducted by AXA. The resulting list of "relevant" Human rights was then "clustered" and used as the starting point to analyse which business activities of AXA might impact the relevant Human rights identified.

See further information in AXA Group's Human Rights Policy: <https://www.AXA.com/en/about-us/our-commitment-to-human-rights>, as well as in our 2017 Report (https://www-AXA-com.cdn.AXA-contento-118412.eu/www-AXA-com%2F1f282cf3-0564-450d-9b05-a3926f2df432_AXA_relevant_human_rights_2017.pdf).

This policy is also fully developed in section 7.6 "Vigilance Plan" of AXA Group's 2017 Annual Report: <https://www.AXAaxa.com/en/newsroom/publications>

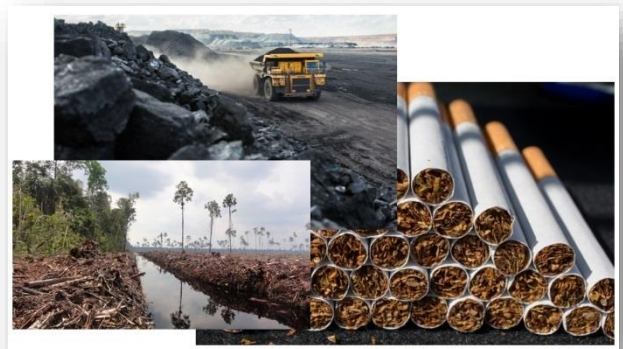
3) RISK MANAGEMENT: INTEGRATION OF ESG AND CLIMATE-RELATED RISKS AND OPPORTUNITIES

In addition to measuring ESG and climate metrics, AXA actually factors some of these risks and opportunities into its investments and insurance-related processes. This is undertaken notably via focused exclusions, “green” and “impact” investments, shareholder engagement, public policy outreach, academic research, investment and insurance product development.

SECTOR EXCLUSIONS

AXA’s Responsible Investment strategy includes several sector-level divestments. Indeed, certain activities and products are inconsistent with our corporate responsibility goals of protecting people over the long term. In this context, AXA has developed specific sector guidelines and business restrictions, which apply both to investments and insurance. AXA’s current divestments / business restrictions currently cover the following areas:

- “Controversial weapons” manufacturers that are banned by international conventions (antipersonnel landmines, cluster munitions / cluster bombs chemical, biological and depleted uranium weapons, nuclear weapons proliferation).
- Tobacco manufacturers, whose products are the cause of long term non-communicable diseases, which conflicts with our role as one of the world’s largest health insurers.
- Palm oil producers which do not adhere to this industry’s best sustainability practices (notably regarding deforestation, land and labour rights).
- Soft commodity derivatives which may be responsible for inflating the price of basic food commodities.
- Coal and oil sands: see “One Planet Summit” section below.



These policies are disclosed publicly on <https://www.axa.com/en/about-us/responsible-investment>

“ONE PLANET SUMMIT” 2017: A NEW CLIMATE AMBITION

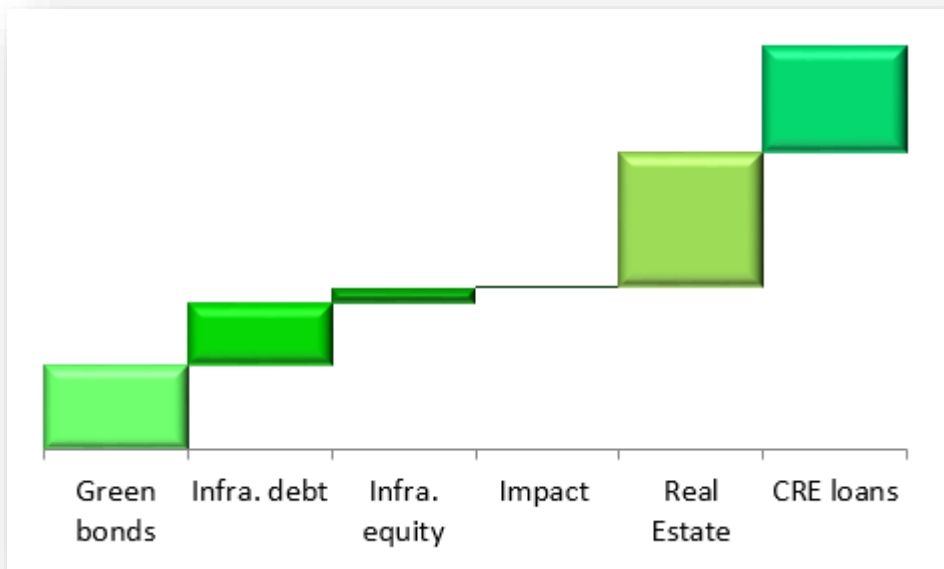


In 2015, AXA stated that investors and insurers have a key role to play in the fight against climate change, and proved it through strong action: AXA was the first global investor to initiate divestment from coal, and the first to phase out the insurance coverage of coal clients. We also adopted ambitious green investments targets. Ahead of COP21, we signalled that climate finance is a complex issue, but it can nonetheless be tackled. This helped AXA and some peers to overcome paralysis by analysis and shift into action mode. During the December 12, 2017 “One Planet Summit”, organized by the French Government, AXA announced the significantly ramped-up climate strategy described below.

Green investments

In 2015, AXA had committed to reach €3bn in green investments by 2020. We have reached that target in 2017 and have decided to set the bar higher to reach €12bn in green investments by 2020, using a broader set of asset classes as well as growing our underlying commitment in each of these asset classes.

This doubles the [recommendations by Christiana Figueres](#), one of the main architects of the COP21, to dedicate 1% of institutional investments to green assets.



This investment includes notably green infrastructures, green bonds, property and commercial real-estate loans with stringent environmental standards. AXA’s definition of “green” infrastructure is derived from accepted and demanding market-based approaches. In addition, in the case of Real Estate and Commercial Real Estate loans, AXA applies the strictest environmental standards, as described below:

- Green Bonds are already labelled as such, notably by the Climate Bonds Initiative as well as ratings agencies which confirm that definitions and use of proceeds are respected. However, AXA IM adds an extra review to confirm the actual “greenness” of the bond using more stringent criteria.
- For Infrastructures, AXA also relies on the Climate Bonds Initiative, with a focus on renewables, water treatment, and clean transport.
- The “Green Impact” investments gather assets invested in our Impact Funds targeting climate impacts.
- For Property assets, our strict 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”.
- For CRE debt, we use a strict definition of “green” as well as for loans backing buildings with a high level of environmental certification (minimum level Excellent or Gold). Here, we do not reference the EPC as it is not influenced by the debt holder.

Expanded coal divestment

Carbon emissions will require significant curbing in order to reduce the risk of climate change, which may place business constraints on carbon-intensive industries, leaving some assets “stranded”, which in turn may lead to reduced valuations. Current valuation models may not account for such risks adequately. This is why AXA had decided in 2015 to divest €500m from the coal industry, by targeting coal mining and coal-based electric utilities which derive over 50% of their revenues from coal.

In 2017, AXA decided to increase its divestment to reach €3bn, by expanding our coal exclusion criteria. This new divestment is based on the Global Coal Exit List, an NGO tool using 3 criteria. AXA will now divest from the following company types:

- Electric utilities with coal share of power production (energy mix) over 30%; mining companies with coal share of revenues over 30%. This captures long term financial risks related to “stranded assets”.
- Energy mix and revenue mix criteria do not enable to address companies that are actively developing new coal-based power capacity. Hence, we now also divest from companies with coal-based power “expansion plans” exceeding 3 Gigawatts (GW). Such companies are building new coal plants that are locking economies into coal

power for decades, which clearly contradicts the COP21 "Paris Agreement". This new approach captures "real" climate impact, beyond pure financial risks. It is also more forward-looking.

- Mining companies with annual coal production over 20 Million Tons.



Oil sands divestment

Because oil sands are also an extremely carbon-intensive form of energy and a serious cause of local environmental pollution, AXA also decided to end its investments from the main oil sands producers, defined as producers with at least 30% of their reserves based on oil sands. The production volumes of oil sands are largely influenced by the development of certain pipelines. As a result, AXA also divests from the main associated pipelines players. This represents an extra divestment of over €700m.



Emerging countries

AXA and the IFC, a member of the World Bank Group focused on the private sector, announced the launch of a \$500m partnership supporting an infrastructure fund that will notably finance green infrastructures in emerging countries,

including renewable energy, water, green transport and telecoms. There will be no investments in coal and oil-sands related projects.

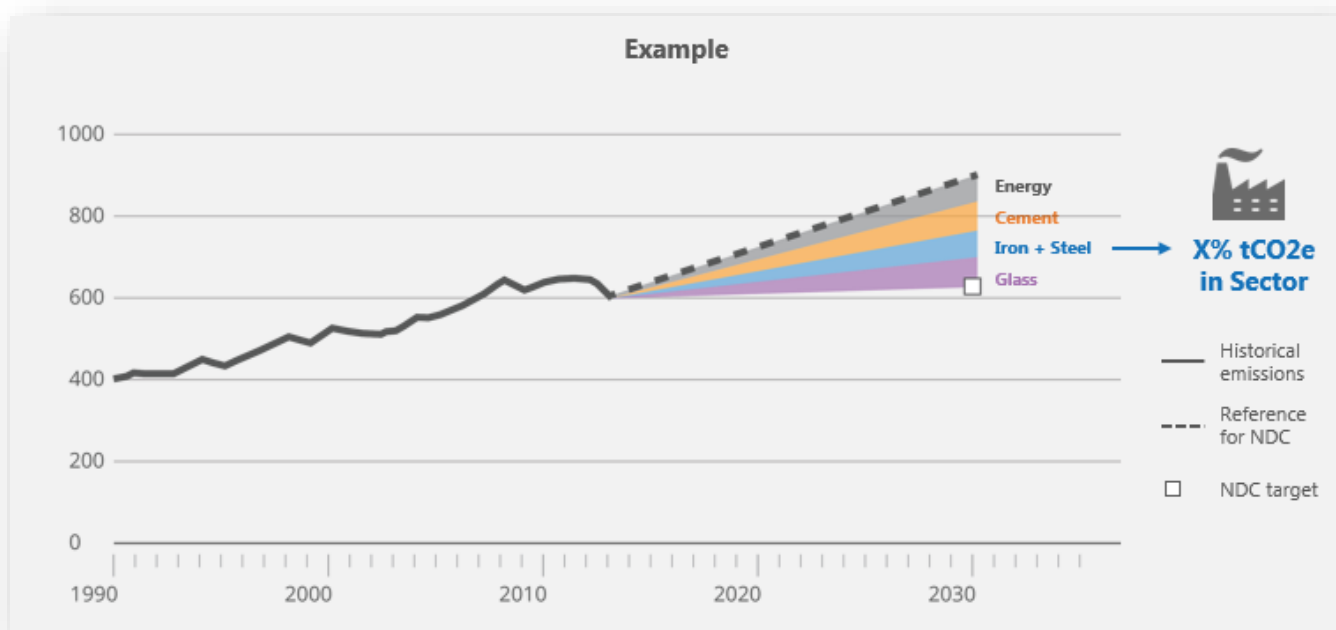
“2°C” PORTFOLIO ALIGNMENT ANALYSIS

Instead of relying exclusively on carbon footprinting (section 4), AXA is exploring ways to measure the positioning of its portfolio versus a 2°C target. AXA is thus currently reviewing and testing Carbon Delta’s “warming potential” methodology on a share of its portfolio (corporate bonds and equities: 45% of AXA’s General Accounts assets). This approach computes the warming potential of an issuer, namely a temperature value that signifies which warming scenario (e.g., 1.5°C, 2°C, 3°C, BAU, etc.) the issuer’s current activities are best aligned with. The “Portfolio Warming Potential” is computed as a weighted aggregate of the issuer-level warming potential.

This warming potential methodology captures multiple climate change related aspects of an issuer’s activities: Scope 1 and Scope 2 emissions (“direct” emissions, as defined by the Greenhouse Gas Protocol) representing the present-day issuer activities, as well as investments in low-carbon technology to capture a forward-looking emission trajectory. The portfolio warming potential calculation is based on the alignment of each company within the portfolio to the sectoral GHG emission intensity needed for each sector to make its contribution to reach the global 2°C target.

The methodology used follows specific steps. Sectoral-level emission budgets are first established, using the emissions intensity levels required for each sector to reach a “2°C” scenario. Then, for every sector, the relationship between sector emissions and warming (temperature) is calculated, resulting in a sector-level warming potential. The future emissions intensity of each company, based on the sector that the company is active in, is then identified and compared to its sector average. Finally, each company’s warming potential is derived from its future emissions intensity in relation to the sectoral warming function.

As a result, the weighted sum of all warming potential temperatures of a company constitutes the final warming potential of a company. The resulting warming potential is used to compare the climate change trajectory of companies within the same sector.



This innovative work provides insights into our investments, as the security-specific Warming Potential is expanded into a broad “temperature gauge” for our holdings. However, we cannot yet consider a comprehensive “Portfolio Warming Potential” due to a shortage of portfolio coverage, the experimental nature of the approach and some additional data to be factored in, such as our Green investments target (outlined above).

SHAREHOLDER ENGAGEMENT

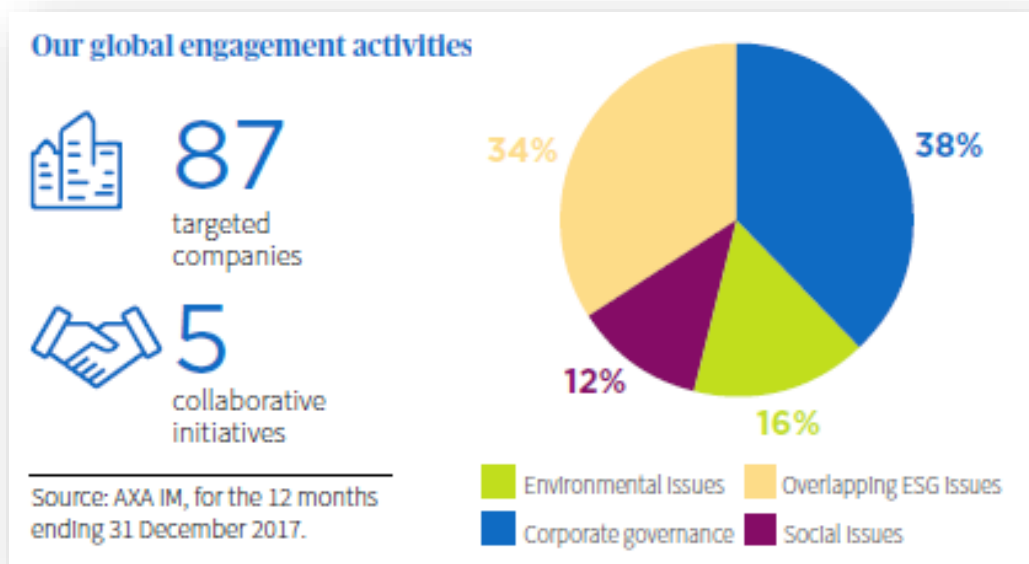
AXA's above divestments are complemented by an active engagement strategy. Indeed, as a shareholder and bondholder, AXA has the possibility to engage with the management of companies in which it invests in order to help catalyse positive change on certain issues. This is undertaken directly by the Group and via AXA IM's engagement team.

AXA Group

- AXA is a member of "Carbon Action 100+", a 5-year investor coalition to engage with the world's largest corporate greenhouse gas emitters (150 companies identified) to curb emissions, strengthen climate-related financial disclosures and improve governance on climate change. Specifically, through collaborative engagement, investors request companies to take action to reduce greenhouse gas emissions, consistent with the goal of the Paris Agreement to keep global temperature rise well-below 2-degrees Celsius. They will also provide enhanced corporate disclosure in line with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations.
- AXA chairs the French Insurance Federation working group on exclusions and divestments. The group's mission is to encourage debate on divestments and exclusions among French Insurers, and to promote best practices.
- AXA is a member of the PRI ESG Engagement Advisory Committee. The purpose of this committee is to advise the ESG Engagements department on its general strategic direction, provide feedback on topics to be considered for future PRI-coordinated collaborative engagements and help in promoting the UN PRI agenda.
- AXA also supports the UN PRI shareholder engagement initiative designed to promote adoption of the TCFD guidelines; a collective engagement initiative on Arctic Drilling, targeting oil & gas companies involved in oil exploration in the Arctic, as well as Arctic Council members; "Aiming for A", a major collective shareholder engagement initiative urging certain companies to improve their reporting on transition risks; an Automotive industry ShareAction initiative seeking to clarify carbon and SOX/NOX emissions standards from the automotive sector; and the UN PRI "Palm Oil Initiative".

AXA Investment Managers

- To support its engagement work and to use the decision-making powers of the shareholder body at General Meetings to push companies to accelerate strategic planning on climate change, AXA IM has been filing shareholder resolutions to ensure that discussions around climate change are part of the General Meeting agenda at key companies. In 2016 they filed shareholder resolutions at the General Meetings of three companies in the UK Mining sector – Anglo American, Glencore and Rio Tinto - and in 2017 they filed a shareholder resolution at the meeting of the US Oil & Gas company Exxon Mobil. All resolutions were approved by shareholders. The case of Exxon Mobil is noteworthy as the resolution was passed by 62.3% of votes cast at the General Meeting - one of the few occasions where a climate related resolution has been approved at the General Meeting of a US company.
- In its revised Corporate Governance & Voting Policy, AXA IM has highlighted the importance of companies managing the critical issue of climate change. In 2017 they were part of a coalition of investors that filed and voted in favour of identical shareholder resolutions at the General Meeting of 15 key US Oil& Gas and Electric Utility companies seeking improved disclosure around the management of climate risks. AXA IM voted in favour of resolutions at all these companies.
- Human rights in the Oil & gas and Mining sectors: one of AXA IM's engagement objectives is to encourage companies in these sectors to enhance the implementation of the UN Guiding Principles on Business and Human Rights within their business strategy and operations. They also aim to improve the level of disclosure on their policy and process for managing these risks.
- China National Offshore Oil Corporation (CNOOC): AXA IM actively engaged with the company in relation to the management of social risks, in particular safety issues and human rights impacts of their operations.
- Mitigating supply chain risks: AXA IM's engagement activity focus on companies with exposure to agricultural supply chains. It is used to improve the management of risks related to labour practices in agricultural supply chains. This is an issue which can affect the long-term performance of companies particularly in light of tighter regulations such as the UK Modern Slavery Act, the California Transparency in Supply Chains Act, the EU Non-Financial Reporting Directive.



PUBLIC POLICY OUTREACH

AXA is a member of numerous organisations that support the ESG and climate agenda.



UN PRI - AXA Group and both of its investment management subsidiaries are members of the United Nations Principles for Responsible Investment (UN PRI). The UN PRI is a major collective initiative that seeks to promote responsible investment among investors and asset managers. Both AXA

Investment Managers and AB Global have been UN PRI members since, respectively, 2007 and 2011. The UN PRI are a set of 6 principles which invite signatories to better integrate ESG considerations in their investment decisions and ownership practices. The initiative was launched under the auspices of the United Nations in 2006. The signatories publicly declare that those issues are relevant long-term factors, and are committed to manage them accordingly. This initiative is relevant for long-term investors such as pension funds or insurers which have long term liabilities.



UN PSI - The UN Principles for Sustainable Insurance is a major international coalition of the insurance industry. The PSI were launched during the "Rio+20" UN conference in 2012. AXA is one of 27 founding signatories. The signatories of these principles commit to integrating environmental, social and governance criteria into their business and their stakeholder relationships.



TCFD and "article 173" - AXA co-chaired the global Task Force on Climate Related Financial Disclosures (TCFD), set up by the Financial Stability Board (FSB), and presided by Michael Bloomberg. The TCFD provides guidance on how to disclose climate change risks and opportunities. As we seek to practice what we promote, our first TCFD report was published in March 2018. This work builds on our first TCFD-like analysis (related to France's "article 173" requirement) published in 2016. France's

"article 173" decree requires all investors to analyse and report on climate-related risks. Our work was praised (1st award by French government) in 2016.



EU High-Level Expert Group on Sustainable Finance - AXA contributed to the EU High Level Expert Group on Sustainable Finance, which developed recommendations on how sustainability could be placed in the European Union's core financial processes, how different participants in the financial system could act on it, and how to mobilize capital more effectively for a sustainable economy. Sustainable finance offers Europe a powerful tool for achieving its goals of economic prosperity, social inclusion and environmental regeneration.

Coalitions and active memberships

AXA supports Investor and Insurance-led coalitions active in the fields of ESG, RI and Corporate Responsibility: IIGCC, Montreal Carbon Pledge, Science Based Targets, RE100, Caring for Climate Carbon Pricing Leadership Coalition, ORSE, EpE, Finance for Tomorrow, "Kyoto statement" of the Geneva Association, etc. AXA signed the UNISDR Private Sector Commitment for Disaster Risk Reduction.



United Nations Global Compact - Launched in July 2000 by UN Secretary General, the Global Compact seeks to encourage businesses, UN agencies, the labour market and NGOs to work together to integrate 10 universal principles on human rights, labour, the environment and the fight against corruption. The Global Compact is based on the rules of international law adopted by the majority of

countries, such as the Universal Declaration of Human Rights and the standards promoted by the International Labour Organization. Each year, as an "active member", AXA updates the Global Compact database with information on best practices that reflect these 10 principles, via a dedicated "Communication on Progress".

ACADEMIC RESEARCH

AXA has been supporting public academic research since 2007 via the AXA Research Fund. Since 2007, AXA has dedicated €180M to the funding of academic research. A significant proportion of the funding supports research on environment and climate change. Examples of projects supported by the AXA Research Fund:

Could a Climate Change/Earthquake Link Mean Unexpected Tsunamis?

Climate change is responsible for many transformations taking place on earth, including, potentially, more earthquakes. Dr. Rebekka Steffen is a geoscientist studying the impact of melting ice sheets on seismic activity. As the load of ice decreases, it changes the stress present in the earth's crust. These forces could activate formerly quiet seismic faults and generate powerful earthquakes. Researchers know that such glacially induced earthquakes occurred 10,000 years ago. With climate change and shrinking ice sheets, similar activity is likely to increase around the world, potentially leading to tsunamis.

Helping China's crop production sustainably face the challenges of tomorrow

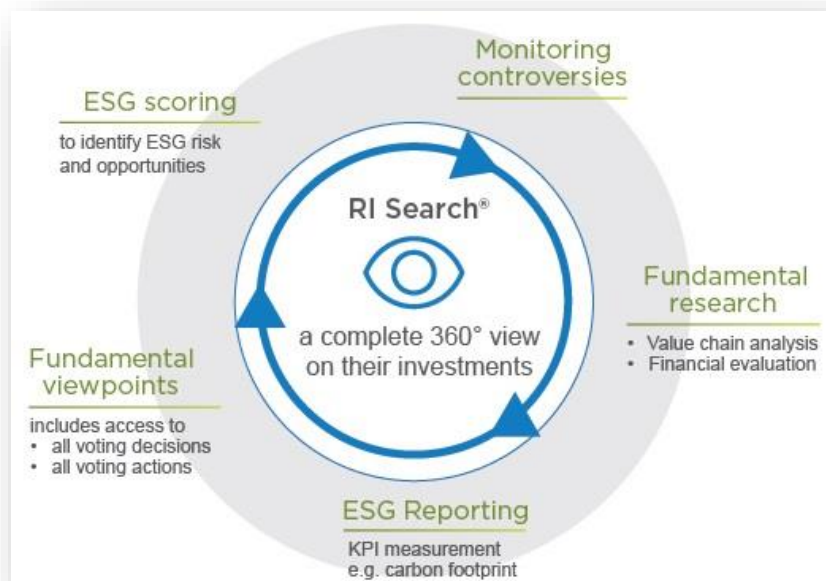
With rising temperatures and an increasing frequency in extreme events, climate change is suggested to adversely impact crop yields, thereby threatening the needs of a growing world population. At the same time, the expansion and intensification of crop production to meet the increasing demand are likely to boost greenhouse gas emissions, further exacerbating climate change. As the country with the largest population on the planet and a proportionately limited surface of arable land, China is especially exposed to the risks associated with this vicious circle. Dr. Xuhui Wang is developing a model to study the Chinese production and greenhouse gas emission of major croplands (wheat, maize and rice) and their responses to global change factors, including extreme climatic events, under various management practices. The objective of the model simulations is to provide the necessary understanding for the identification of promising strategies to ensure the productivity and sustainability of crop production in the future.

The complete list of projects supported by the AXA Research Fund is accessible here: <https://www.AXA-research.org/en/projects>

ESG-RELATED INVESTMENT PRODUCTS AND COMMUNICATIONS TOWARDS CLIENTS

AXA Investment Managers products, based on RI Search

As described in section 2, RI Search is an internal tool which provides AXA IM fund managers proprietary ESG scoring at both portfolio and security level to help in investment decision making. RI Search integrates our ESG fundamental and quantitative research, and is available to 100% of our funds managers. It provides a wealth of qualitative and quantitative ESG information, covering 90 countries and 5000 securities, and includes investment universe screening, ESG portfolio footprints, carbon data calculations, sector screening, company specific ratings, and qualitative research and analysis.



AXA IM offers various ESG options to its clients by granting them access to a broad spectrum of asset classes and thematic funds, being through Core Responsible Investment Funds (such as AXA Trésor court terme, Label Euro Obligations, Label Europe Actions, AXA Eurozone RI, all classified under the ISR Label – 13 funds in total), but also thematic impact funds (AXA World Fund Planet Bonds, AXA World Find Global Factors, AXA World Fund Human Capital, AXA World Fund Mix'in Perspectives).

For example, the AXA WF Human Capital fund invests in European SMEs with well-managed human capital. The analysis covers the monitoring of the quality of working conditions, career management, training and job creation. Indeed, a well-managed human capital is expected to lead to a higher level of retention, innovation, customer loyalty and productivity – this is particularly crucial for SMEs' long-term growth and success.

Planet Bonds fund

AXA IM is a pioneer of the Green Bonds market, by integrating this asset class into its bond management as early as 2012. Over the last few years, AXA IM has thus supported the growth of this market by managing significant assets.

AXA WF Planet Bonds was launched in November 2015, and gives investors access to the green bond market. AXA IM's approach integrates environmental analysis with the views of the bond manager: analysis of the environmental quality of each project, ESG quality analysis of the issuer, fundamental analysis of the characteristics of the bond and potential offered in terms of performance. This fund, which contributes to the financing of the energy transition, takes into account both financial and environmental criteria. The Fund provides an attractive yield within the fixed income universe: clients do not have to give up yield relative to the wider fixed income universe.

AXA IM – ESG integration-related communications to clients

AXA IM plays an active role in promoting acceptance and implementation of ESG issues within the investment industry. Initiatives include: assisting insurance clients to integrate ESG issues into their day-to-day activities e.g. through

demonstrations of the RI Search Tool; tailored training programmes for clients on ESG issues; participation in seminars and other public forums where ESG issues are discussed; explanatory notes with regards to Article 173 requirements; educational document for clients with regards to the French Energy Transition Law; Thought leadership report on climate change identifying investment opportunities in the energy transition.

AXA France

AXA France offers savings and pension services to companies for their employees. The majority of AXA France group savings products are based on AXA IM SRI Funds commercial brochures include a focus on the meaning of art.173 for AXA's institutional clients and the corresponding commercial offers. Dedicated commercial events as well as customer engagement are conducted by the AXA France "Epargne Retraite Entreprises" team. These meetings often involve the clients' HR teams (generally Compensation & Benefits teams), who are newcomers to carbon-related debates.

ESG INTEGRATION INTO INSURANCE BUSINESS

When appropriate, the Group's underwriters integrate environmental and social risks, including human rights concerns, as well as more general ethical concerns in their product development processes and policies. This is notably undertaken via applying the Group underwriting guidelines for P&C commercial lines which require local AXA entities to exclude certain sensitive sectors or activities, and the Group's "Sanctions Policy" on business relationships involving sanctioned countries and countries identified as having high levels of corruption or political risk. The latter policy formalizes the Group policies and procedures with respect to business in or with countries that are subject to international sanctions or embargoes or otherwise identified as high corruption, high political risk and/or tax haven jurisdictions.

Climate-related insurance exclusions: coal and oil sands

As we believe it makes no sense to commercially support industries which we have decided to divest from, the commitment to divest from coal and oil sands is also reflected in our insurance business:

- AXA no longer supports the development of new coal capacity by ending Construction covers for any new coal plant and new coal mine, independently of investment blacklist.
- AXA no longer supports the operations of existing coal by ending Property covers for existing coal plants when these are included in coal-only insurance policies.
- AXA no longer insures the oil sands industry (extraction and associated pipelines).
- In addition, AXA does not underwrite upstream oil & gas exploration business in arctic regions.

Underwriting restrictions also apply to our other investment exclusions.

Green Products

AXA has developed a range of green insurance products. These include, for example, motor insurance encouraging low emissions vehicles, home insurance with environmental appliances upgrades, SME covers favouring "green" buildings or car fleets, the promotion of renewable energies via adapted policies covering the equipment and the revenues derived from electricity sales, etc.

Parametric insurance

AXA has developed a partnership with the World Bank to expand the availability of innovative climate index ("parameter") insurance solutions. The insured's losses are correlated to an index, (e.g.: rainfall in millimetres), and a set amount is paid out if that index is reached. AXA already offers parametric insurance in 28 countries across the globe, covering diverse risks for numerous industries, mainly focused on large corporations and the public sector. For example, AXA covers solar panel farms in China against lack of sun causing a decrease in energy production. Similarly, in Africa, AXA protects farmers against drought risks.

Assurance citoyenne: ESG scoring and labelling of retail insurance products

AXA France, through the implementation of its “Assurance citoyenne” programme, developed a successful customer-facing label which aims at signalling the sustainable added-value of our insurance products. AXA France elaborated a set of criteria, which are scored, to better define sustainable insurance products. A product receives the “Assurance Citoyenne” label above a certain scoring threshold. These products include the following features:

- TRUST, e.g.: clear communications to customers and dedicated claims handlers.
- PREVENTION, e.g.: pricing incentives that help customers identify and prevent or reduce risks.
- ENVIRONMENT, e.g.: paperless contract, products offering incentives or pricing benefits when covering buildings using material which are environmentally friendly.
- FAIRNESS, e.g.: accessibility of the product to usually excluded populations from insurance.

In 2017, AXA France also launched a new responsible Unit-linked offer called “AGIPI Gestion Pilotée Option ESG”. Most of the funds within this offer are evaluated according to their ESG performance using a market-based tool.

4) ESG AND CLIMATE-RELATED METRICS AND TARGETS

CARBON FOOTPRINTING

In addition to the ESG metrics described in section 2, AXA tracks carbon-related KPIs. Indeed, AXA signed the “Montreal Carbon Pledge”, committing to assess and disclose the carbon intensity of its investments.

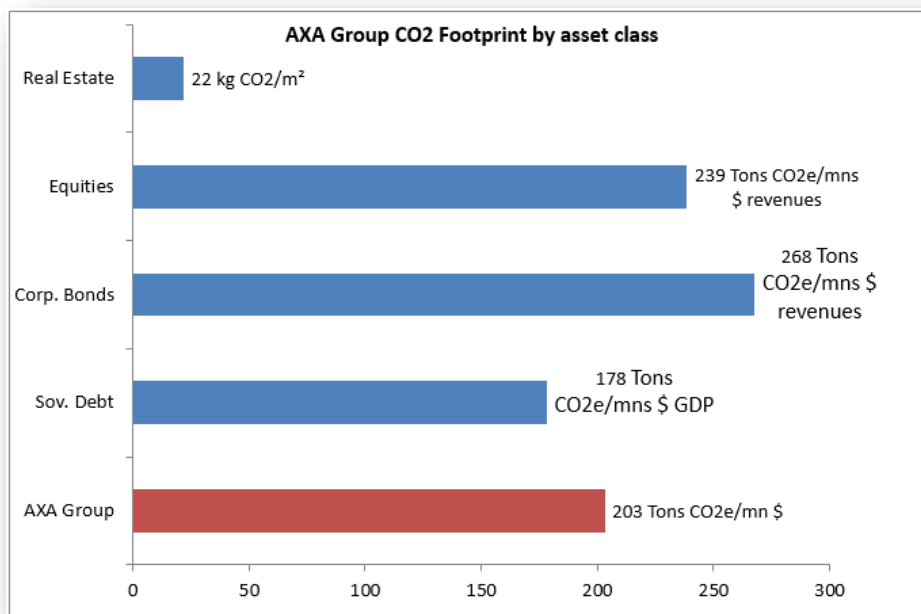
Methodology

The carbon footprint is calculated as follows:

- Equities and Corporate Bonds: “direct” CO₂ emissions (related to internal industrial processes + electricity purchased + business travel) normalized by millions of US Dollars of turnover (CO₂ tonnes / \$M turnover). Other greenhouse gases are adjusted by their respective global warming potential to allow for a comparison of their relative climate impact.
- Sovereign debt: CO₂ tonnes / \$M of GDP.
- Real estate: CO₂ kg per square meter.

2017 results

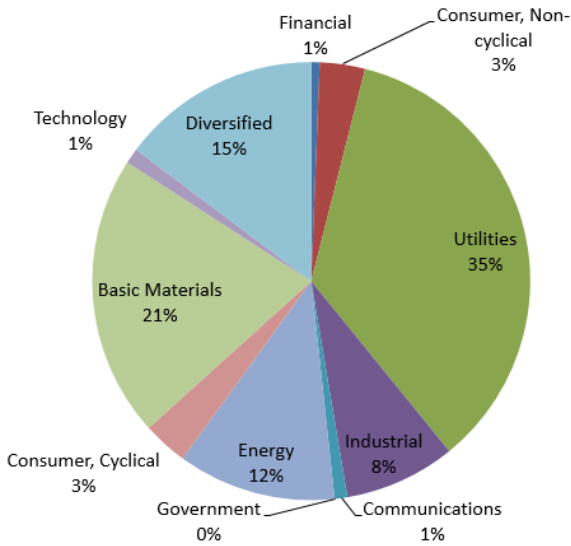
The 2017 analysis, which covers 82% of AXA’s General Account assets (equities, corporate fixed income and sovereign debt), shows the following results.



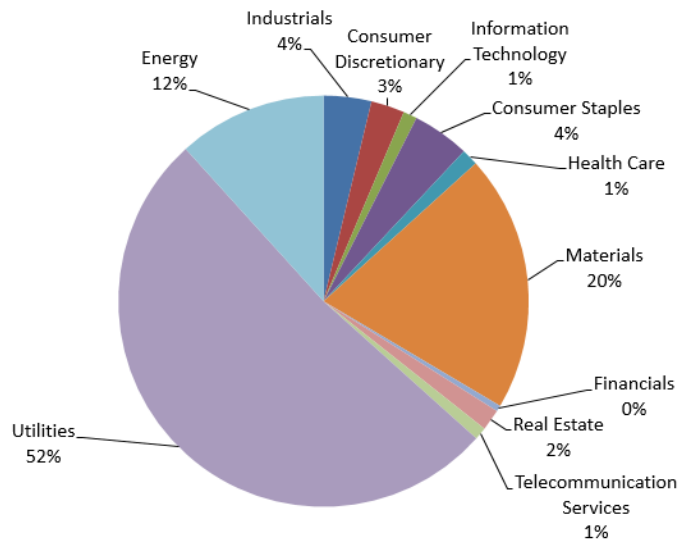
Note: we have recently added Real Estate-related emissions, but these results are not aggregated in the overall average carbon intensity KPI, owing to its different calculation basis (Kg CO₂ / sq.M vs T.CO₂ / M\$).

The breakdown per sector and asset class is as follows.

Corporate Bonds CO2 Footprint (in CO2 Tons/mns \$ revenues)

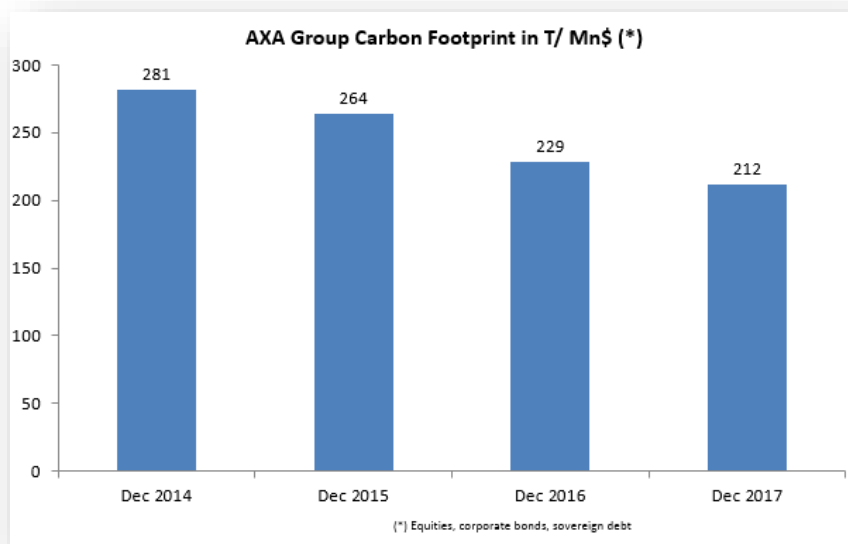


Equities CO2 Footprint (in CO2 Tons/mns \$ Revenues)



Historical analysis

The 2017 results show a decreasing average carbon intensity since 2015.



Our analysis shows that this downward trend is the result of different factors, including methodology-driven, as follows:

- 2014-2015: the carbon intensity decline (6% annualized) is due to a drop in the carbon intensity of our Corporate bonds and equities, and in particular related to a reduced exposure to the Utilities, Basic materials and Energy sectors. This is caused by AXA’s first coal divestment which was announced in May 2015 and implemented by year end 2015. Notably, the equity holdings’ carbon intensity dropped by 30% during this period, while our debt holdings’ carbon intensity dropped by 9%. Our Sovereign debt assets remained stable despite a negative trend (ie. higher carbon intensity) from German debt.
- 2015-2016: this carbon intensity decline (-13% annualized) is caused primarily by a drop in the Sovereign debt’s carbon intensity (in particular Belgium, Italy and France), while Equities and Corporate Debt declined slightly. However, this is largely due to a reporting effect, not actual annual declines. Indeed, there is usually a 3 to 5 years lag between a current year and effective CO₂ emissions date reported by the World Bank (<https://data.worldbank.org/>). As a principle, when measuring carbon footprint for countries, we apply the most recent data covering the largest number of countries at the time we download the data. As AXA started measuring its carbon intensity in 2014, the

actual data used dated to 2010 both for 2014 and 2015, but in December 2016 and December 2017, this data corresponded respectively to 2013 and 2014. As a result, the 2016 data represents a 3 years variation. Going forward, the data variation will correspond to 1-year variation, but still with a lag of 3 years.

- 2016-2017: the 7% annualized decline is explained by a smaller but more generalized decline in the carbon intensity across asset classes, and for more sectors (Consumers sector for example). It is however difficult to attribute this decrease to a selection effect (from our portfolio managers) vs an allocation effect. For sovereign bonds, the main contributors to the downward trend are France, Japan, Italy and Germany.

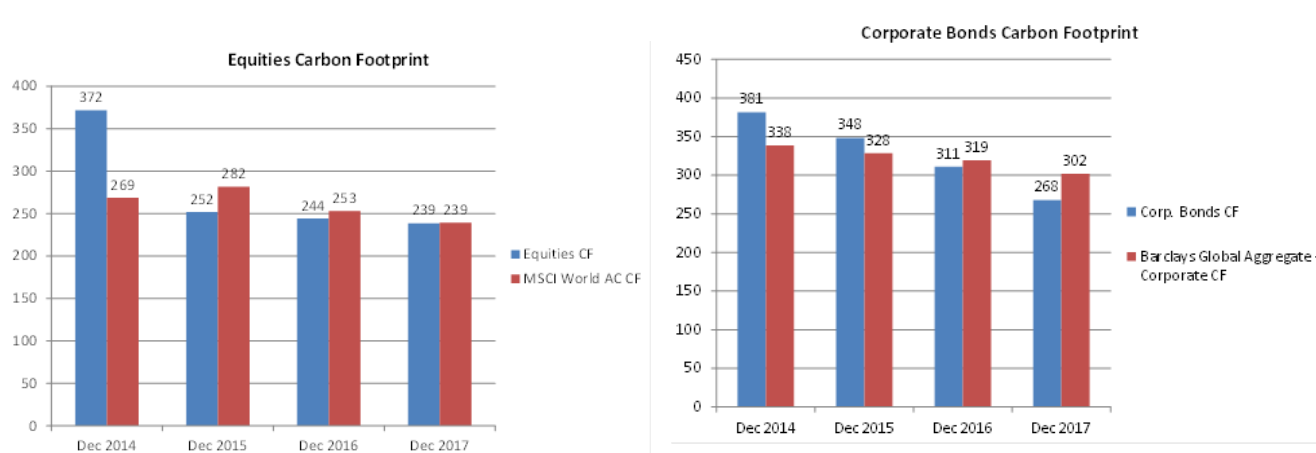
The influence of country-level climate policies

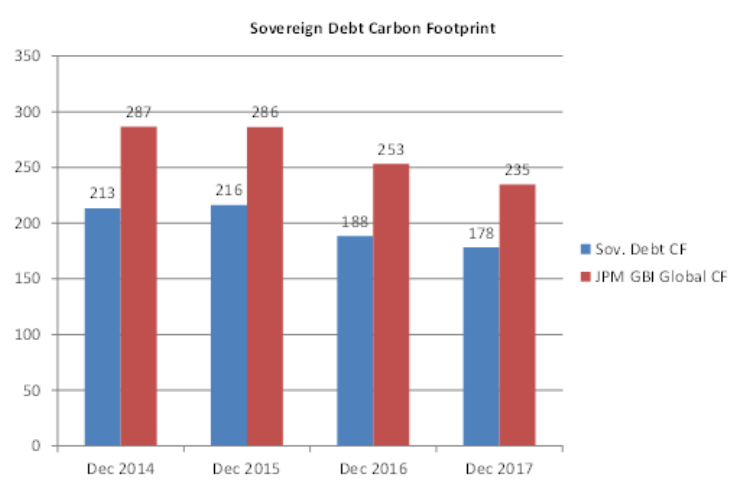
A closer focus on country-level climate policies can explain some of these trends, for example:

- France: the country has a relatively good record on carbon emissions overall, which is largely due to the strong share of nuclear energy in its energy mix. The energy-transition bill foresees a reduction of the nuclear-power generation share accompanied by an increase in renewables.
- Italy: Although incentives for solar-power deployment have diminished, significant hydroelectric-, wind- and solar-based power generation capacities have driven the country to a renewable-energy share of nearly 35%. The country’s performance with regard to CO₂ emissions per unit of GDP is above average, and strong incentives are provided for sustainable house construction and renovation.
- Belgium: Belgium records a weak performance in CO₂ and GHG emissions per capita and per GDP. This is related to the profile of the Belgian economy: Industry is the first carbon emitter of the country, with 28% of total GHG emissions. Climate policy implementation is influenced by the federal state system where responsibility for energy and climate policy are divided between the federal and the regional authorities (Flemish 2013-2020 climate policy plan, Climate decree in Wallonia and the Brussels Code for Air, Climate and Energy), with a clear focus on transport and buildings.
- Germany: The government admitted difficulties to attain its ambitious GHG reduction target of -40% by 2020 (vs 1990 levels). The phase-out from nuclear power (to be exited in 2022), decided after the Fukushima nuclear accident, results in an accrued use of coal for energy production. The “Energiewende” plans to increase renewable energy to 80% of electricity production by 2050.
- Spain: Energy consumption and GHG emissions have declined on the onset of the financial crisis, but the national target has been lower than the EU (-10% against -20%). The share of renewable energy is improving, but remains close to the mature countries’ average (14%). The Spanish government has rolled back economic incentives for renewable energy development since 2011.

Comparison with reference benchmarks

Sovereign Debt has been less carbon intensive in our holdings compared to benchmarks since the beginning of the reporting period, thanks among other factors to a strong exposure to French debt. In addition, both Equities and Corporate Bonds show a lower carbon intensive than benchmarks (since 2015 for Equities and 2016 for Corporate Bonds). This is reflected in the tables below.





Going forward

Carbon footprinting is an interesting tool, but its results can be challenging to interpret. As described in the trend analysis above, divestments can have an impact on our equities and corporate debt’s carbon intensity, and we *may* expect further positive contributions (ie. decreasing) related to our strengthened coal and oil sands divestment policy launched in December 2017 going forward.

However, data artefacts can have as much impact as actual divestments, and benchmarking is not straightforward. This work may be an interesting “carbon asset risk” proxy, but it also reveals that broad asset-class data do not provide useful insights given the heterogeneity of metrics across assets, while sub-sector breakdowns may inform shareholder engagement efforts. This is why more sophisticated work, such as the “Carbon Value at Risk” developed in this report, is required to better understand materiality of “energy transition” risks.

IMPACT FUND KPIS & CORRESPONDING UN SUSTAINABLE DEVELOPMENT GOALS



AXA was one of the first institutions to engage in impact investing, the strategy of which is to generate objectively measurable positive environmental and social impacts on top of financial returns. AXA committed €200 million to its first impact fund launched in 2013, and, in December 2016, allocated a further €150 million to Impact Fund 2, which invests in climate resilience. The AXA Impact Funds 1 & 2, in their purpose and objectives, are investment vehicles demonstrating the role AXA and its underlying entities are playing in contributing capital towards the UN Sustainable Development Goals (SDGs), a set of 17 goals addressing a range of global sustainable development challenges. We have conducted a preliminary review of the SDGs relative to the funds and their underlying businesses and can report that the AXA Impact Funds 1 and 2 are aligned with the objectives of the SDGs and provide capital to businesses that directly address 10 of the 17 SDGs.

The AXA Impact Funds have generated positive and measurable benefits over a range of impact themes in the priority areas of financial inclusion, education and health. Some of the notable impact contributions include:

- Investing in impactful businesses in over 70 countries and providing meaningful direct employment for over 50,000 beneficiaries
- Providing quality education at an accessible price to over 350,000 students with results that exceed expectations for beneficiary group;
- Expanding healthcare facilities in underserved regions by building 14 new hospitals offering quality and accessible care to beneficiaries.
- Making available financial inclusion in terms of micro loans and micro insurance to close to 100 million beneficiaries.
- Saving over 23.6 million metric tons of carbon dioxide emissions from the atmosphere

Examples of KPIs tracked for Impact Investment Fund I

Access to finance /insurance		Indicators
Underserved banking clients		68 342 027
Underserved insured clients		14 000 000
% female ^{*2}		81,47%
% rural ^{*2}		46,55%
Average individual loans €		3 579
Average SME loans €		27 019
Number of MFIs		190
% of the top ten of MFIs ^{*1}		58,01%
% number of SME Bank		31,05%

Education		Indicators
Number of students/pupils		311 025

Health		Indicators
Number of progressing countries		7
Number of mature countries	Number of new drugs/vaccines (global health)	
Number of school/academy ²	Lives saved to date (global health)	1200
% female	Lives improved to date (global health)	37000
	Estimated lives saved (global health)	300 000
	Estimated lives improved (global health)	90 575 000
	Number of beneficiaries of hospitals	80 816

AVOIDED EMISSIONS

AXA's 2017 divestments from coal and tar sands activities will result in 37,8 million metric tons of CO₂ removed from AXA's portfolio footprint. Similarly, AXA's new green investments targets result in 4 million tons of CO₂ saved with the following breakdown: infrastructure debt wind farms (1,8MT CO₂), infrastructure equity in renewable energy (0,8MT CO₂) and green bonds financing renewable energy projects (1,4MT CO₂).

INTERNAL ENVIRONMENTAL FOOTPRINT MANAGEMENT

AXA is conscious of the role it can play, as an insurer, investor and global corporation, in raising awareness about environmental protection amongst its stakeholders. AXA's environmental strategy includes both business drivers through our products and operational drivers, such as reducing our internal environmental footprint.

AXA has been implementing an environmental reporting process since 2002. AXA has a target to reduce its carbon emissions covering all greenhouse gas emissions "Scopes¹)" (as defined by the Greenhouse Gas Protocol):

- Scope 1: emissions from fuel consumed on AXA sites as well as by AXA-owned car fleet.
- Scope 2: emissions from purchased energy (essentially electricity consumed by AXA buildings).
- Scope 3: emissions from business travel and paper consumption.

AXA's target for the 2012-2020 period is to reduce its carbon emissions per Full-Time Employee (FTE) by 25%. This target is broken-down into the following targets:

- -35% power consumption (kwh/FTE) – Scopes 1&2;
- -15% business travel: vehicle fleet (km/FTE) – Scope 1;

- -5% business travel: air and train (km/FTE) – Scope 3;
- -45% office paper (kg/FTE) – Scope 3;
- -50% marketing and distribution paper consumption (kg/client) – Scope 3.

In addition, the Group has set two environmental targets that are unrelated to carbon emissions:

- -15% water consumption;
- 95% of paper must originate from recycled or sustainable sources.
- renewable energy sourcing target (see below).

RENEWABLE ELECTRICITY SOURCING TARGET



By joining the “RE100” initiative (Renewable Energy 100%) in 2017, AXA is committed to buy 100% of its electricity from renewable energy sources by 2025, with an interim target of 70% by 2020. This target covers both AXA’s office buildings and AXA owned data-centres covered under the environmental reporting perimeter. In 2017, 115 sites bought electricity from renewable energy sources, representing about 53% of total

electricity consumption for AXA buildings and 33 % for our data centres.

Please refer to 2017 AXA Annual Report – Chapter 7.3 for a more granular analysis:

<https://www.AXA.com/en/newsroom/publications>

SRI RATINGS

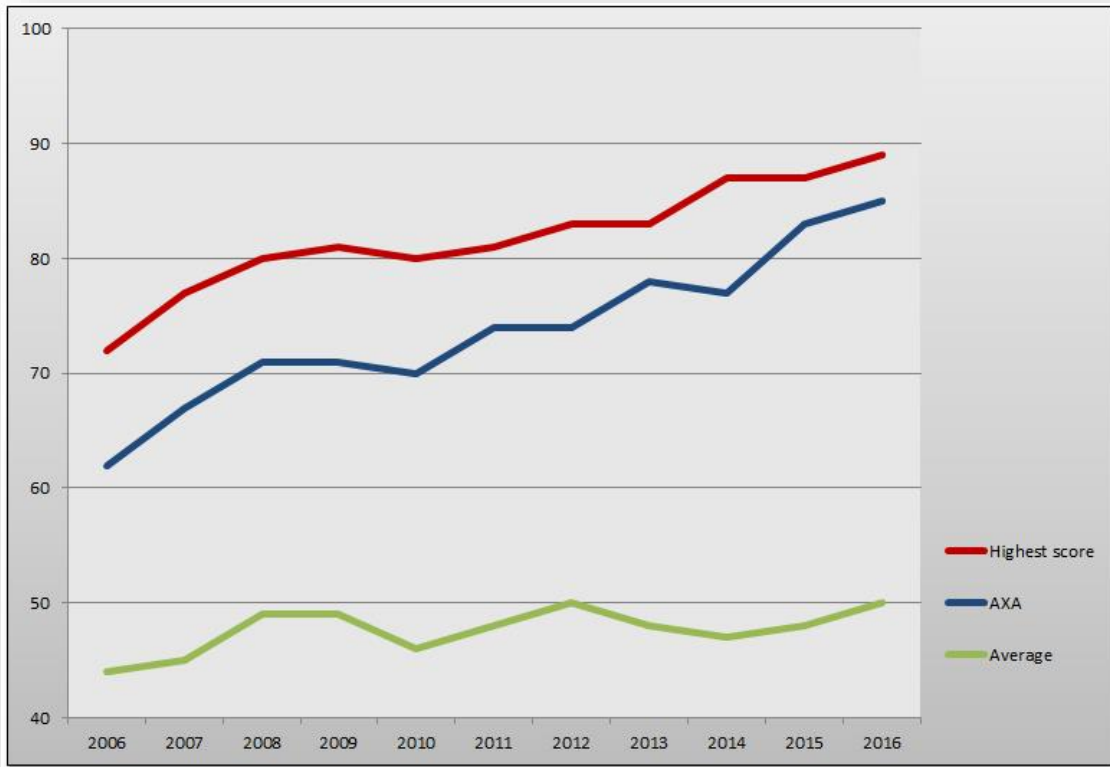
The Group's environmental, social, and governance (ESG) performance is evaluated by various organizations, including Socially Responsible Investment (SRI) rating agencies. The Group is ranked in the top tier within the main indices and rankings such as RobecoSAM (DJSI), FTSE4GOOD and Euronext Vigeo. The full details of AXA’s rankings are available on axa.com. According to our research, these high ratings translate into a significant presence of the AXA share in SRI funds compared to our peers.

MEMBER OF

**Dow Jones
Sustainability Indices**

In Collaboration with RobecoSAM 

Of note, one of these external ratings (the Dow Jones Sustainability Index, performed by RobecoSAM) is integrated into AXA’s compensation policy: the DJSI “Percentile Ranking” is used to determine 10% of the attribution of the Long-Term Performance Shares, distributed to approximately 7000 executives every year. Our DJSI score trend is illustrated below.



AXA ENTITY SUSTAINABILITY INDEX

Inspired by the assessment systems used by the specialized extra-financial rating agencies, AXA developed its own model to assess the sustainability performance of its entities, which is adapted to take into account the specific features of each entity. More than 100 CR factors are analysed, including governance, risk management, compliance, customer relations management, environmental impact management, “green products,” microinsurance, human capital management, community involvement, philanthropy, etc. Each factor is weighted and scored according to the entity’s performance, resulting in an aggregate global score out of 100. Each entity’s progress in corporate responsibility maturity is measured each year. This is a guide to CR strategy development used by the subsidiaries to identify the measures needed to roll out their own local CR strategies.

AXA Group, April 2018