



2021 Climate report: the decisive decade



JUNE 2021

In line with France's Article 173 and
recommendations from the Task Force
on Climate-related Financial Disclosures

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Editorial

Net-Zero must remain our horizon



Alban de Mailly Nesle
AXA Group Chief Risk
and Investment Officer

What are the new issues which we highlight in our 2021 Climate report? We deepen our analysis of the “investment temperature” concept and how it relates to the real economy, but we also explain why new alliances must be launched to tackle collective concerns.

Metrics matter

AXA promotes “portfolio alignment” with the goals of the Paris Agreement based on the concept of “investment temperature”. This is not a KPI technicality, it is a key issue that deserves attention: how can we identify transition models and evaluate their impact on climate change? If we use carbon footprinting KPIs, we know where present day emissions come from, but we know almost nothing about where they are going. For this we need forward-looking metrics. We need the movie more than the still image to understand portfolio alignment. But how do we measure this? We believe the best approach so far is temperature alignment metrics. Temperature metrics provide a forward-looking understanding of the potential impacts of companies and sectors on the dynamics of climate change. They can be used to set dynamic climate targets and develop related strategies, thereby accelerating “real-world impact” in terms of climate mitigation. It will be important, also, to analyze how these relate to metrics derived from the Taxonomy Regulation.

In 2021, AXA used improved “Warming Potential” modeling: it now uses both self-reported and estimated emissions data, more carbon emissions scopes have been added in the calculation of carbon intensities, and carbon emissions reduction targets are now included in the temperature calculation. These methodology changes have impacted many corporate “temperatures” upwards. Similarly, the sovereign debt “temperature” methodology improved with updated databases, as well as now factors the latest country-level commitments towards COP26, lowering most temperature curves.

We do not operate in a vacuum

AXA acted early and decisively on climate change, with tangible results in terms of

investments and underwriting efforts. But we cannot fully “align” in a “misaligned” world. Should our 2020 investments be an accurate representation of the world, this years’ report shows that we are heading towards a 2.7°C future. This figure shows the road ahead: our success in improving our “temperature” will increasingly depend on shifts that we can encourage but that we do not control. This is also why, as framed by the Net-Zero Asset Owner Alliance we undertake our 1.5°C commitment in the expectation that governments will implement their own commitments to ensure the objectives of the Paris Agreement are met. While all sectors and companies have a responsibility to evolve, finance and insurance is a key enabler provided they can operate within a clear long-term framework.

On the ESG side, in an environment where the EU is rolling out ambitious new requirements, we are glad to announce that as at the date hereof 90% of AXA IM’s eligible funds fall within the scope of Articles 8 or 9 of the Sustainable Finance Disclosure Regulation (SFDR), the most demanding and stringent of the EU sustainable disclosure requirements for investment funds.

Insurance is our business

We also highlight more coalition-building progress with the project to launch a Net-Zero Insurance Alliance ahead of COP26. It is nothing short of a revolution in the way our peers and us commit to do business in the future, by taking into account the climate roadmaps of clients at the very heart of our business processes.

For the first time, we also showcase the results of our 2021 “pilot” stress testing exercise undertaken within a framework developed by *Banque de France*⁽¹⁾. These reveal how important it is to choose climate scenarios and their variables wisely to avoid

both excessive optimism and pessimism. We have significantly expanded our analysis of climate-related Property insurance impacts, better explaining the relationship between the three main drivers of insurance risk: physical hazard, asset exposure, and vulnerability, as well as researched the relatively virgin territory of climate-related litigation risks.

Every year counts

We are entering into a decisive decade of action with a multiplication of climate pledges and a strong business and political momentum. These goals remain important provided they are supported by credible transition scenarios. As we reflect on the meaning of the various net-zero pledges and carbon emissions reductions from governments and business leaders, one may wonder if they are realistic. For example, considering that the EU has committed to achieve -55% CO2 emissions reduction between 1990 and 2030, but has achieved only about -20% between 1990 and 2020, despite a significant de-industrialization of Eastern Europe in the 1990s, this leaves a lot more to achieve in a lot less time.

Yet this is what climate science is telling us to do if we want to avoid catastrophic and irreversible change, and this what climate neutrality commitments are made of. They are ambitious, and they require the full mobilization of all players, because the window for action is closing fast and there is no plan B. It is an industrial revolution that will be demanding and that can no longer be delayed. Every year counts. But it can also become a formidable catalyst for technological innovation, social justice and geopolitical appeasement. Our mindset must evolve faster than climate change, and our response must be in line with the scale of the risks ahead. AXA takes on the challenge.

(1) <https://acpr.banque-france.fr/les-principaux-resultats-de-lexercice-pilote-climatique-2020>

Cross interview: Denis Duverne and Thomas Buberl looking back and forging ahead



Denis Duverne
Chairman of the
board of Directors



Thomas Buberl
Chief Executive Officer

On the occasion of the publication of AXA's sixth Climate/TCFD report, AXA Group CEO Thomas Buberl and Chairman Denis Duverne exchange views on six years of climate action, as well as the challenges ahead.

How do you reflect on the past year, strained by the COVID-19 crisis?

Thomas Buberl – In 2020 we faced a crisis that was unprecedented in form, scale and impacts. The ongoing consequences on society and business will leave a mark for many years if not decades. AXA has emerged from the crisis robust and confident of the choices that have guided us since 2016 and served as the basis for our new Driving Progress 2023 strategic plan. This plan reflects AXA's purpose defined in 2020, "Act for human progress by protecting what matters". 2020 also marked the end of a five-year strategic cycle that enabled a deep transformation of our profile as we switched away from financial risks to technical risks and extended our focus on health and digital innovation. And our climate efforts are fully comforted since we have now placed "Climate Leadership" as one of our 5 strategic pillars for the coming years.

How did AXA's climate journey begin? What pushed you into action?

Denis Duverne – We kicked off our climate journey with the world's first large-scale divestment from coal, in early 2015. This decision generated a heated debate in financial circles. Even internally, it is fair to say that it required quite a lot of persuading. However, we reached a common conclusion that this was the right thing to do.

As the world was gearing up for the COP21, we felt a proactive signal from us may go a long way to support the right framework for action. It was crucial that we, collectively, avoided repeating the failure of the 2009 Copenhagen COP15, where governments failed to set a clear direction of travel, and private players were left without a roadmap.

Furthermore, we were convinced that it was a sound business decision. Back then, the concept of "stranded assets" was nascent. But more and more people were dawning on that climate change had the potential to severely damage corporate valuations, to the point that investors might suffer. We realized that coal would be amongst the first industries to be hit. Indeed securing the +1,5°C objective implied that only 1/6th of existing fossil fuel reserves should be burnt.

Our decision provided legitimacy to an attitude that until then appeared to be reserved to smaller and more "activist" investors. A few months later several peers followed in our footsteps. During COP21, several key policymakers referred to our decision to invite business leaders to find their own "climate milestone" and stretch themselves towards climate action, generating a virtuous public-private race to the top. The role of investors was enshrined in the Paris Agreement in relation to a quantifiable target.

TB – During COP21, we also declared that runaway climate change may create risks so large that conventional market mechanisms may no longer be suitable. Why is this important? Because we are first and foremost an insurer, and climate change is a concern on both the asset and liability side. This is why, only two years later we decided to extend this approach to our insurance business by restricting underwriting for coal-related businesses. Again, this was a pioneering move then, but it has become rather mainstream today.

When do restrictions become the only option? Does this not clash with your fiduciary duty?

TB – Divestment is a powerful but blunt weapon of last resort. We do this when all else failed. Can we really expect a company that still today, in 2021, has a majority of its business related to coal, or is one of the largest producers of coal worldwide, to be more solution than problem in a few years? Should we continue investing in a company that fails to produce a meaningful climate strategy after several years of shareholder engagement? This would not be consistent with our mission as an insurer, that is to say protecting our customers. This has not raised fiduciary duty concerns because it is congruent with long term business perspectives: are companies that fail to adapt their business with the need to transition to low-carbon models going to be sensible investments in the future? With the fast and comprehensive pace of change we are seeing, again, we think not. This is not the economy we want to support, these are not the investments we want to offer to our clients, this is not sound business and this is certainly not the world we want to entrust future generations with.

Divesting, banning: is AXA all stick and no carrot?

TB – No. Our initial decision was accompanied by our first green investments target – a divest-invest strategy/carrot-stick strategy – which we have ramped up several times since. We now aim to achieve €25bn in green investments by 2023, starting from a baseline of €1bn in 2015.

Our teams are also working on a "green business" strategy, and on a daily basis our underwriting teams support clients that need to transition towards more sustainable business models. We are much more carrot than stick! And we also exert discernment when looking in between green and brown, because the transition is not a binary affair.

Did you encounter dilemmas and challenges along the way?

DD – We all like to think that green business means good business, but it is not always the case. For example, many green bonds are issued by industrial players that need capital to support their transition but bear a high carbon footprint today. How we reconcile long-term transition needs and shorter-term carbon targets? Similarly, some of the best ESG players in our portfolios are industrial corporates that have developed advanced sustainability strategies while still being large carbon emitters. Do we favor ESG or climate when they diverge?

Perhaps even more tricky is the fact that while a coal plant may well present an investment risk, it is often a perfectly profitable asset to underwrite from a Property insurance perspective, with a good claims history – unlike offshore windfarms. We simply cannot replicate the investment business case for climate action into our insurance business. In a way, "stranded assets" does not apply well to underwriting. We must work on a longer-term, more indirect business case, and inject a healthy dose of vision, convictions and values as well.

Another complex question – which goes well beyond our industry – is how to combine scoring under the E, S and G components, or how to articulate climate change and biodiversity. Is a large dam flooding a valley and destroying biodiversity but producing decades of low-carbon energy a good thing? It is a wide-reaching decision that we cannot take on our own. However, we believe that we need to have a fact-based decision about this, for example via the Taxonomy Regulation. This is why we support the creation of a Task Force on Nature-related Financial Disclosures.



Are companies that fail to adapt their business to low-carbon models sensible investments? We think not. This is not the economy we support, these are not the investments we want to offer to our clients, and this is certainly not the world we want to entrust to future generations.



We all like to think that green business means good business, but it is not always the case, and dilemmas abound. Green bonds are sometimes carbon intensive, the best ESG players may also be large carbon emitters, climate and biodiversity objectives may diverge, a coal plant may be a profitable insurance asset. But vision, convictions and values matter as well.

Amongst the key decisions that fall into the remit of political decision-makers is the question of the future energy mix. It is now clear for everyone that we need to switch as much energy consumption to green electricity as possible. This will require major investments. The International Energy Agency recently said investments in the energy sector should reach \$5tn a year by 2030 to give us a chance to deliver the Paris objective. As institutional investors we are interested in financing the future infrastructures. But this requires clarity on which ones are needed – and unfortunately, we do not have sufficient visibility at present. The protracted debate around how nuclear, which produces low carbon energy and hazardous waste, and gas, which is carbon-intensive should be addressed under the Taxonomy Regulation is a case in a point. Every choice has upsides and downsides - is it even possible to “do no significant harm” as the Taxonomy Regulation is trying to achieve?

TB – We also face challenges. For example, unlike other industries where market appetite for cleaner products and services runs strong, few retail clients knock on our doors asking for climate-friendly or sustainable insurance or savings products. For the time being, most do not make that connection. Low demand creates low incentives to create such offers, and more generally hampers sustainable finance in the longer run. Here too there is an element of conviction.

You have called for the creation of a Net-Zero Insurance Alliance last year. What does it mean? Why is it needed? What has happened since?

DD – While political leadership has been lacking at times on climate issues in recent years, I believe public-private initiatives have made a strong difference. The best example is the Task Force on Climate-related Financial Disclosures. As a group of private actors convened by the Financial Stability Board, it quickly delivered a reporting standard which is now in the process of becoming enshrined into law in several jurisdictions. I believe the success of the TCFD can be traced back to the fact that its prescriptions were reflecting private-sector concerns from the outset and by design.

In the wake of this great project, a series of initiatives have been launched, with the objective of coming to a broad-based consensus on what a green financial sector would look like. First amongst them was the Net-Zero Asset Owner Alliance, whose role is to design metrics to ensure investment portfolios are aligned with the Paris agreement. It helps us all understand what it takes to be a climate neutral investor. Symmetrically,

we needed something similar for our insurance portfolio. As this did not exist yet AXA took the lead in calling for its creation.

Again, I am confident that metrics and tools that originate from the private sector can become standards very quickly. Our hope is that this new NZIA can deliver tools that will set the new reference for climate-responsible insurance portfolios.

TB – Since we made that call, we gathered a group of highly committed peers, housed within the UN Principles for Sustainable Insurance, to start defining the form and substance of this future alliance. I am proud that AXA is, once again, a first-mover. We are expected to lead on climate, not to follow – this is the meaning of our “Climate Leadership” commitment - and we view this responsibility as an opportunity to embark others. This requires us to regularly innovate and ramp up our ambitions. And thanks to AXA’s hands-on experience and legitimate voice in the climate debate, it was agreed that Renaud Guidée, our Chief Risk Officer, will preside this alliance upon launch.

The climate crisis is not going away. What do you think should come next?

TB – The climate crisis must be treated like a crisis. The recently published International Energy Agency 1.5°C Report shows that much change must still be achieved to reach climate neutrality by 2050, with several transformations to be accelerated in parallel and multiple mutual dependencies

The report clearly shows how encompassing this energy revolution has to be and how it will require in-depth change in consumer habits, massive public and private investments and an acceleration of technology innovation. The transition has to accelerate today, with significant progress required already over the coming decade.

Many governments have committed to steep curbing of emissions. How confident are you that these commitments will be upheld?

DD – I believe we should be carefully optimistic.

There are a lot of worrying facts. The impacts of climate change predicted by the IPCC since 1990 have materialized, and indeed earlier and stronger than expected. Also, while the COVID-induced lockdowns have caused a substantial drop in carbon emissions, we are seeing emissions reverting to pre-pandemic levels rather quickly. Economic growth remains closely correlated with carbon emissions.

But the silver lining is that there is now a consensus on the fact that we cannot afford to lose any more time. I also see a positive political momentum across the globe. During the pandemic, China announced its objective to become net-zero by 2060, Japan by 2050, the U.S. joined the Paris agreement again. The EU recovery package incorporates strong climate criteria – 30% of the sums should be directed to climate sustainability. Things are moving in the right direction, but the question remains: are they moving fast enough? I want AXA to keep up its efforts in this direction.

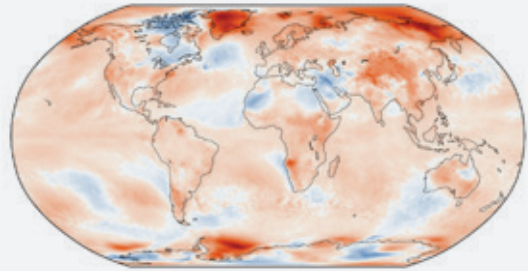
One area of growing importance is nature and biodiversity risks. AXA has been a vocal and early advocate about it. How does this relate to AXA?

TB – Nature is essential to human activity and to our very survival, from food and shelter to medicines’ active ingredients. Diverse ecosystems are key to tackling climate change, as flourishing forests and well-preserved oceans absorb carbon emissions. Conversely, climate change accelerates biodiversity loss. The contributions of each species in our economies are also far-reaching: nature truly “works” for us. And because biodiversity loss endangers those “ecosystemic services”, it threatens both society and businesses that depend on them, and in turn investors and insurers that rely on a well-functioning economy. In 2018 we committed to act on biodiversity loss, and in 2019, with the inaugural report “Into the Wild”, where we explored the biodiversity crisis as a financial risk together with the WWF.

Our biodiversity strategy features several developments but supporting the creation of a Task Force on Nature-related Financial Disclosures is one of its key pillars. We are actively working in this direction and hope to see progress in 2021. Once created, the main task of the TNFD will be to construct a framework enabling financial institutions to identify economic activities that have a direct and indirect material impact on biodiversity. The TNFD will hopefully help provide incentives for a reduction of adverse impacts on nature. Our obvious model is the TCFD, and we bring our TCFD experience to the table – both as a TCFD member and a TCFD practitioner.

DD – Just like climate change with COP26, 2021 is also a key year for biodiversity, with COP15 next fall. A “science-based” Kunming Agreement in COP15, carrying the same transformative influence for governments and businesses worldwide that the Paris Agreement imprinted 5 years ago, would generate the same level of political and business leadership for the preservation of biodiversity that has been witnessed for climate change.

Executive Summary



€750bn

the European Commission's post-COVID "rescue fund"

AXA promotes a recovery which is aligned with the Paris Agreement, by helping to mobilize private sector capital to finance the EU Green Deal and proposing to leverage new forward-looking climate metrics to assess the climate impacts of individual companies and sectors. "Back to better"!

AXA's new climate strategy aligns our business with the Paris Agreement

1.5°C

investment "warming potential" target by 2050

€25bn

green investments by 2023

€200m

transition bonds

0%

coal by 2040

Integrating sustainability factors

85%

of the Group's Credit Portfolio covered by an internal credit rating

8,000+

companies covered by AXA's ESG research

93% corporate equities

95% corporate debt

99% sovereign debt

84% Real Estate

covered by ESG scoring

The Paris Agreement is our roadmap

"Well below 2°C"

and "pursue best efforts to limit warming to 1.5°C by 2100": the goals of the Paris Agreement.

3.2°C

expected temperature increase by 2100 if COP21 national pledges are implemented

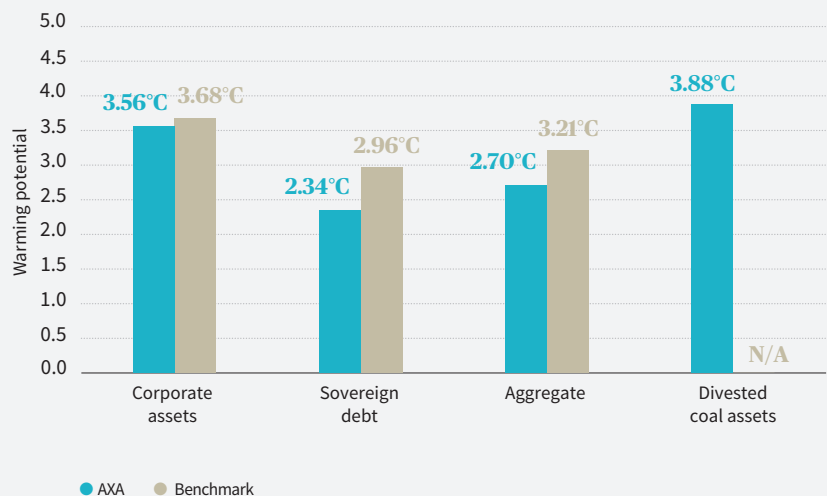
4.8°C

expected temperature increase if inaction prevails ("Business As Usual" scenarios)

-45%

CO₂ emissions 2010-2030 needed to achieve 1.5°C by 2100

Aligning investments with the Paris Agreement: the "warming potential" approach - 2020



Net-Zero Asset Owner Alliance

37

institutional investors representing almost

US\$5.7 trillion

in assets under management collectively committed to achieved climate neutrality by 2050

How climate change may impact our investments

-7.4%

Portfolio Climate Value at Risk (under a 1.5°C scenario)

Greening our investments

€16bn

AXA's 2020 total green investments

€25bn

green investments target by 2023

-36%

AXA's 2014-2020 investment carbon footprint

18%

AXA's Green share combining equities corporate debt and sovereign debt

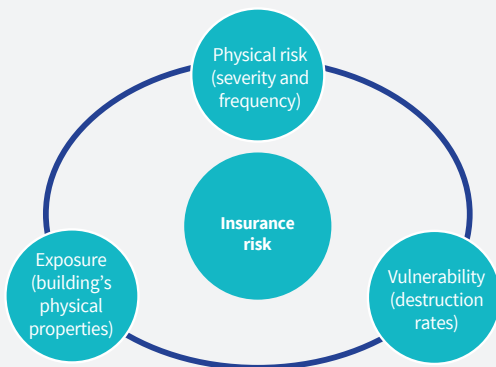
€700m

committed to Impact investing since 2013

€200m

Transition bonds

Physical risks on AXA's "Real Assets"



€5.8m

our Real Assets Annual Average Loss to Floods

€2m

AXA's Real Assets Annual Average Loss to Windstorms

Investment and business exclusions

€7.5bn

total assets impacted by divestment policies

0%

coal in our business by 2030 (EU/OECD) and 2040 (rest of the world)

Direct environmental footprint

-64%

AXA's decrease in absolute CO₂ emissions between 2012 and 2020

-20%

CO₂ emissions reduction target between 2019 and 2025

Voting & engagement 2020

6,247

General Meetings voted

56%

meetings where AXA did not fully support management proposals

319

issuers engaged

Products & services

100%

SRI funds in AXA's collectives savings range

6.5m

"Assurance Citoyenne" and "Épargne Citoyenne" contracts sold since 2015

55m

Indian farmers protected via AXA's parametric solutions

Our sustainability performance

99th

percentile ranking according to the DJSI

#1/51

AXA's ranking in our industry according to Vigeo



Report structure

A report at the crossroads of investments & insurance, mandatory and voluntary frameworks, and ESG & Climate

Since 2016 (see our past Climate Reports on www.axa.com), AXA's climate reports describe AXA's responsible investment and insurance initiatives in line with two different but partly overlapping and complementary frameworks:

- › the *mandatory* disclosure requirements related to France's "Article 173"⁽¹⁾, which considers Environmental, as well as Social and Governance (ESG) issues;
- › the *voluntary* disclosure recommendations of the Task Force on Climate-related Financial Disclosures (TCFD⁽²⁾), which focus exclusively on Climate-related factors. In preparing this report, AXA has taken

into account the TCFD's "Guidance for all sectors" and "supplemental guidance" for asset owners and asset managers. Note: the TCFD framework will evolve by end 2021.

This report follows the TCFD structure (Governance, Strategy, Risk Management, Metrics & Targets, see diagram below). However, for enhanced readability, we chose to combine the "Strategy" and "Metrics & Targets" sections. This work is also described in AXA's 2020 Universal Registration Document⁽³⁾ published in March 2021.



Core Elements of Recommended Climate-Related Financial Disclosures



Source: www.fsb-tcfd.org

› Governance

The organization's governance around climate-related risks and opportunities

› Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning

› Risk Management

The processes used by the organization to identify, assess and manage climate-related risks

› Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Significant changes between this report and our 2020 Climate Report include the following:

- › a focus on Net-Zero coalition-building initiatives and related targets;
- › overview of the *Autorité de Contrôle Prudentiel et de Résolution* ("ACPR" – the French banking and insurance supervisory authority) Climate Stress Testing "pilot exercise";

- › more detailed analysis of Property-related (re)insurance climate risks;
- › deeper investigation of biodiversity-related commitments and initiatives;
- › updated methodologies leading to re-baselining of some key metrics;
- › insights into Climate-related litigation risks.

Statutory audit

This report has been reviewed by AXA's external auditors (PwC). This is a voluntary initiative. PwC's limited assurance report can be found at the end of this report. Its findings confirm the robustness of our processes and underlying assumptions.

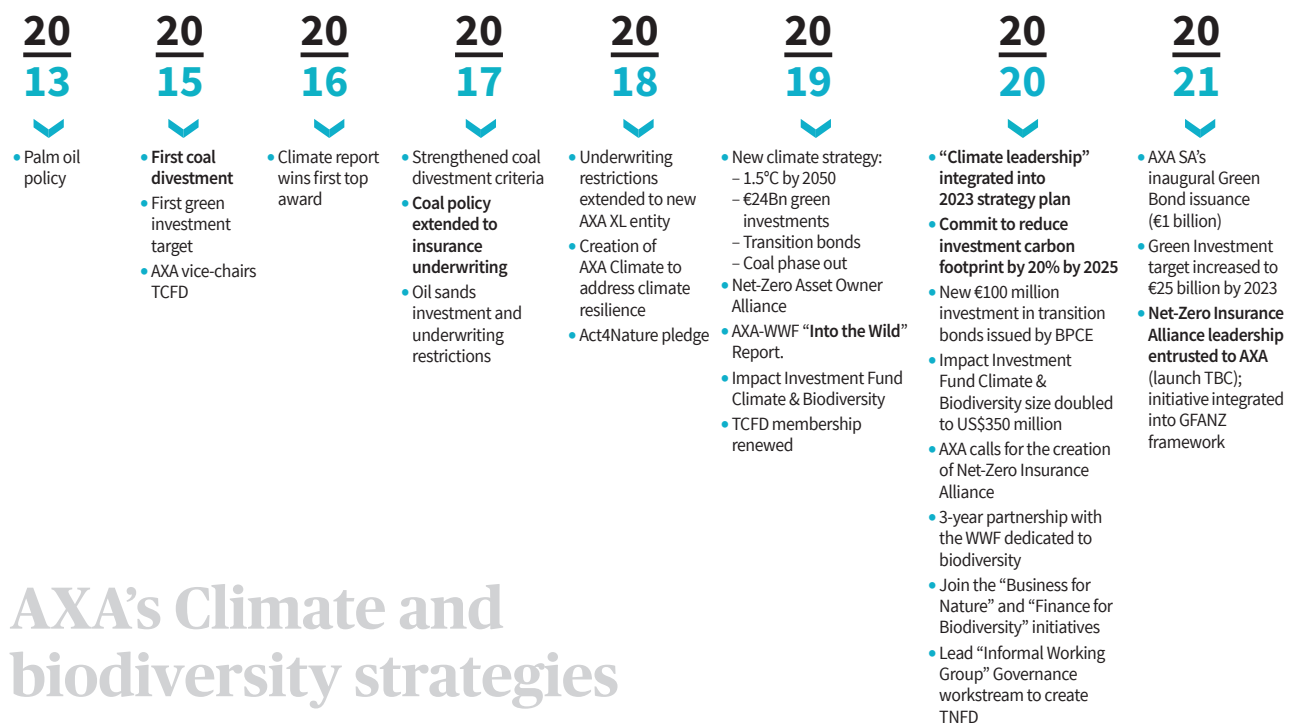
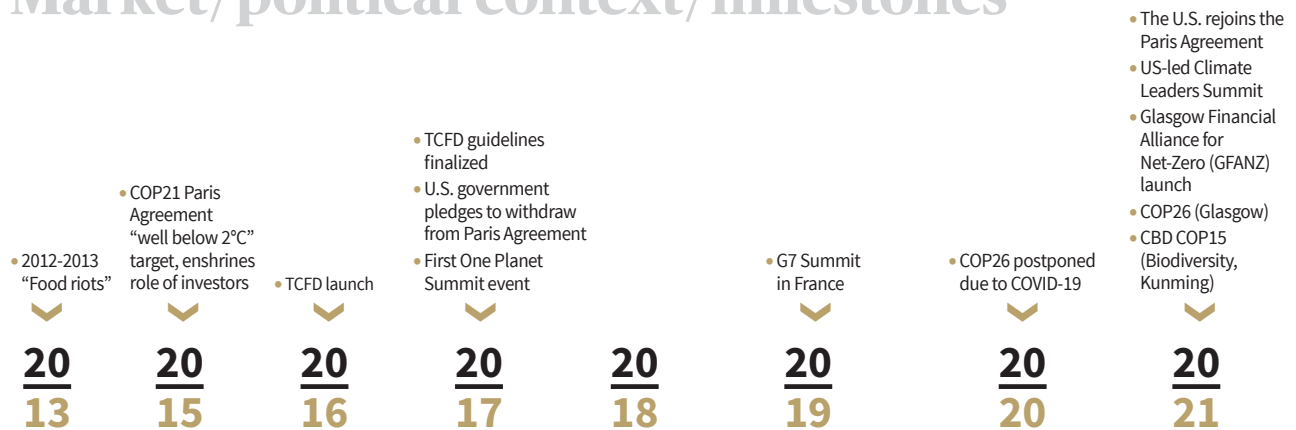
(1) Article L. 533-22-1 of the French Monetary and Financial Code (Code monétaire et financier, as amended by Article 173 (VI) of Law No. 2015-992 of August 17, 2015 relating to Energy Transition for Green Growth, and Article D. 533-16-1 of the French Monetary and Financial Code, which are generally referred to as "Article 173". This report not intended to comply with, nor should it be construed as addressing, any of the requirements set forth in Article 29 of Law No. 2019-1147 of November 8, 2019 regarding Energy and Climate or any of its implementing measures.

(2) www.fsb-tcfd.org

(3) AXA's 2020 "Universal Registration Document" for the year ended December 31, 2020 ("Annual Report").

1. AXA's key climate & biodiversity commitments put in context

Market/political context/milestones



AXA's Climate and biodiversity strategies

Market/political context/milestones



• Net-Zero macro-targets: carbon sinks must compensate remaining carbon emissions



Operational carbon footprint

Green Investments

Coal phase out EU / OECD

Coal phase out rest of the world

Green business (TBC)

Investment carbon footprint

Underwriting carbon footprint (Net-Zero Insurance Alliance)

Investment Warming Potential



AXA's Climate and biodiversity strategies

2. The science and the politics of climate change



2.1 A robust scientific consensus

Science is clear: the Intergovernmental Panel on Climate Change (IPCC) Fifth “Assessment Report”⁽¹⁾ presented evidence from the global scientific community that the Earth is warming at an unprecedented rate and that anthropogenic Greenhouse Gas (GHG) emissions are the main cause, in particular carbon dioxide. The likely impacts of climate change are well documented, and indeed some of the effects that had been predicted by science in the past are now occurring, for example: loss of sea ice, accelerated sea level rise and longer more intense heat waves. The IPCC predicts that effects will include further melting ice and rising seas, resulting in flooding and erosion of coastal and low-lying

areas. Some developing countries will be most affected, as local populations depend significantly on their natural environment and have less resources to cope with a degraded climate. Heat-related deaths and water-borne illnesses may increase. Many plants and terrestrial, freshwater and marine species are struggling to cope with a fast-changing climate and face an increased risk of extinction, compounding the biodiversity crisis. Finally, local economies may suffer from increased damage to property and infrastructure, and certain industries which rely most on environmental factors, such as agriculture, forestry, energy and tourism, may face decreasing revenues.

2.2 The Paris Agreement is the overarching framework and roadmap for climate action

In December 2015, during COP21, 195 countries gathered in Paris to negotiate and adopt the Paris Agreement⁽²⁾. Countries that ratified the agreement legally bound themselves to collectively hold warming to “well below 2°C compared to pre-industrial levels” (prior to the industrial revolution in the mid-1700s, when the global average amount of carbon dioxide was about 280 ppm) and pursue best efforts to limit warming to 1.5°C by 2100. These thresholds were chosen based on the “level of destruction” they entail. Indeed, the risks associated with warming are substantially lower at 1.5°C than 2°C⁽¹⁾. The Paris Agreement also highlighted the role of investors (see box) in response to the threat of climate change.

Context Box

✓ COP21 Paris Agreement article 2: the key role of investors



“This Agreement (...) aims to strengthen the global response to the threat of climate change (...) by: (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels (...); (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development (...); and (c) **Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.**”

As the Paris Agreement binds Governments to collectively hold warming below safe levels by reducing greenhouse gas emissions within specific thresholds and timeframes, it requires rapid and significant emissions reductions. This low carbon transition target will have significant consequences for the

“real economy”, and in turn for investors and insurers. These can choose to develop a long-term risks & opportunities framework derived from the Paris Agreement roadmap. This is the backdrop for AXA’s climate action.

(1) <https://www.ipcc.ch/report/ar5/syr/>

(2) https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en

2.3 2021: the last Mile to Glasgow and Kunming



COP26 and Private finance

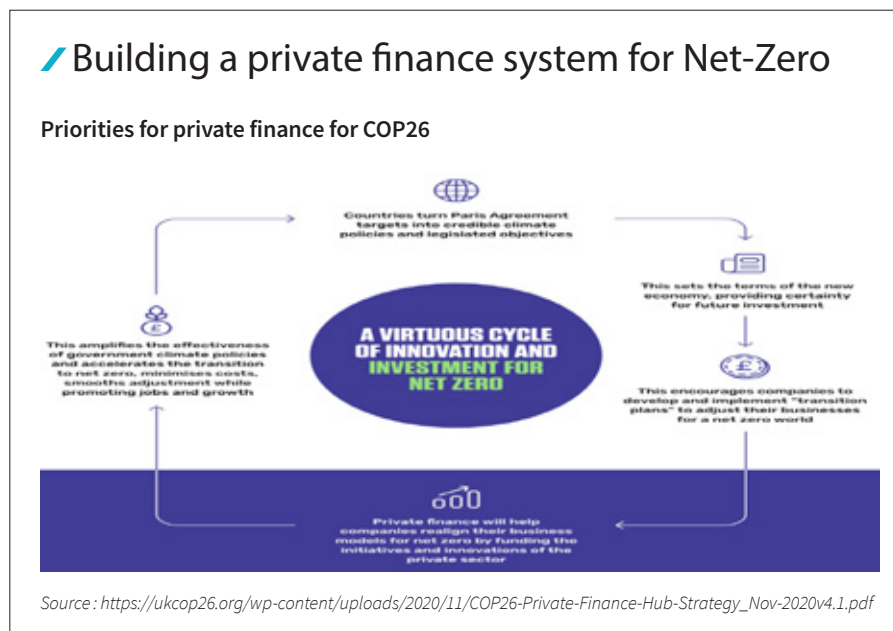
The COP21 Paris Agreement commits all parties to the agreement to develop new and ramped up **Nationally Determined Contributions** (NDCs⁽¹⁾) every five years. This is why COP26 is a key COP meeting during which governments are expected to lead climate action with strengthened commitments, possibly in the form of a “Glasgow Agreement”. More importantly, 46 countries submitted new NDCs including the UK, Australia, Japan, Mexico and Switzerland (however, not all NDCs are simple to compare, using different assumptions and starting points, and none target 1.5°C). The EU also ramped up its regional commitment to -55% by 2030 compared to 1990. EU member countries’ NDCs are placed under the regional NDC. In September 2020, China committed to achieve climate neutrality by 2060 (although this is not a formal NDC yet). Shortly after rejoining the Paris Agreement, in April 2021, during the “Climate Leaders Summit”, the Biden administration announced an updated NDC, establishing a -50-52% CO₂ emissions reduction 2005-2030, setting the course for a “net-zero carbon economy” by 2050.

After several years of pushback, the U.S. is using this announcement to leverage further ambition by the world’s major economies. A re-baselined comparison of NDCs can be found at: <https://rhg.com/research/climate-ambition-us-ndc>.

Private finance is expected to play an important role in a successful transition to a net-zero carbon economy, as unlocking the private financial flows will be vital, in addition to supporting resilience efforts through risk mutualization. In particular, the COP26 ‘Private Finance Agenda’⁽²⁾ and related ‘Hub’, launched in 2020, is designed to “mobilize ambitious action from across the financial system needed to help achieve the 1.5°C goal of the Paris Agreement. This will include building the frameworks for financial reporting, risk management and returns to bring the impacts of climate change to the mainstream of private financial decision making and to support the transition to a net-zero economy.” The objective of the work for COP26 is “to ensure that every professional financial decision takes climate

change into account”⁽³⁾. In order to do so, four areas of focus have been outlined:

- › “reporting”: improving the quantity and quality of climate-related disclosure by implementing a common framework built on the TCFD;
- › “risk”: ensuring firms and investors can measure and manage climate-related risks in a transition to a “net-zero” world, notably *via* enhanced climate stress-testing;
- › “returns”: helping both firms and investors to identify opportunities in the transition to a low carbon economy. This includes considering if the “Warming Potential” (WP), or any other metric, is the best way to measure the potential opportunities in the transition;
- › mobilization: ensuring private finance addresses the needs of emerging economies as well.



-55%

EU 1990-2030 carbon emissions reduction target

-52%

New US 2005-2030 carbon emissions reduction target

(1) Main NDC registry: <https://www4.unfccc.int/sites/NDCStaging/Pages/Home.aspx>

(2) The Private Finance work is led by Mark Carney as “Finance Adviser” for COP26. In his previous role as Chair of the Financial Stability Board and Governor of the Bank of England, he warned against the potentially systemic nature of climate-related financial risks and helped launch the TCFD in 2015. Since 2019, he is also UN Special Envoy on Climate, replacing Michael Bloomberg, TCFD Founder, in this role.

(3) <https://www.bankofengland.co.uk/-/media/boe/files/speech/2020/the-road-to-glasgow-speech-by-mark-carney.pdf?la=en&hash=DCA8689207770DCBBB179CBADBE3296F7982FDF5>

Context Box

Glasg​ow Financial Alliance for Net-Zero (GFANZ)



During President Biden’s Climate Summit, Mark Carney (the UK Prime Minister’s Finance Advisor for COP26 and UN Special Envoy for Climate Action and Finance), in partnership with the UNFCCC Climate Action Champions and the UN “Race to Zero” campaign, and the COP26 Presidency launched a global alliance bringing together net-zero finance initiatives into one initiative: the Glasgow Financial Alliance for Net-Zero (GFANZ). GFANZ will provide a coordination forum for finance institutions committed to climate neutrality. All initiatives in GFANZ require signatories to set science-based interim and long-term goals to reach net-zero no later than 2050, supplemented by short-term targets and action plans. The Net-Zero Asset Owner Alliance and upcoming Net-Zero Insurance Alliance (see following section) are gathered under this initiative.

AXA also signed the 2021 “Global Investor Statement to Governments on the Climate Crisis” calling on governments to act in 2021 to strengthen their Nationally Determined Contributions for 2030 before COP26 in November 2021, commit to a domestic mid-century, net-zero emissions target and outline a pathway with ambitious interim targets including clear decarbonization roadmaps for each carbon-intensive sector, as well as commit to implementing mandatory climate risk disclosure requirements aligned with the TCFD recommendations.

COP15, the “COP21 of biodiversity”?

Beside climate change, 2021 is also a key year for biodiversity. The (delayed) Conference of the Parties to the UN Convention on Biological Diversity COP15 summit will take place in October in Kunming, China. AXA’s biodiversity strategy is described in section 4.

As described above, COP21 sent a clear signal for climate action towards corporates and finance players. Indeed voluntary initiatives such as our commitment towards the “Business For Nature” and “Finance for Biodiversity” initiatives (see Biodiversity section) can only go as far as a competitive market environment will allow us to go. Adequate rules and guidance are needed for pioneering issues where the playing field is not level. A government-level approach is required to guarantee long-term efforts, enshrined in political agreements.

The adoption by governments of international science-based biodiversity targets in COP15 is the surest way to provide this much needed clarity. General aspirations will not be sufficient to generate tangible outcomes. Only then, provided these targets are clear enough, may companies, financial institutions, and civil society organizations attempt to translate these nature conservation objectives into robust long-term business strategies.

A “science-based” Kunming Agreement in COP15, carrying the same transformative influence for governments and businesses worldwide as the Paris Agreement imprinted 5 years ago, is needed to generate the same level of political and business leadership for the preservation of biodiversity that has been witnessed for climate change. In particular, COP15 participants ought to develop a clear roadmap for investor action towards biodiversity protection, much in the spirit of the Paris Agreement’s article 2C which helped to reorient financial flows in line with climate neutrality: a “Kunming Agreement” that will reverse biodiversity loss through resolute public-private collaboration to align business models with nature-based solutions.



Thomas Buberl and Mark Carney during GFANZ launch event.

2.4 Green recovery packages to create the right incentives

Mistakes from the recent past

In 2009, the UN called for a “Global Green New Deal” to break dependence on fossil fuels and create sustainable jobs in the wake of the 2008 financial crisis. The UN urged massive investments in energy efficiency for buildings, a boost for wind and solar energy, cuts in fossil fuel subsidies, etc. It reckoned the bill would amount to 1% of global GDP, or about US\$750bn. Ignoring these calls, massive fiscal stimulus packages were launched and the global economy rebounded, while still reliant on fossil fuels. CO₂ emissions grew by 6% in 2010, after a 1.5% dip in 2009, and have risen further since. Repeating this error would be fatal, substituting one crisis for another.

In 2020 and 2021, even larger post-COVID crisis stimulus packages have been launched in the EU and the U.S., but this time there is room for optimism.

European Green Deal

The European Green Deal has a wide array of policy measures, subsidies and legislation aimed at curbing GHG emissions while supporting innovation and green investments. The 2021 European Climate Law makes net-zero GHG emissions legally binding for the European Union by 2050. And crucially, it comes with concrete funding earmarked to fighting climate change. The European Commission (EC) estimates that to reach the 55% GHG target in 2030, annual investment in the energy system will need to be around €350bn higher in the coming decade (2021-2030) than in the 2011-2020 period. This equates to an annual additional increase of 1.7% of GDP, which is massive. We estimate that c. 35% will come from the public sector, while the rest will be supported by the private sector. The EU also plans to strengthen its “market pull” strategy by putting carbon price at the core, including *via* a Carbon Border Mechanism Adjustment.

Fast pace of change with the Biden Administration

The U.S. stance towards climate change has shifted drastically in a matter of weeks following the new administration, epitomized by its rejoining of the Paris agreement and targeted funding. The programs are not as precisely defined as in the EU, nor as advanced, since they are only at the very beginning of legislative process, but the overall ambition is significant.

As part of his overall 8-year infrastructure plan, Biden proposed to earmark US\$100bn to invest in the national grid and shift to cleaner energy, as well as a ten-year extension of tax credits for renewable generation and storage. The plan calls for US\$15bn in prototype projects for utility-scale energy storage, carbon capture, hydrogen, nuclear and floating offshore wind power. It also foresees a US\$27bn “Clean Energy and Sustainability Accelerator” – in clear a financial intermediary acting as a “Green Bank” to mobilize private investment. The other major item in the package is an US\$174bn investment boost for the development and adoption of electric vehicles in the U.S. – including tax incentives to kick-start a network of 500,000 EV chargers by 2030.

Back to better

The pandemic offers a new chance to shape a greener, more sustainable world. Investors are urging policymakers and regulators to learn from past mistakes. One should never let a crisis go to waste: it is an opportunity to do things we thought we could not do before. In short: let’s not aim for “back to normal” but “back to better”.



Politically, the EU is building on its leadership in the fight against climate change, combining a clear ambition with precise and funded investment initiatives. To achieve this, the taboo of “debt mutualization” has been broken, which is testament to the mobilizing capacity of the green agenda across the region, transcending political affiliations. Private agents’ action is of course crucial to curb global warming, but public authorities in the EU are creating the right incentives. In the U.S., while legislative hurdles still abound, the change in policy stance is impressive. Just like in the EU, the U.S. federal government is ready to commit significant funding to the greening of the economy. Given the size of the U.S. contribution to worldwide CO₂ emissions, no credible global strategy can be implemented without the participation of the U.S.

Gilles Moec, Chief Economist,
AXA Group

€750bn
The EU Recovery Fund

€250bn
of the EU Recovery Fund earmarked
towards climate neutrality

2.5 The EU Sustainable Finance Strategy

The EU sustainable finance framework includes a number of EU directives, regulations and other regulatory initiatives. The key elements of this framework, which have not yet been adopted by the EU or are still being implemented, are the following:

- › the **Taxonomy Regulation** which creates a scientific-based classification system of environmentally sustainable economic activities (the Taxonomy), with the aim to trigger changes in behavioral patterns in the financial sector, discouraging greenwashing and scaling up sustainable investments;
- › the **Corporate Sustainability Reporting Directive** (CSRD) which will amend the existing non-financial reporting requirements under the Accounting Directive (as amended by the Non-Financial Reporting Directive [NFRD]) in a more comprehensive and detailed way. The European Commission’s current CSRD proposal is intended to (i) extend the scope of the reporting requirements of the previous NFRD to additional companies, (ii) increase the level of assurance for sustainability reporting, (iii) report against mandatory EU sustainability reporting standards, (iv) introduce a double materiality perspective, (v) require inclusion of sustainability reporting in companies’ management reports, and (vi) align the collective responsibility of the members of the administrative, management and supervisory bodies of reporting companies under the Accounting Directive with the revised sustainability reporting requirements;



- › the **Sustainable Finance Disclosure Regulation (SFDR)** which governs how financial market participants (FMPs) and financial advisers (FAs) should disclose sustainability information towards end investors (including customers/clients) starting from March 2021;
- › an initiative for a **Sustainable Corporate Governance Directive**, with a draft expected in July 2021, will address corporate and director duties with respect to sustainability information reporting.

/// The EU Sustainable Finance Strategy: an unprecedented regulatory overhaul



Patricia Plas,
Group Head of Public Affairs

The European Union’s Sustainable Finance Strategy leads to important regulatory changes at unprecedented speed with the objective to make Europe the first climate

neutral continent by 2050 and to support the transition towards a more sustainable economy. The EU ambition goes therefore beyond the climate objectives and actually embraces the full spectrum of Environmental, Social and Governance considerations. Against this background, the European Commission intends to mainstream sustainability in all EU policies. The aim of this emerging sustainable finance framework is to drive a paradigm shift making sustainability a core part of companies’ strategy, governance, and risk management. The Commission is looking to incentivize a fundamental behavioral change.

3. Governance

3.1 “Role in Society” Steering Committee (RISSC)

In 2020, AXA created an internal structure to accelerate AXA’s ability to leverage its business model to respond to societal issues, with a strong focus on climate-related considerations and in a holistic mindset.

The RISSC is co-chaired by the Group Chief Risk & Investment Officer and the Group Chief Communication, Brand and Sustainability Officer with the purpose of steering AXA’s role in society strategy, e.g. climate, sustainability and inclusive insurance, and reviewing all related material investment, underwriting, risk, operational and policy issues faced

by AXA, including this report. The authority of the RISSC covers all of AXA’s operations. RISSC members represent a wide range of functions, responsibilities and geographies. The RISSC meets on a quarterly basis and reports back to the Management Committee concerning material decisions taken and issues considered on which Management

Committee guidance or decisions are needed. The topics and projects covered by the RISSC are largely described in this report: investment and underwriting guidelines, metrics and targets, risk management, reporting, operational impacts, partnerships, outreach, etc.



- › Committee chairs are responsible for escalating material matters related to AXA’s Role in Society, i.e. Climate change and Inclusive Insurance, to the RISSC.
- › Material matters cover all topics on which the Group will communicate externally, as well as internal decisions with Group-wide operational implications.

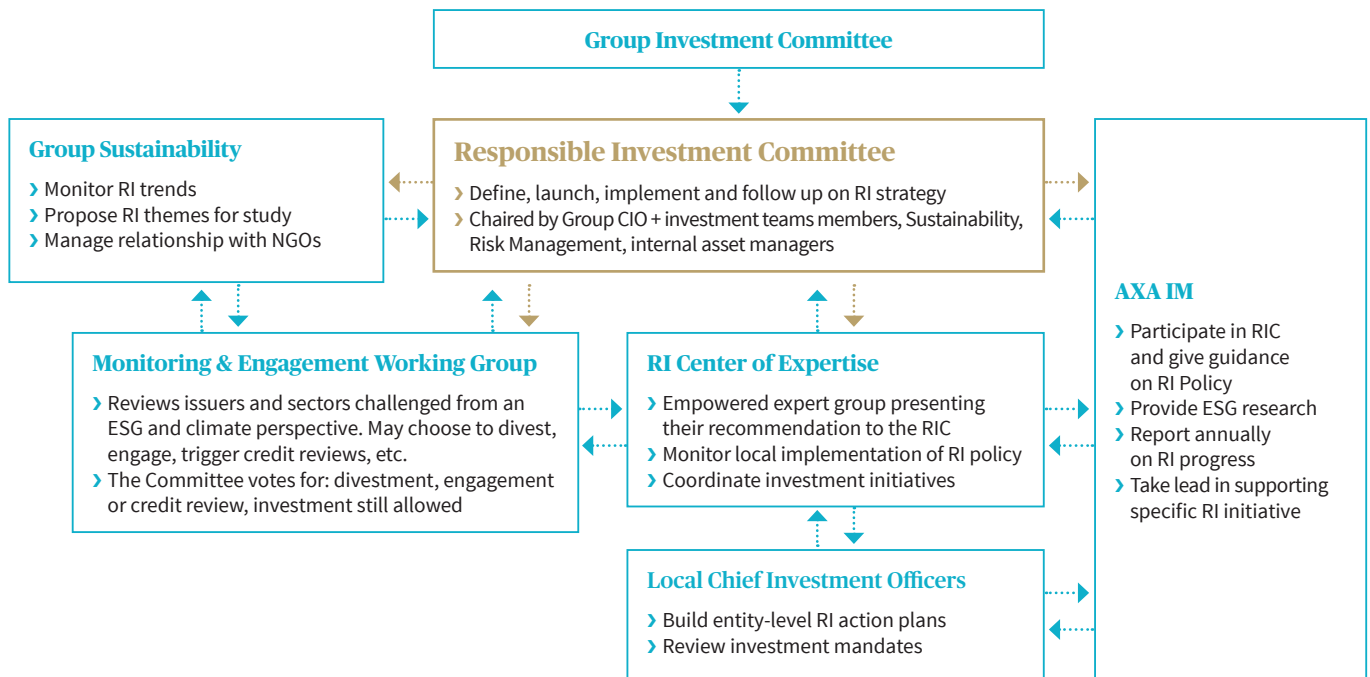
3.2 Investments

In 2010, AXA created a Group-level Responsible Investment Committee (RIC), chaired by the Group Chief Investment Officer, and including representatives from AXA Asset Management entities, Sustainability, Risk Management and Communications. The RIC reports to the Group Investment Committee, co-chaired by the Group Chief Financial Officer and Chief Risk and Investment Officer. However, sensitive and/or strategic climate finance-related decisions debated in the RIC

are ultimately submitted to the RISSC for approval. In addition, the “Engagement & Monitoring” working group – bringing together the Group Investment Department, local insurance entities, the Group’s asset managers and Group Sustainability – reviews risks posed by companies or sectors presenting a low ESG performance and/or serious and persistent controversies, and their impact on financial performance and credit quality. It reviews issuers/industries in which AXA has invested,

from a pure ESG perspective. It can decide on specific follow-up actions.

AXA’s Responsible Investment (RI) policy is supported by the RI Center of Expertise, a transversal working group from AXA’s local investment teams interacting with AXA’s Asset Management entities. AXA IM has also developed a dedicated RI Governance involving all its central management teams and investment platforms.



3.3 Insurance underwriting

Insurance-related ESG risks also benefit from a specific governance, notably the Group Underwriting Committee, which defines underwriting restrictions. The Group Sustainability team provides a bridge with the Responsible Investment-related governance. Within local AXA entities, Chief Executive Officers are required to actively ensure and monitor adherence to the Group underwriting risk framework. They are responsible for

complying with AXA Standards for both Underwriting and Claims. The Group’s policy is implemented by local entities through their own Local Underwriting and Reserving Solvency II P&C policies. Local Chief Risk Officers ensure that the Local Underwriting and Reserving Solvency II P&C policy, approved by the Local Risk Committee, complies with the Group’s policy.

In addition, a dedicated team within Group Risk Management analyzes Emerging Risks (often related to long term ESG issues) via a specific framework, tools and local network in order to monitor their materiality and manage their potential impact on AXA in the next 5 to 10 years. Regular reviews and in-depth analyses of emerging risk topics are shared with the Group-wide Emerging Risks community.

3.4 Group Sustainability

AXA has established a robust governance framework to develop and implement its Sustainability Strategy, including its climate, ESG, investment, and insurance underwriting dimensions. Every year, the Board of Directors' Compensation and Governance Committee examines the Group's Sustainability strategy and reports to the Board of Directors on this matter. Moreover, the Group Management Committee reviews the Sustainability strategy at least once a year.

On a local entity level, a network of "Chief Sustainability Officers" (CSO) is responsible

for coordinating the Sustainability strategy and promoting best practices. The CSOs are supported by local Sustainability teams. Between 2014 and 2020, AXA also leveraged its Stakeholder Advisory Panel⁽¹⁾ to advance the Group's role as an insurer in building a stronger, safer and more sustainable society. In 2021, this structure has been replaced by the "Purpose Accelerator", the Group's program to foster and scale up new projects and ideas, with a grassroots approach, as employees are invited to pitch initiatives driven by AXA's Purpose "Act for Human Progress by Protecting what matters".

As required by the NFRD, AXA conducts an annual internal risk assessment to identify its main sustainability risks, grouped into the following main categories: social risks, human rights risks, environmental risks and risks related to business conduct. This process is further described in AXA's 2020 Universal Registration Document.

More generally, AXA has developed a culture of stakeholder dialogue by working closely with a number of civil society partners, to strengthen its understanding of evolving sustainability issues.

3.5 Audit Risk & Compliance Committee (ARCC)

See Risk Management section.



(1) Terminated in 2020.

4. Strategy, Metrics & Targets

4.1 Section overview

This section combines a large number of strategy developments as well as target setting and results. It combines both investment and underwriting-related initiatives and commitments, as well as climate change, biodiversity and our broader ESG integration strategy.

4.2 Climate Strategy & Commitments

Strategy context

Climate change is a medium to long-term risk with a complex quantification of impacts on our activities. AXA's strategy is not only to adapt, but also to take advantage of our expertise to provide solutions. Indeed, we are well equipped to contribute to the understanding of climate change through our risk management expertise, the vast number of claims data we collect, and the research we fund to address climate-related risks. As an insurer, we also have a responsibility to share knowledge about new risks. Through our underwriting decisions, we can also show the risks society is taking and foster prevention actions to mitigate them. Finally, through our significant investments, we are also well positioned to send the right signals to the investment community and to the specific companies we invest in.



Our climate-related initiatives leverage every asset and expertise at our disposal: green investments, divestments and underwriting restrictions, products with environmental added value, climate resilience and adaptation solutions, risk modeling, impact investing, shareholder engagement, direct environmental footprint reduction, academic research, outreach, thought leadership, partnerships and employee volunteering.

AXA has been a pioneer in setting up an ambitious climate change strategy. AXA first **sounded the alarm** stating that “a 4°C world is not insurable”. By this we meant that runaway climate change will create risks so large that conventional market mechanisms may no longer be suitable.

From the start, we adopted a balanced approach to contribute to the transition towards a more sustainable and less carbon-

intensive economy. We legitimized **coal divestment** in early 2015. Coal is by far the most carbon intensive form of energy. Phasing it out is key to achieve the Paris Agreement goals. In 2017, we pioneered **coal and oil sands restrictions in our insurance business**, which is a difficult business decision, then extended it progressively to our new Commercial Lines entity, AXA XL, in 2018. We have also committed to and achieved an ambitious **green investment target**. We promoted a strong **collective agenda** with the TCFD and EU initiatives. We have explored **new forward-looking climate alignment metrics** since our 2018 TCFD Report. In 2019 we reframed the **biodiversity crisis** as a financial risk.



Full-page advertisement in the New York Times, April 2021.

AXA's climate strategy

AXA's current climate & biodiversity strategy, updated in November 2019 features the following developments in 2020 and 2021, supporting the concept of aligning our business with the Paris Agreement:

- › capping the “Warming Potential” (see Investments section below) of our investments under +1.5°C by 2050;
- › this long-term target is complemented, since December 2020, with a -20% investment-related carbon footprint target between 2019 and 2025;
- › a green investment target of €24bn by 2023, increased to €25bn following a €1bn Green Bond issuance by AXA SA in 2021;

- › the launch of the “Transition Bond” asset class, with AXA IM investing in a first €100m issuance by Crédit Agricole CIB in 2019 and a second one by BPCE in 2020;
- › a medium-term total exit from the coal industry backed by strict investment and underwriting restrictions, as well as on other carbon-intensive industries;
- › a target to achieve carbon neutrality in our operations and reduce our direct environmental footprint by 2025;
- › a commitment to address biodiversity loss through investment and underwriting policies;

- › launch of AXA Climate School in April 2021;
- › launch of AXA for Progress Index in April 2021.

In addition, AXA called for the creation of an industry-led alliance to promote climate neutrality in insurance underwriting practices, the **Net-Zero Insurance Alliance**⁽¹⁾, and is now actively building this coalition (see next section).

These initiatives are developed in the following sections.

4.3 AXA For Progress Index

AXA's sustainability strategy aims to fulfil two main goals: act as a leading force against climate change and expand our health and protection businesses as an inclusive insurer. AXA has chosen to send a strong signal by placing its climate commitments at the core of the new strategic plan Driving Progress 2023 launched in December 2020.

To make our Purpose “Act for human progress to protect what matters” concrete for all our teams, we decided to implement a tool to measure and track our progress in deploying our Purpose in every aspect of our activities. The AXA For Progress Index was launched in April 2021⁽²⁾.

This tool is based on seven commitments shared across the Group to further embed sustainable development in our activities threefold: as an investor, as an insurer, and as an exemplary company. With five of the seven commitments aimed at shaping the climate transition, the AXA for Progress Index is now the primary measurement tool for the Group to achieve objectives set out in its climate & biodiversity strategy.



Source: AXA.

This index is not just a statement of our achievements; it enables us to identify, measure and steer our actions to fulfil our commitments with Key Performance Indicators (KPIs). A general KPI applies throughout the Group: the Dow Jones Sustainability Index (DJSI)/Corporate Sustainability Assessment (CSA) which ranks our global ESG performance in comparison with our main competitors.

Specific working groups have been set up with key stakeholders at local entity and Group levels to define the action plans to achieve our commitments for 2021 and 2022. AXA is currently setting objectives for green insurance products that contribute to climate change mitigation, while also addressing biodiversity aspects. Furthermore, it will promote the adoption of responsible behavior in post-damage situations, following the principles of “Build Back Better”. A “green business” target will complement the Net-Zero Insurance Alliance by helping our clients

gradually shift from “brown” to “green”, and creating new business opportunities. The results of the Index will be published on an annual basis. For 2021, the results for the following three key performance indicators will be included in the compensation packages of our executives and approx. 5,000 AXA employees as a starting point:

- › Dow Jones Sustainability Index ranking;
- › reduction of operational carbon emissions;
- › reduction of investment-related carbon footprint (General Accounts assets).

(1) <https://www.axa.com/en/magazine/axa-and-net-zero-insurance-alliance>

(2) <https://www.axa.com/en/magazine/leaders-voice-axa-for-progress-index>

4.4 Net-Zero Coalition-building

Recent years have seen the launch of several climate coalitions aiming for “climate neutrality” (see following section), such as the “Race to Zero” highlighted in the opening sections of this report, combining cities from all regions and businesses from all industries.

The financial services industry recently created four “Net-Zero” alliances for institutional investors (Net-Zero Asset Owner Alliance), asset managers (Net-Zero Asset Management Initiative), insurers (Net-Zero Insurance Alliance) and banks (Net-Zero Asset Banking Alliance), now grouped under the “GFANZ” coordination framework.

Net-Zero Asset Owner Alliance⁽¹⁾ (NZAOA)

AXA joined the UN-led NZAOA in November 2019. The NZAOA is an international group of institutional investors with a commitment to transition their investment portfolios to net-zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial temperatures, taking into account the best available scientific knowledge, and regularly reporting on progress, including establishing intermediate targets every five years. The metric for reporting against progress will be based on GHG emissions and “investment temperature” methodologies. The NZAOA’s shareholder engagement efforts will be key to achieve the “real-world” transformation pushed by its members’ climate neutrality commitments. AXA currently leads its “Portfolio Alignment” working group (see Portfolio Alignment section). AXA also launched its -20% carbon footprint (2019-2025) target, in line with the NZAOA’s “Target Setting Protocol” (see Carbon footprinting section).

Net-Zero Asset Management Initiative⁽²⁾ (NZAMI)

In 2020, AXA IM announced its commitment to bring carbon emissions across all assets to a target-based net-zero goal by 2050 or sooner, by joining the newly created NZAMI upon launch. AXA IM is now working in collaboration with clients to drive meaningful environmental and societal change by reaching net-zero by 2050 or sooner. Concretely, AXA IM will:

- › work in partnership with asset owner clients on decarbonization goals, consistent with an ambition to reach net-zero emissions by 2050 or sooner across all assets under management;
- › set an interim target for the proportion of assets to be managed in line with the attainment of net-zero emissions by 2050 or sooner;
- › review the interim target at least every five years, with a view to ratcheting up the proportion of AUM covered until 100% of assets are included;
- › announce ahead of COP26 the initial scope of assets to be managed in line with the net-zero target, as well as the methodologies to be used and related intermediate targets. In doing so, AXA IM is leveraging the work started with the Group for the NZAOA.



There is an urgent need now to accelerate the transition towards global net-zero emissions and as such, the fight against climate change requires cooperation. The financial services industry must be at the forefront to drive this collective action. As long-term stewards of the investments entrusted to them, asset managers have the ability to contribute to achieving the goals of the Paris Agreement and can play a pivotal role in tackling these challenges, which we know are also key concerns for clients. AXA IM made strong commitments to the AXA Group's climate journey several years ago with the decision to divest from coal in 2016 and continue to progress with the work conducted at AXA IM on the “Warming Potential” of assets. Being among the first asset managers to commit to reaching net-zero greenhouse gas emissions by 2050 across all assets under management is another major milestone of AXA IM's responsible investment approach, and complements the commitment made by the AXA Group one year ago.

Marco Morelli, Executive Chairman,
AXA Investment Managers

42
members

within the Net-Zero Asset
Owner Alliance

US\$ 6.6 trillion
Combined assets under management

(1) <https://www.unepfi.org/net-zero-alliance/>

(2) <https://www.netzeroassetmanagers.org/>

Net-Zero Insurance Alliance (NZIA)⁽¹⁾

In December 2020, AXA called for the creation of an alliance dedicated to supporting climate neutrality in our insurance practices, ahead of COP26. A group of peers gathered under the auspices of the UN Principles for Sustainable Insurance to start defining the ambition of the upcoming NZIA. **AXA will chair this pioneering coalition**, highlighted during the GFANZ launch in April 2021. The founding members of this future Alliance are currently working on ensuring that it will comply with applicable laws, rules and regulations, including antitrust.

Biodiversity: creating a new Task Force

Beside these Net-Zero alliances, AXA is also actively working with peers but also governments and civil society organizations to launch a “Task Force on Nature-related Financial Disclosures” (TNFD)⁽²⁾. It is designed to be built on the successful model of the TCFD. See section 4. The TNFD will launch in a context of strong focus on biodiversity by regulators: art. 29 Decree in France and Taxonomy Regulation's further developments.

✓ Sustainable underwriting: AXA is extending its impact with a knock-on effect for insurance



Renaud Guidée, Group Chief Risk Officer and NZIA Chair

To address the challenge of climate change, we believe it is not enough to take action on our assets side of our balance sheet, through our investment policy: we also need to leverage our underwriting policy, i.e. how we provide our clients with insurance guarantees (which are booked as liabilities on our balance sheet). This is why, on the fifth anniversary of the Paris Agreement, AXA called for the creation of a Net-Zero Insurance Alliance, with a view to building a shared commitment to turning our core business, underwriting, into a driver for transformation towards carbon neutrality and action against global warming.

From 2017 to 2019, we gradually excluded a growing share of coal-related business from our underwriting, and we will have fully divested from the sector by 2040. This is a crucial step, but we must go further, for example with incentive schemes supporting

sound environmental practices. In addition to investing, insurance can provide a powerful boost to the development of companies contributing to the climate transition. We also promote the re-use “circular economy” through our claim settlements, for example by helping customers rebuild more sustainably or repair their vehicles with recycled parts. Since 2015, AXA France customers have bought approximately 5 million citizen insurance contracts based on such an approach.

The Net-Zero Insurance Alliance’s plans are currently being discussed by insurance and reinsurance leaders, with the support from the United Nations Principles for Sustainable Insurance. Together, we will define commitments, along with metrics to improve how we gauge negative externalities and assess the impact of our action. The outcome of our work will be presented by the November 2021 COP26.



(1) See UN PSI global communications here: <https://www.unepfi.org/psi/wp-content/uploads/2021/04/PSI-NZIA-announcement.pdf>

(2) <https://tnfd.info/>

4.5 Climate scenarios

Before investigating metrics and targets, it is necessary to explore the concept of climate scenario analysis to understand possible “climate futures” and how to connect them to strategy. See also section 5 Climate-related Property (re)insurance impacts and Climate stress testing.

Investment-related scenario analysis: the role of COP21 commitments

Achieving Carbon neutrality or “net-zero” emissions requires striking a balance between anthropogenic emissions by sources and removals by sinks. To reach this target, 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 decarbonization pathway. The COP21 **Nationally Determined Contributions** (NDCs⁽¹⁾) describe such decarbonization pathways. Of note, most of the current NDCs have 2020 to 2030 “deadlines”, but 2050 NDCs are scaled back to 2030 (using a linear approach) in our modeling in the following pages. The 2018 “UNEP Emissions Gap” Report⁽²⁾ estimates that implementing the unconditional NDCs would lead to a mean global temperature of around 3.2°C, and analysts estimate that a “Business As Usual” world (NDCs not implemented) would produce at least +4°C by 2100.

Context Box



How are climate risks defined?

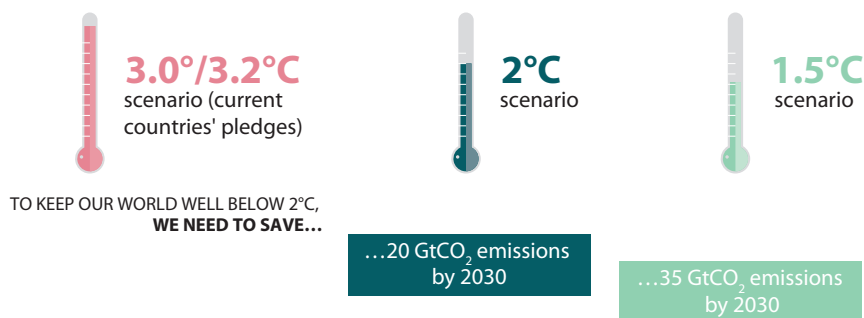
According to the TCFD, companies and investors may face “transition”, “physical” and liability risks, which may be defined as follows:

- ▶ **“transitioning** to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations”;
- ▶ **“physical** risks resulting from climate change can be event-driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Organizations’ financial performance may also be affected by changes in water availability, sourcing, and quality; food security; and extreme temperature changes affecting organizations’ premises, operations, supply chain, transport needs, and employee safety”;
- ▶ in addition, **“liability** risks”, arising from failure to comply with climate-related norms and regulations, as well as losses or damages incurred from the effects of climate change⁽³⁾.

These concepts are used by numerous organizations, and frequently referred to in this report.

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

By 2100, we will face a rise of global temperatures. Reference scenarios:



Sources: IPCC 1.5°C report, AXA IM, 2019.

(1) Main NDC registry: <https://www4.unfccc.int/sites/NDCStaging/Pages/Home.aspx>

(2) <https://www.unenvironment.org/resources/emissions-gap-report-2018>

(3) FSB’s “Proposal for a disclosure task force on climate-related risks”, dated November 9, 2015, p. 1 (https://assets.bbhub.io/company/sites/60/2015/11/FSB_Disclosure-task-force-on-climate-related-risks.pdf)

Climate scenarios, testing the sensitivity of business models to various carbon roadmaps

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 Carbon Capture & Storage (CCS). They could lead to certain predicted outcomes such as how much temperatures will rise and what this level of global warming will result in for the environment, society and the economy.

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

In well-known scenarios such as those produced by the **International Energy Agency** (IEA), efforts to limit greenhouse

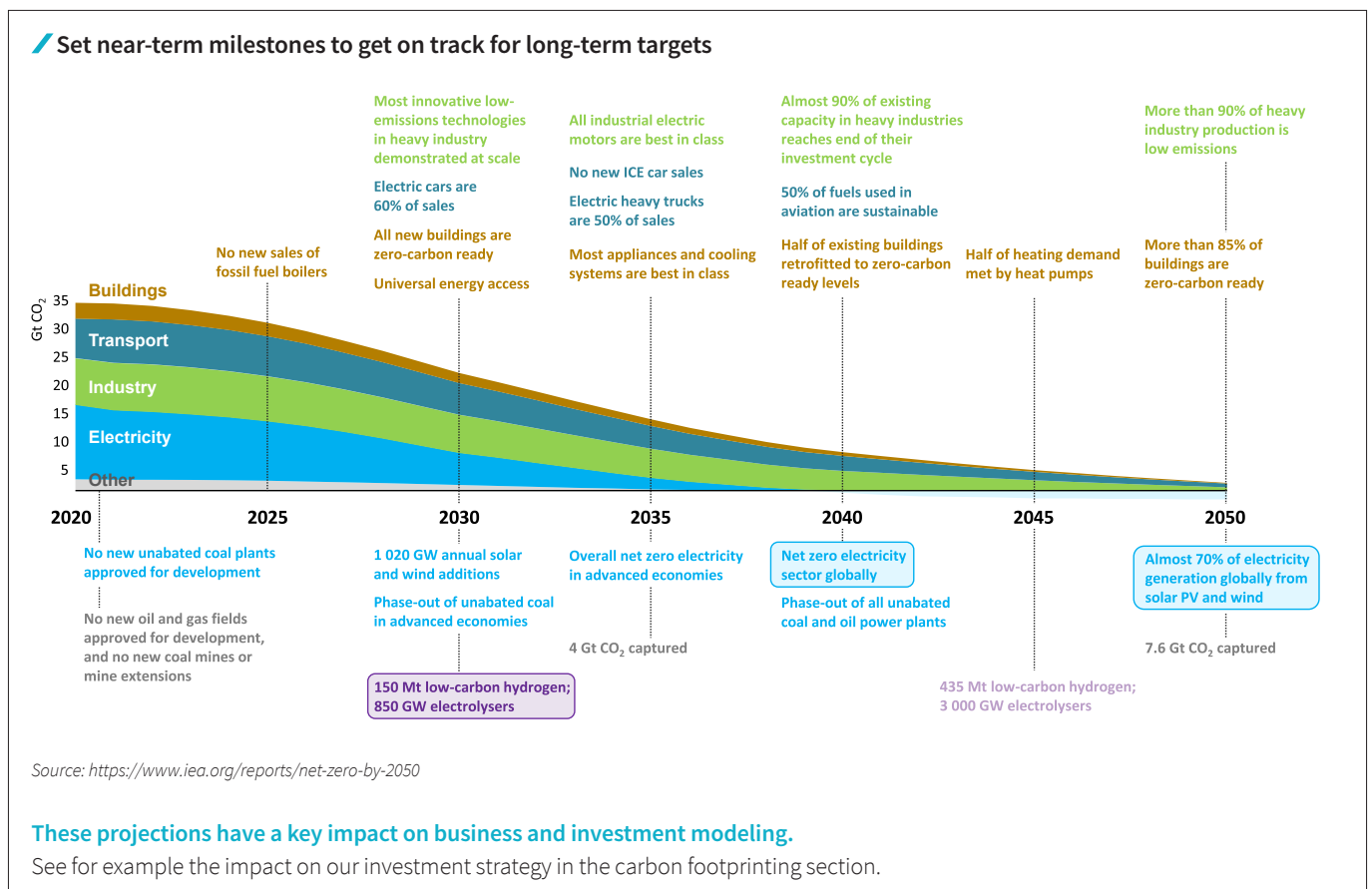
gas emissions are derived mainly from technical and technological energy efficiency measures. While they say little on social conditions, relative costs and technological developments to achieve such energy mix shift, IEA scenarios are well recognized and widely used especially by companies with a strong climate impact. Indeed, in May 2021, the IEA published a landmark report: its first modeling of “energy futures” that can achieve climate neutrality in 2050. Its findings are striking: it sets out 400 milestones that are needed to achieve the 2050 target which include, from today, no investment in new fossil fuel supply projects, and no new unabated coal plants. By 2035, there are no sales of new internal combustion engine passenger cars, and by 2040, the global electricity sector has already reached net-zero emissions. An immediate and massive deployment of all available clean energy technologies is required, as well as increasing energy efficiency by 4% a year (three times the current average). Nuclear power must grow far more than the most optimistic projections, and numerous technology innovations are also required.

400

Strategic milestones needed to achieve 1.5°C according to 2021 IEA report














90%

Electricity generation needed from renewables by 2050, and the rest from nuclear according to IEA



4.6 Climate metrics overview

Following this approach to scenario analysis, AXA has tested different approaches to analyzing the “climate dynamics” of its investments since 2016. In 2020-2021, AXA has again deepened its work by asset class, based on methodologies provided by external climate risk experts (Carbon Delta MSCI, Beyond Ratings, S&P Trucost), while also using internal “NatCat” models to cover our Real Assets investments (see Risk Management section). We engage with data providers and industry groups to refine these methodologies (notably via the Net-Zero Asset Owner Alliance and TCFD) as we are keen to more effectively navigate the evolving data landscape and collectively tackle the challenge of aligning our strategies with the Paris Agreement. This work covers two broad areas: “transition risks” and “physical risks”, as defined by the TCFD.

METRIC TYPE		ASSET CLASS	DATA PROVIDER	WHAT IS MEASURED?
WARMING POTENTIAL		SOVEREIGN DEBT		Contribution to global warming, expressed in °C.
		CORPORATE BONDS & EQUITY		Contribution to global warming, expressed in °C.
CLIMATE VALUE-AT-RISK	PHYSICAL RISKS COSTS	CORPORATE BONDS & EQUITY		Impact of extreme weather events (asset damages and business interruption), expressed in % of Enterprise Value (EV).
		REAL ASSETS		Building-level impacts of extreme weather events, expressed in €m.
	TRANSITION RISKS COSTS	CORPORATE BONDS & EQUITY		Impact of CO ₂ emissions reduction, expressed in % of Enterprise Value (EV).
	TECHNOLOGICAL OPPORTUNITIES	CORPORATE BONDS & EQUITY		Revenues related to technological opportunities (green revenues & patents), expressed in % of Enterprise Value (EV).
GREEN SHARE		SOVEREIGN DEBT		Share of low-carbon energy in primary energy use (hydropower, wind, solar, geothermal, tidal, nuclear).
		CORPORATE BONDS & EQUITY		Green revenues, expressed in % of revenues.
CARBON FOOTPRINT		SOVEREIGN DEBT		Carbon footprint of AXA's portfolios expressed in T.eq.CO ₂ /\$m of revenues (corporates) or GDP (sovereigns).
		CORPORATE BONDS & EQUITY		
		REAL ASSETS		EV-based carbon footprint of AXA's portfolio, expressed in T.eq.CO ₂ /EV €m (normalized per Enterprise Value)
		CORP. BONDS & EQUITY (EXCL. FINANCIALS)		
		CORP. BONDS & EQUITY (EXCL. FINANCIALS)		
			Absolute carbon emissions pro-rated per AXA's holdings, expressed in T.eq.CO ₂ .	

4.7 Impact: Climate-related portfolio alignment

Monitoring progress towards 2050 climate neutrality using forward-looking ‘temperature’ metrics.

As highlighted in this report’s introduction and climate scenario section, the Paris Agreement’s goal to contain global warming below 2°C invites all market participants to reorient “finance flows” in line with this target. The TCFD guidelines expect “asset owners to describe how they consider the positioning of their total portfolio with respect to the transition to a lower-carbon economy”. In France, “Article 173” (as defined above) requires certain institutional investors (e.g., insurers and reinsurers, management companies of investment funds) to explain how they contribute to the goal of limiting global warming, and indeed encourages

these investors to set targets relating to this goal and explain how these targets relate to “international agreements to reduce global warming”. More generally, 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, also explored in this report, such as carbon footprinting (which is not forward-looking), divestments (which only focus on the most carbon-intensive sectors), green investments (which are challenging to bring to scale and often overlook “transition” sectors) or

shareholder engagement (with results that are sometimes difficult to measure).

Investors are turning more now 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 – and notably factoring the COP-related Nationally Determined Commitments. AXA investigates the concept of “Warming Potential” in the following pages as a promising approach. The concept is relevant, but methodology challenges remain significant.

“Warming Potential” methodology applied to Corporate equity and debt

As explained above, the concept of “portfolio alignment” with the Paris Agreement requires testing innovative forward-looking metrics. Since 2018, AXA has leveraged a “transition risk” model developed with Swiss environmental fintech Carbon Delta (recently acquired by MSCI) which produces the “Warming Potential” (WP) metric expressed in terms of temperature. Its modeling approach combines top-down data and bottom-up economic and company data to establish a forward-looking climate-related set of metrics.

Indeed the “Warming Potential” methodology relies on a top down approach based on:

- › country-level “Paris Agreement” commitments projecting carbon intensities to 2030 (the horizon of the Nationally Determined Contributions (NDCs⁽¹⁾) presented to the COP21);
- › gaps between NDCs and carbon emissions budget associated to various temperature scenarios (according to the UNEP Gap report);
- › company-level business mix structures by sectors and countries;
- › company-level current carbon intensities and R&D in green technologies/products;

- › R&D in green technologies/products highlighting “transition” opportunities.

One of the key features of Carbon Delta MSCI’s approach is to correlate macro level “carbon budgets” (describing carbon emissions and sinks at the global level) with companies (as individual carbon emitters) depending on their geographic footprint and sector as well as business mix. This “temperature” concept provides a measure of the gap between future carbon pledges and science-based emissions budget still available before global warming increases.

By working with Carbon Delta MSCI, AXA developed a more balanced “Warming Potential” approach considering both companies’ absolute and sector-relative contributions to global warming. This combines a so-called “sector-specific” approach (which takes into account regulatory perspectives of a given country on its economic sector), and a “sector-agnostic” approach (which is based on an absolute emissions intensity view, regardless of sectors or the functioning of an economy). The figures disclosed in this report combine and average both approaches to retain an emphasis on

emissions reductions from carbon-intensive sectors (this reflects the “sector-specific” bias), while still ensuring that all other sectors are expected to contribute to the transition to a low-carbon economy (“sector-agnostic” bias).

This deliberate methodological choice factors both the sectors’ relative contributions to climate mitigation as well as individual companies’ best practices within their respective industries to curb carbon emissions. Indeed, **AXA believes that each player in the global economy should have a responsibility to support the low carbon transition, and in turn, investors who are committed to support the energy transition should have a responsibility to identify, within each sector, the companies best prepared for this transition** – as described in this report. More detailed methodology descriptions are available on Carbon Delta MSCI’s website.

(1) Main NDC registry: <https://www4.unfccc.int/sites/NDCStaging/Pages/Home.aspx>

While initially focused on Scope 1 emissions, Carbon Delta MSCI brought significant updates to its methodology in 2020:

- › for transition risks assessment, both self-reported and estimated emissions data are combined and considered;
- › Scope 2 and Scope 3 emissions have been added in the calculation of carbon intensities;
- › for the assessment of “green opportunities”, future green revenues reflected by patents developments have been combined with current green revenues, thus considering current exposure of companies’ revenues to green activities – not just future revenues;
- › the “Warming Potential” “cap” which was previously set at 6°C has been increased to 10°C to capture a broader range of behavior and impacts;

› carbon emissions reduction targets are now included in the temperature calculation.

These methodology changes have a profound impact on the temperature of some sectors, notably the automotive, energy, consumer services and financial sectors, which have seen their temperature and transition risks increase. The transition risks in the oil and gas and electric utilities sectors have also increased due to the inclusion of scope 2 and 3 emissions. We have re-run the “Warming Potential” calculation of our 2019 and 2018 investments with this new methodology. Therefore, the figures set out in our 2020 Climate Report are not comparable, and should not be compared with the figures included in this report.

Context Box



Carbon emissions scopes

CO₂ emissions released by corporates come from:

- › Scope 1: “on-site” direct emissions;
- › Scope 2: emissions related to the purchase of power;
- › Scope 3 emissions: indirect emissions generated by supply chains or the use of products.



“Warming Potential”: 2020 Corporate equity and debt results

Based on the methodology described above, AXA updated the “Warming Potential” analysis of its investments database at end of December 2020, as well as 2019 and 2018, for comparison and trend analysis purposes.

Between 2019 and 2020:

- AXA's **equity** “Warming Potential” remained flat at 3.3°C (but decreased slightly vs 2018 at 3.4°C), while our equity benchmark⁽¹⁾ slightly decreased from 3.6°C to 3.4°C;
- AXA's **corporate debt** “Warming Potential” slightly decreased from 3.7°C to 3.6°C, while our corporate debt benchmark slightly decreased from 3.8°C to 3.7°C;
- on aggregate, **our corporate equity & debt Warming Potential decreased very slightly from 3.62°C to 3.56°C** while a broad benchmark on the same universe decreased slightly from 3.8°C to 3.7°C.

This shows that AXA's corporate investments “Warming Potential” has decreased while the economy into which we invest has also decreased very slightly. It would be unwise to draw short-term conclusions from such small variations on evolving metrics that bear most relevance on a long-term horizon. This also shows that these figures are still significantly above 2°C, which confirms that with today's public policies and business environment, and according to the “Warming Potential” model, **AXA's operating investment universe is not yet aligned with the 2°C trajectory agreed during COP21**, which should not come as a surprise, but as a call to implement transition strategies.

A sector-level analysis comparing AXA's “Warming Potential” vs benchmark provides further insight.

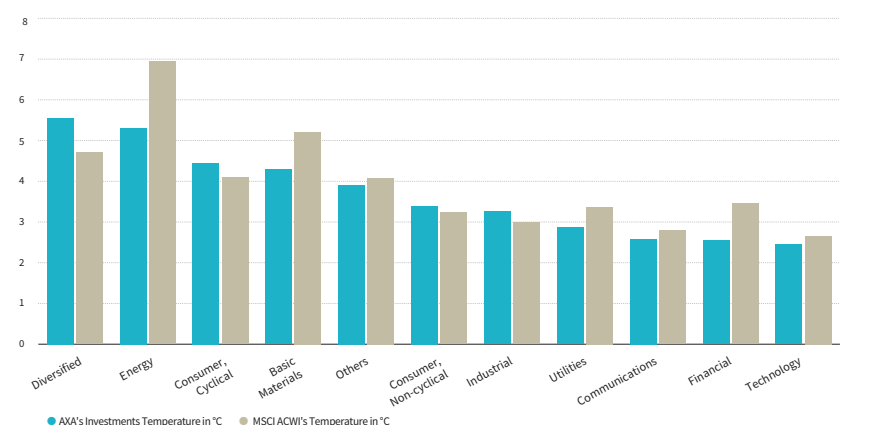
3.6°C

AXA's 2020 corporate assets
warming potential

3.7°C

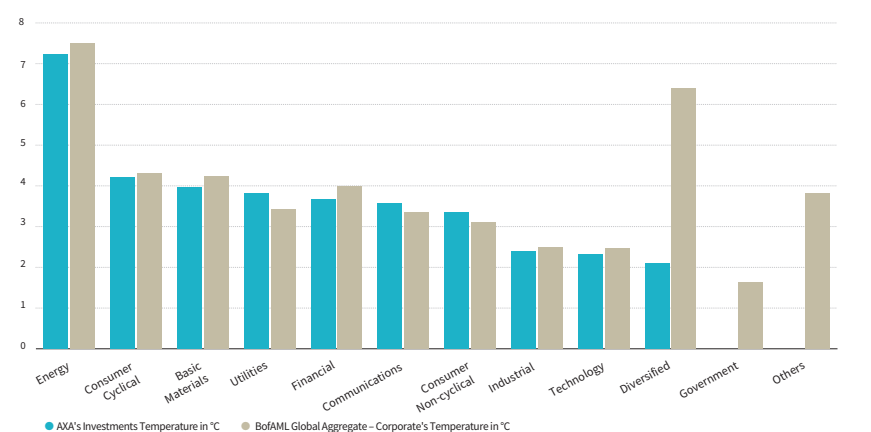
AXA's 2020 corporate assets
benchmark

Equities Warming Potential



Source: Carbon Delta MSCI/AXA⁽²⁾.

Corporate Bonds Warming Potential



Source: Carbon Delta MSCI/AXA⁽²⁾.

According to this work, the equity diagram reveals that AXA's investments tend to have a lower temperature than the benchmark on carbon-intensive sectors such as Energy, Basic materials and Utilities. This is particularly significant for the Energy sector where AXA's investments have a lower “Warming Potential” by roughly 1.5°C. On the other hand, the “Warming Potential” on Diversified is higher compared to the benchmark. A similar trend exists for Corporate debt, albeit with a lower magnitude compared to its benchmark. Although it would be unwise to draw short-

term conclusions from such small variations on evolving metrics, this over performance is driven by the overweight on Financials combined to an underweight on sectors with high carbon emissions (Energy, Consumer Cyclical, Utilities).

How can a large asset owner like AXA influence its Corporate “Warming Potential”, bearing in mind the numerous investments, regulatory and fiduciary constraints to which an insurer's investments are subject? We believe that there is still room for action for investors, and AXA has acted.

(1) Benchmarks used in this report: MSCI World ACWI (equities), ICE BofAML Global Broad Market corporate (corporate debt), JPM GBI Global (sovereign debt).

(2) Corporate Equity Exposure Coverage: 89.4%.

(3) Corporate Bonds Exposure Coverage: 86.7%.

For example, our analysis shows that AXA’s climate-related divestments (coal, oil sands), in accordance with AXA’s RI Policy, have reduced the “Warming Potential” of our Corporate holdings, as the “warmest” sectors (Utilities, Materials, Energy) are now underweighted in terms of asset allocation. The average “Warming Potential” of AXA’s coal exclusion list reaches 3.9°C (including the “smoothing” effect on temperature caused by combining sector “agnostic” and “specific” models). Conversely, AXA’s Green Investment target, initiated in 2015 (see Green investments section) pushed our investment teams to overweight “green” assets.

However, coal divestment and green investments only slightly reduced AXA’s “Warming Potential”. Indeed they concern only a small fraction of AXA’s overall Corporate investments, and divestment has a gradual impact as coal and oil sands debt assets are run off over the course of several years. This is why this decision alone is insufficient to bring AXA’s “Warming Potential” significantly below its benchmark, and **a broader and more collective approach is required, for example via the Net-Zero Asset Owner Alliance.**

3.9°C

AXA's 2020 divested coal assets warming potential

2040

Phase-out of all unabated coal and oil power plants in IEA's 2021 1.5°C scenario

90%

By 2050, almost 90% of electricity generation comes from renewable sources. Most of the remainder comes from nuclear.

“Warming Potential” methodology applied to Sovereign debt

AXA evaluates the “Warming Potential” of its Sovereign Debt assets using a different climate data partner (Beyond Ratings, acquired by the London Stock Exchange in 2019), which has developed a dedicated expertise in this field. Beyond Ratings follows an approach which is similar to Carbon Delta MSCI: it compares the future carbon abatement commitments that Governments made towards the Paris Agreement’s “carbon budget”, associating a theoretical temperature to national carbon pledges. Beyond Ratings has developed an approach inferring “2°C” compliant carbon budgets by countries by relying on the so-called “Kaya relationship” between Greenhouse Gas (GHG) emissions, GDP growth, demography, energy efficiency and carbon intensity.

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 2°C compliant carbon intensities. More generally, using the theoretical linear relationship between carbon emissions and

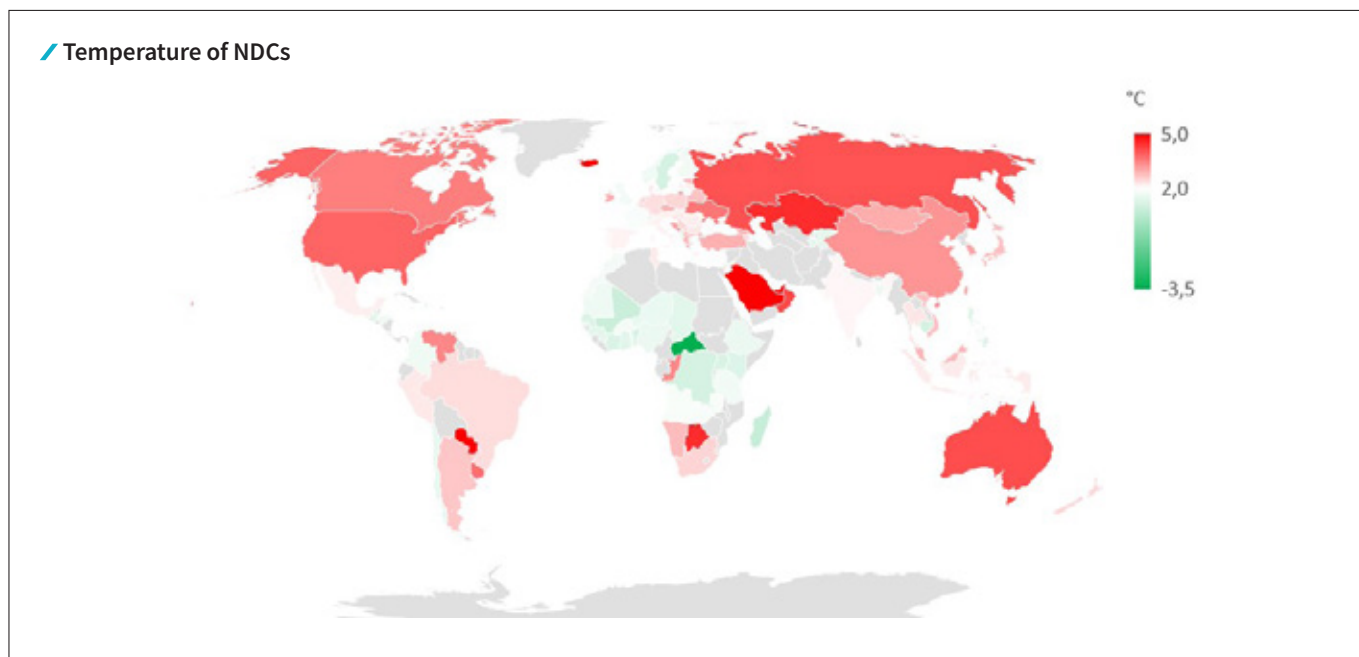
$$\frac{\text{GHG Emissions}}{\text{Population}} = \frac{\text{GDP}}{\text{Population}} \times \frac{\text{Energy}}{\text{GDP}} \times \frac{\text{GHG Emissions}}{\text{Energy}}$$

temperature rise, Beyond Ratings defines a corresponding temperature based on country-level 2030 carbon commitment intensities.

Beyond Ratings also brought changes to its methodology, now reflected in this Climate report. The curve reflecting the relationship between temperature and additional carbon emissions has been updated with the 2018 IPCC insights, whereas it was previously relying on the 2014 IPCC report. As a result, the slope of the curve has decreased, which has impacted all temperatures downwards, but more heavily those which were very high,

namely Australia, the United States, Canada and Japan. Therefore, the figures set out in our 2020 Climate Report are not comparable, and should not be compared with the figures included in this Climate report. We have recalculated figures included in our earlier Climate Reports using the new model.

In addition, some sovereign “temperatures” have also evolved following their updated NDCs (46 new NDCs including: the UK, Australia, Japan, Mexico, Switzerland...). The following map shows the temperatures associated with the current countries’ NDCs.



“Warming Potential”: 2020 sovereign debt results

Based on this model, the “Warming Potential” of AXA’s Sovereign Debt in 2020 reached **2.3°C** (broadly flat vs 2019, and slightly below 2018 at 2.4°C), while our benchmark also remained flat but at the much higher value of 3°C. **This is due to our significant exposure to French Government debt** (25% of our Government debt holdings, vs a benchmark of 8%), which has a low temperature score (1.9°C), mainly due to the country’s low-carbon energy mix (essentially nuclear and hydro power), and to our investments in the European Union countries, in general which have lower temperatures than the U.S., itself overweighted in the benchmark. This is described in the following table. Again, a closer analysis reveals wide disparities in terms of “Warming Potential” amongst sovereign issuers, according to this approach.

✓ Sovereign allocation breakdown and Warming Potential

2020	AXA Sovereign Debt				Benchmark	
	AUM	AUM %	Temperature (°C)	% Cov. Temp	Weight	Temperature (°C)
Australia	1,379,118,410	0.56%	4.1	100.00%	1.96%	4.1
United States	15,183,428,017	6.15%	3.8	100.00%	41.49%	3.8
Canada	805,372,900	0.33%	3.5	100.00%	1.73%	3.5
Japan	34,434,923,452	13.94%	2.7	100.00%	19.40%	2.7
Netherlands	6,061,417,903	2.45%	2.5	100.00%	1.44%	2.5
Belgium	19,823,475,105	8.03%	2.5	100.00%	1.84%	2.5
Germany	14,898,869,493	6.03%	2.4	100.00%	4.85%	2.4
Denmark	2,742,543	0.00%	2.3	100.00%	0.37%	2.3
Sub-nationals	15,204,855,490	6.16%	2.3	100.00%		
Other countries	39,239,897,795	15.89%	2.2	93.59%		
Italy	21,499,672,403	8.70%	2.1	100.00%	6.82%	2.1
Spain	15,096,213,595	6.11%	2.1	100.00%	4.40%	2.1
France	61,179,843,183	24.77%	1.9	100.00%	7.70%	1.9
United Kingdom	2,188,991,080	0.89%	1.7	100.00%	7.74%	1.7
Sweden	4,660,480	0.00%	1.1	100.00%	0.26%	1.1
Total	247,003,481,849	100.00%	2.34	98.98%	100.00%	2.96

Source: AXA, Beyond Ratings/LSEG.

2.3°C

AXA's Sovereign debt assets
warming potential

3°C

AXA's sovereign debt
benchmark warming potential

This work reveals that a country’s energy mix and high reliance on fossil fuels (Australia, the U.S., Canada) is a key driver of future “financed emissions” for sovereign debt investors. Japan is a similar case, as since 2012, its nuclear energy supply has been phased out and gradually substituted by a combination of coal and natural gas, leading to a significant “brown share”.

This analysis can serve as proxy indicators for transition risk & opportunities. Indeed, countries with a “cooler” “Warming Potential” are in principle on the way to successfully decoupling carbon emissions from economic activities, reducing the emissions of downstream sectors, and thus minimizing general exposure to regulatory costs related to carbon in the jurisdictions where they operate.

Considering AXA’s sovereign geographic exposure to the EU, a reduction in AXA’s sovereign “Warming Potential” will need to rely heavily on the phase out of coal in Europe and a corresponding rise in renewables and nuclear (e.g. France, the UK). This is particularly relevant to AXA’s lending to Germany and Italy given their share of AXA’s asset allocation. Although not the largest coal producers in the EU nor the countries with the largest share of coal within their primary energy mix, Germany and Italy have some of the largest coal power plants in the EU.

Of note, much attention has been brought on “financed emissions”/“Warming Potential” of Corporates because they can be more readily engaged with by shareholders. This is also where targets have been set (see Carbon Footprinting section). However, sovereign debt is a key asset class for most asset owners. In 2021 the NZAOA will develop a framework to address sovereign debt assets.

18%

AXA’s 2020 investments’ “Green share”

13%

AXA’s 2020 “Green share” benchmark

Green Share/ Contribution to the Energy transition

In addition to “temperature-type” metrics, portfolio alignment can be measured as the contribution to the energy transition considering two angles:

- › **project-led green share:** AXA is an active investor in green bonds, green buildings and green infrastructure (see Green investments section for definitions);
- › **share of green revenues** from listed holdings: the value-weighted average share of green revenues of issuers in portfolio. This metric measures – all things equal – the “level of greenness” of investments.

In 2020, AXA’s “Green Share” (value-weighted average share of revenues of issuers in portfolio), combining equities, corporate debt and sovereign debt, was **18%, vs a broad benchmark (see dashboard) of 13%**. Due to the implementation of the Taxonomy Regulation in 2022, the calculation methodology of the “Green Share” will evolve to be aligned with the eligible activities and environmental objectives, as well as with the “do no significant harm” principle and minimum safeguards, and the other requirements set forth in the Taxonomy Regulation and the delegated acts to be adopted thereunder.



“Portfolio alignment”: a macroeconomic conclusion

According to the evolving methodologies explored in this Climate report, AXA's corporate investments (equities and debt) display a “Warming Potential” which is slightly below benchmark, and decreasing, while our benchmark is also slightly decreasing. Our Sovereign debt investments, which are more concentrated, display a more pronounced gap with the benchmark thanks to our strong exposure to the EU and France. A weighted average of these two figures – which involves combining different methodologies and some double-counting of carbon emissions – produces a combined “Warming Potential” for AXA's corporate and sovereign holdings of **2.7°C**, which is significantly lower than the broad market reference of **3.2°C**, as well as projections derived from the current NDC pledges (3.2°C) and BAU scenarios (*i.e.* should the NDCs not be implemented) in excess of 4°C.

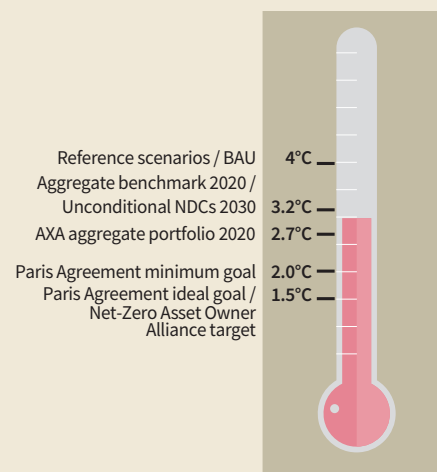
The “Warming Potential” model has improved significantly since our 2020 Climate Report, notably now incorporating Scope 3 emissions as well as self-reported emissions and forward-looking targets. The main objective of this metric, which still requires further testing, is to provide a reference point showing the extent to which today's markets reflect a course that is not on track to reach the goals set under the Paris Agreement.

Prudence must be exerted when analyzing these figures, as the underlying methodologies are still evolving. Yet, **according to these metrics, given AXA's current asset allocation and issuer selection, our investments support a rise in global temperature of almost 3°C, which is well above the Paris Agreement's objectives, and our 2050 commitment to achieve climate neutrality expressed as 1.5°C.**

Six years after the inception of the Paris Agreement, and a few months ahead of COP26, this work confirms that the world's

economies are not yet “Paris-aligned” and implementing the 2015 NDCs would not even be sufficient to achieve this target. Even the COVID-19 crisis, which has pushed the world's economy to an unprecedented halt, confined half of the world's population, and has led to a record decrease in carbon emissions in 2020, is insufficient to achieve the goals of the Paris Agreement. A fundamental reorganization is required to decouple wealth creation and welfare from carbon emissions. Failing this will derail any remaining chance of achieving the Paris Agreement, let alone the next ramped-up “Glasgow Agreement”.

In this context, investors can reorient some capital flows, for example *via* divestments (coal, oil sands) and sector reallocations (*e.g.* related to our new carbon footprint target described in the following section), as well as investing in low-carbon innovation and companies with an approved SBT commitment, which better matches our long-term targets



– in our case approximately 50% of our corporate holdings in 2021. However, asset owners remain largely dependent on a broader investment universe which evidences how economies are “trapped” into carbon intensive pathways. In a nutshell, the concept of “investment portfolio alignment” requires a far broader multi-stakeholder effort that investors alone cannot achieve. Our conviction is that tackling climate change requires a broad transition effort that investors alone cannot achieve. All sectors and companies have a responsibility to evolve while factoring social and business impacts, and it is the responsibility of investors to identify and support, for example through engagement, relevant transition strategies while factoring the risk of financial losses.

This is the purpose of the Net-Zero Asset Owner Alliance and the new Net-Zero Insurance Alliance described in the opening pages of this Climate Report.

Context Box

Academic research into “investment temperature concept”



The “Alignment Cookbook⁽¹⁾”, Institut Louis Bachelier compared alignment methods across two key indexes for 2018 and 2019 – a mainstream index, the SBF 120, and a Low Carbon index, the Euronext Low Carbon 100 index. Most temperature estimates find that the SBF 120 is not aligned with a 2°C trajectory but results are more mixed for the Euronext Low Carbon 100. This also reflects the imprecision of the different alignment assessments. For example, some temperatures are taking the form of a score, or warming range, rather than a precise figure.

(1) <https://gsf.institutlouisbachelier.org/publication/the-alignment-cookbook-a-technical-review-of-methodologies-assessing-a-portfolios-alignment-with-low-carbon-trajectories-or-temperature-goal/>

Net-Zero Asset Owner Alliance “Portfolio Alignment Workstream” and TCFD “Implied Temperature Rise” consultation

Despite the caveats outlined above, AXA believes that the “Warming Potential” (and other “investment temperature” variants), which is a forward-looking and dynamic concept, is a relevant answer to the need of portfolio alignment. It is akin to a projected carbon footprint but avoids the pitfalls of traditional carbon footprinting which favors “instant decarbonization”, itself not compatible with the need to finance transition efforts.

As a result, following extensive methodology testing since 2017, AXA decided to align its investments with the Paris Agreement, thereby committing to achieve a 1.5°C “Warming Potential” by 2050, as well as joined the Net-Zero Asset Owner Alliance (NZAOA) to promote a collective agenda.

In order for us to monitor progress and report against this 1.5°C target, the members of the NZAOA express a need to develop robust measurement methodologies. While various solutions, such as the “Warming Potential” work explored in this Climate Report, already exist, more convergence is needed.



Indeed, AXA tested four different “investment temperature” providers on a sample of 13 companies from various sectors, and the results in the table below show a wide disparity in results. This stems both from data source type and methodology assumptions differences.

Temperature comparison of various securities

Company	GICS Industry Group Name	Country	Provider 1	Provider 2	Provider 3	Provider 4
1	Consumer Discretionary	USA	NC	2°	3.1°	4°
2	Technology Hardware & Equipment	United States	>5°C	2°	1.5°	4°
3	Materials	Luxembourg	>2.7°	>6°	6°	6°
4	Insurance	France	1.5-2°C	2°	3.6°	4°
5	Pharmaceuticals	Germany	<1.5°C	2°	4.5°	2°
6	Materials	United Kingdom	>5°C	>6°	5.0°	6°
7	Transportation	United Kingdom	2-2.7°C	2°	5.3°	6°
8	Food, Beverage & Tobacco	Brazil	1.5-2°C	>6°	5.2°	4°
9	Materials	South Korea	>2.7°C	6°	5.2°	5.8°
10	Capital Goods	France	>5°C	2°	1.3°	1.5°
11	Energy	France	>5°C	>6°	4.9°	6°
12	Telecommunication Services	USA	>5°C	6°	3.1°	4°
13	Food & Staples Retailing	Australia	>5°C	>6°	2.1°	4°

Source: AXA.

A call for methodology convergence

Rather than disproving the concept of investment temperature, AXA believes that this situation calls for rapid methodology convergence. This is why AXA coordinates the NZAOA’s “Portfolio Alignment” working group and, together with NZAOA peers, we encourage methodology convergence around a set of 16 methodology principles⁽¹⁾. These include 1.5°C portfolio alignment, forward-looking approaches, a use of GHG footprinting Scopes 1, 2 and 3, considerations regarding back-testing, open data, sector biases, climate scenarios, coverage, target-setting & reporting capability, replicability, stability, “pluggability” into existing financial data systems, – this is key – resulting in an investment “temperature” KPI that can be readily used by portfolio managers. The details of these requirements are described on the NZAOA’s website⁽²⁾. In 2021, the working group plans to continue aligning with influential peers on temperature metrics, encourage data/service providers to converge around the NZAOA Methodological Principles as well as disclosure, integrate into the main NZAOA reporting protocol, amplify feedback into market consultations and more generally develop a long term strategy to advocate for the use cases of forward-looking warming metrics.



A bridge with the FSB Task Force on Climate-related Financial Disclosures (TCFD)

In addition to this work, AXA supports similar work within the Task Force on Climate-related Financial Disclosures. The TCFD, in its efforts to make recommendations for more effective climate-related reporting, is currently considering metrics asset owners and managers could disclose to convey the climate-related risks and opportunities associated with their funds, products, and investment strategies.

The TCFD has created an “Implied Temperature Rise Associated with Investments” working group, which interacts with the NZAOA via AXA’s cross-memberships of both organizations, as well as other relevant investor groups and organizations. AXA believes that this work is compatible with the practical work conducted by the NZAOA towards its members’ commitment to investment carbon neutrality. Notably, the NZAOA expressed strong support for

the concept of “Implied Temperature Rise” through a TCFD consultation⁽³⁾ designed to gather feedback on the utility of different forward-looking climate-related metrics for financial firms, which have gained interest from market participants in recent years.

The TCFD will consider these findings for its planned 2021 work on Metrics and Targets and will release broader, additional draft guidance for further market review and consideration later this year.

(1) https://www.unepfi.org/wordpress/wp-content/uploads/2020/04/AO-Alliance_Request-For-Comment-on-Methodological-Principles_FINAL.pdf

(2) <https://www.unepfi.org/wordpress/wp-content/uploads/2021/02/TCFD-consultation-AOA-response-on-alignment-metrics1-1.pdf>

(3) See NZAOA response here <https://www.unepfi.org/wordpress/wp-content/uploads/2021/02/TCFD-consultation-AOA-response-on-alignment-metrics1-1.pdf>

4.8 Risk: Climate Value-at-Risk (CVaR)

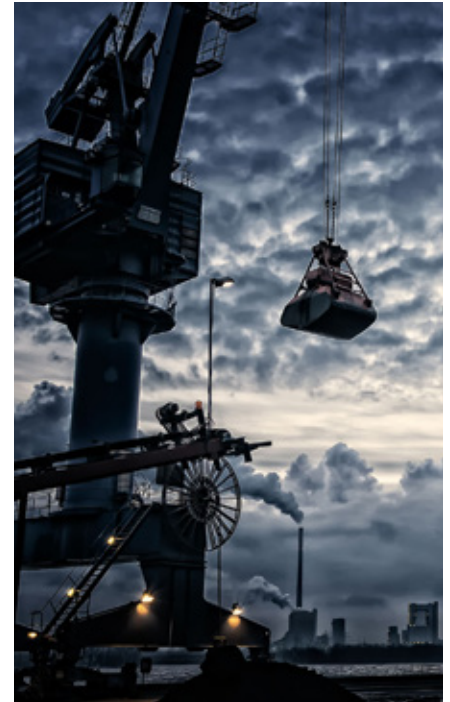
Besides the “Warming Potential” approach, which embodies the impact that our investments may have on the climate, climate risk analysis can also be undertaken from a business/investment risk perspective to assess how climate change may impact investment returns.

Here as well, AXA leverages a model developed by Carbon Delta MSCI (applicable only to corporate assets, not sovereign debt) based on the following three pillars:

- › **transition (or “regulation”) risks:** the low carbon transition, both *via* market and regulated evolutions, 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 (the NDC horizon) will cost them, relying notably on their sector/activities and on the countries where they operate. It is expressed as a proportion of revenues negatively affected by this cost;
- › **physical risks:** for each company, we identify how much potential future extreme weather events (5 “chronic” hazards – extreme heat, extreme cold, heavy

precipitation, heavy snowfall, wind gust – and 3 “acute” hazards – coastal flooding, fluvial 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. This is also expressed as a proportion of revenues negatively affected by this “cost”;

- › **green revenues:** for each company, we identify how much revenues future green technologies developments by 2030 will generate for the company, using company-level patent databases to estimate future revenue flows from green and low carbon technologies. While certainly not the only factor to be taken into account to estimate future green revenues, a statistically relevant correlation has been established between green patents and green revenues. This third KPI is expressed as a proportion of revenues that are “green”.



7.4%

AXA's 2020 “Climate Value at Risk”

Risks and opportunities are then combined and translated into a “Climate Value-at-Risk” indicator (note: the term used in our 2020 report was “Cost of Climate”). As detailed in the aggregate table below, our exploratory analysis also shows that, on aggregate, when using a 1.5°C scenario, the companies we invest in may incur revenue loss related to transition and physical costs, only partly offset by green revenues, thanks to integration of current green revenues and the results derived from forward-looking green patent investments.

According to this methodology, the loss of turnover for companies we invest in, due notably to regulation costs and extreme weather events losses, represents an aggregated cost of 7,4% of AXA's market value

investments, which can be described as a “Climate Value-at-Risk”⁽¹⁾. These losses have increased vs last year as the methodology, similarly to the “Warming Potential”, now includes scope 3 emissions.

However, this averaged figure necessarily smoothes out heterogeneous impacts amongst market players: some will likely be far more impacted than others. As a case in point, **using a 3°C scenario reduces the final CVaR, as this scenario is less demanding in terms of corporate efforts.** Although currently AXA does not leverage this complex and evolving KPI in its day to day investment decisions, this metric provides insight on the possible climate-related financial risks that may be incurred by investors should its underlying assumptions suddenly occur.

“

According to the Climate Value-at-Risk methodology, the loss of turnover from companies we invest in, due notably to regulation costs and extreme weather events losses, represents an aggregated cost of 7.4% of AXA's market value investments.

⁽¹⁾ These figures may not be compared with those disclosed in our 2020 Climate Report. Here also, methodology changes have occurred.

4.9 Carbon footprinting – new approaches and targets

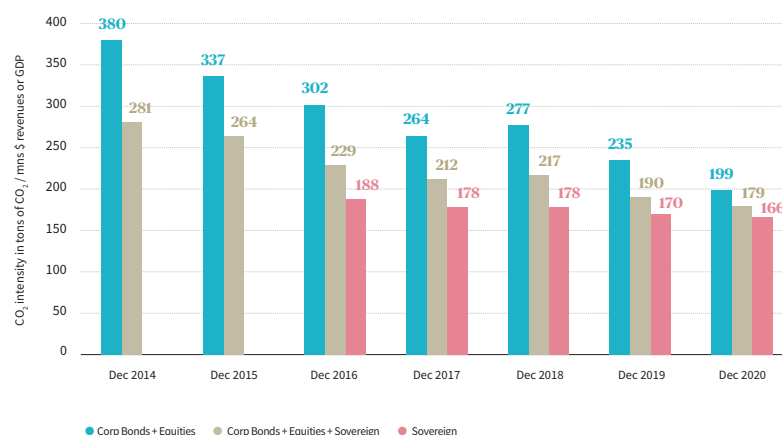
In addition to the forward-looking metrics explored above, AXA also conducts a more static snapshot year on year of its investments' carbon footprint since 2014, normalized per revenue. In 2021 AXA discloses two additional footprint metrics: normalized per Enterprise Value, and in absolute terms. This Climate Report presents all three approaches.

Carbon footprint: revenue approach

The 12/2020 analysis spans our equities, corporate debt and sovereign investments.

Since 2014, the carbon footprint of AXA's investments (equities, corporate and sovereign debt) has **decreased significantly**. Considering an exhaustive scope (corporate and sovereign investments), it has decreased by 36% between 2014 and 2020. Focusing on our corporate investments alone, the carbon footprint has decreased from 235 tons CO₂/m US\$ revenues to 199 tons/m US\$ revenues between 2019 and 2020 (-15%). This trend is largely due to the fossil fuel divestment program first initiated by AXA in 2015 and subsequently strengthened in 2017 and 2019 (see next section "Divestments"). Our data (see aggregate table below) also shows a **significantly lower carbon intensity compared to our benchmarks**, on all three asset classes, which is the result of less carbon-intensive sector allocations.

AXA's investments' CO₂ footprint⁽¹⁾



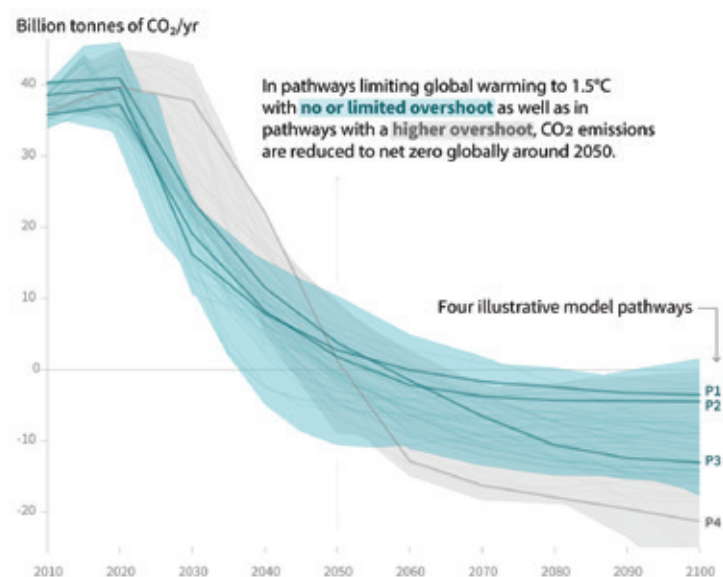
Sources: Trucost S&P, Beyond Ratings, AXA IM.

Carbon footprint: Enterprise Value approach and connection to IPCC scenarios and NZAOA target

AXA committed to establish an investment-related "intermediate target" upon joining the Net-Zero Asset Owner Alliance in 2019. Together with NZAOA peers, we supported the Alliance's "Target-Setting Protocol"⁽²⁾ which frames minimum requirements in terms of ambition and asset classes, published in October 2020.

The Alliance assessed the IPCC's 1.5°C pathways report⁽³⁾ (note the more recent IEA report was not yet published) and identified an asset class-level emissions reduction target range of -16% to -29% by 2025. Indeed the Alliance analyzed all scenarios and recommended use of scenarios with limited "overshoot" of global temperature rise of 1.5°C, i.e. with limited necessary removal of atmospheric carbon (such as CCS) to bring the temperature back to below 1.5°C. These sets of scenarios are usually described by their representative pathways P1, P2 and P3 (P4 discarded for betting too heavily on CCS). This is considered "best 1.5°C available science" (prior to the publication of the 2021 IEA report).

Global total net CO₂ emissions



Source: <https://www.ipcc.ch/sr15/chapter/spm/>

(1) CO₂ intensity coverage in 2020: Corporate bonds & Equities -74,32%; Corporate bonds, Equities & Sovereign -81,81%; Sovereign bonds -87,94%.

(2) <https://www.unepfi.org/net-zero-alliance/resources/alliance-2025-target-setting-protocol/>

(3) <https://www.ipcc.ch/sr15/chapter/spm/>

Even under the more “permissive” P3 scenario (allowing significant emissions to be compensated by significant carbon capture), CO₂ emissions must decrease by 91% between 2010 and 2050, primary energy use from oil by 81%, while the share of renewables must increase to 63%, and nuclear power must grow by 501%.

What does this mean for AXA’s investment strategy? In December 2020, as part of this work, AXA announced its commitment to reduce the carbon footprint of its General Accounts assets (Corporate debt & equity excl. Emerging market issuers and entities⁽¹⁾) by **20% between 2019 and 2025**, using the Protocol’s preferred approach, based on Enterprise Value (not revenue). While a carbon intensity approach expressed in terms of revenues connects well with the

“physical” processes underlying carbon emissions, NZAOA members believe that the EV approach better represents the role of investors in corporate valuation. This -20% target is in line with the climate scenarios used by the NZAOA’s protocol that are compatible with 1.5°C pathways.

Considering the relatively low carbon intensity of AXA’s portfolios compared to our investment universe, and taking into account constraints related to limited debt assets turnover within the 6-year timeframe, it is a significant effort that has started to impact our investment decisions.

Meeting this goal will not only require new, lower-carbon investments but progress by the companies already in the portfolio, in terms of tangible, quantifiable measures.

Driving portfolios on the carbon neutrality trajectory can be achieved through reallocation towards low carbon activities but also through continued support to companies in carbon-intensive sectors under the condition that they commit credibly to shifting their business model.

With numerous opportunities to engage with them every year (see Shareholder engagement section), we encourage them to set increasingly precise targets and measurable indicators of the speed of decarbonization. **The effectiveness of our policy will also depend on our ability to help these companies transition through new solutions and innovative financial products, such as transition bonds.**



Carbon footprint: absolute emissions

Finally, because ultimately climate change is not related to carbon intensity but to the absolute level of carbon emissions emitted into the atmosphere every year, AXA decided to publish the weighted share of carbon emissions emitted by the companies held in our General Accounts portfolios (Corporate debt and equities 12/2020): 7.8m tons CO₂, slightly decreased vs 12/2019 (8.2m tons CO₂). For the sake of comparing direct (operations) and indirect (investments) emissions, as expected, this 7.8m tons CO₂ figure far exceeds AXA’s emissions related to its power consumption (buildings), car fleet and business travel (84.647 tons CO₂ in 2020). See section on Direct environmental footprint management. AXA has significant influence over its direct emissions, but it is dependent on a carbon-intensive investment universe where the premiums received by our policyholders have to be invested.



⁽¹⁾ For the time being, Financial issuers are not included in data released in the Climate Report due to data use rights.

4.10 Full dashboard

	AXA 12/2020	AXA 12/2019	AXA 12/2018	Benchmark 12/2020	Benchmark 12/2019
Warming potential (°C)	2.70	2.73	2.85	3.21	3.24
Physical Risks cost (CVaR) Average Scenario	-2.7	-2.7	-2.6	-2.4	-2.5
Transition cost (CVaR) Scenario 1.5°C	-8.2	-8.9	-10.2	-9.7	-10.8
Green revenues (CVaR) Scenario 1.5°C	3.4	3.7	4.5	3.7	3.9
Climate Value at Risk (% of investment value) Scenario 1.5°C	-7.4	-7.8	-8.4	-8.5	-9.4
Carbon Intensity (tCO₂/\$m revenue/GDP)	179	181	195	254	261
Carbon Intensity (tCO₂/€m EV)	90	94	NA	NA	NA
Absolute Carbon Emission (tCO₂)	7,757,457	8,244,957	NA	NA	NA
Green Share	18.1%	17.8%	17.6%	13.1%	12.9%

Benchmark: MSCI World ACWI (equities), ICE BofAML Global Broad Market corporate (corporate debt), JPM GBI Global (sovereign debt).

/// A climate-related investment strategy at the crossroads

AXA's investment strategy fully supports our climate commitments. At its heart sits a conviction that the integration of ESG and climate factors will impact long-term investment performance by offering an enhanced understanding of risk drivers. This conviction is derived from academic research and empirical market data. In addition, our investment teams support the concept of a "double materiality" whereby we do not only want to protect our investments, but also have a positive impact on climate change by encouraging transition models, because this serves our longer-term purpose of "acting for human progress by protecting what matters".

This strategy is materialized by the extra efforts and commitments analyzed in this report: a best in class approach for equity and corporate debt assets, a drive to support green infrastructures, green buildings, green and transition bonds through quantified targets, tracked internally every quarter and clearly seeks to favor those investments or companies with identified and ambitious



Pascal Christory,
Group Chief Investment Officer

science based targets (SBT) enabling concrete views between current carbon emissions and a more forward looking "temperature" matrix. We also keep an eye on the proportion of emitters in our investments that have SBT-approved climate commitments. It is approximately 50%, which is encouraging.

However, our annual reinvestment flows far exceed the availability of investment-grade green investment opportunities, despite a growing offer and our challenge is to select the most pertinent non-green investments which will still keep us in line with our targets, but we cannot "put the cart before the horse". This green/brown rebalancing is the journey we are treading to decarbonize our portfolio.

179

AXA's investments' carbon intensity in tCO₂/\$m revenue/GDP

90

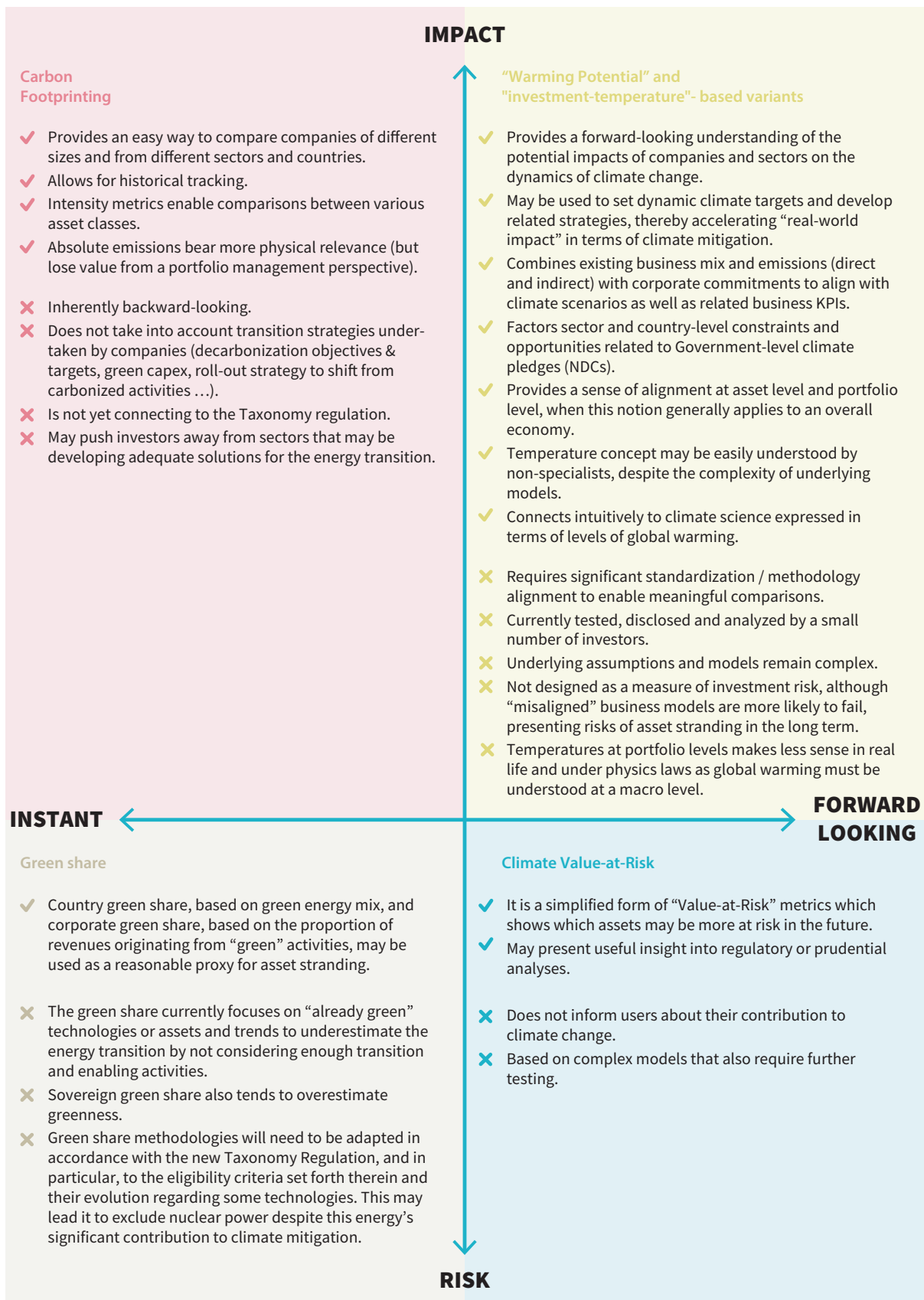
AXA's investments' carbon intensity in tCO₂/€m EV

7.8 Mt

AXA's investments' "absolute" carbon emission (tCO₂)

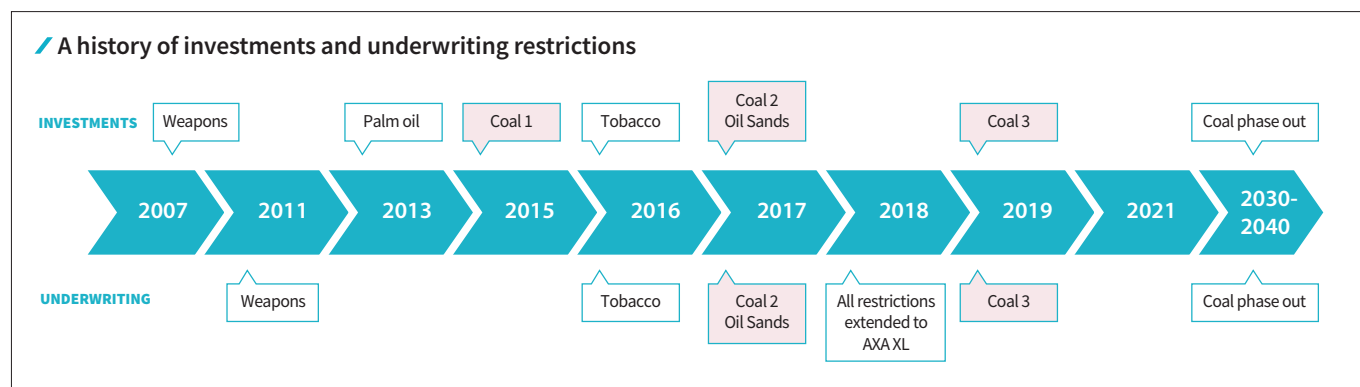
4.11 Climate metrics: conclusion

The use of different metrics shines a different light on climate challenges, notably via a “risk vs impact” and a “forward-looking vs instant” twin axis.



4.12 Exclusions: “stranded assets” risk mitigation

As described in earlier sections, AXA uses various tools to encourage transition strategies. These tools include investments and underwriting restrictions. They are based on strict and precise criteria and implemented thoroughly, with a gradual phase-in approach.



€7.5bn

Total assets divested
via sector policies

0%

Coal in our business by 2030
(EU / OECD) and 2040
(rest of the world)

Divestments

AXA's Responsible Investment strategy includes several sector-level divestments. Indeed, certain activities and products are deemed to be inconsistent with our climate strategy, broader sustainability goals and Purpose (“Act for Human Progress by Protecting what matters”). In this context, AXA has developed specific “sector guidelines” which apply both to our investments and insurance operations. These currently include the following sectors:

- › coal and oil sands (2015, 2017, 2019), developed below;
- › “controversial weapons” manufacturers (2007) that are banned by international conventions (antipersonnel landmines, cluster munitions/cluster bombs chemical, biological and depleted uranium weapons, nuclear weapons proliferation);
- › tobacco manufacturers (2016), whose products conflict with our role as one of the world's largest health insurers;

- › palm oil producers (2013) which do not adhere to this industry's best sustainability practices (notably regarding deforestation, land and labor rights);
- › soft commodity derivatives (2013) which may be responsible for inflating the price of basic food commodities.

In total, AXA's divestments initiated in 2007 (including new coal-related efforts in 2019) represent approximately €7.5bn of assets impacted by the policies (coal, tobacco, oil sands, controversial weapons and palm oil, in decreasing order of magnitude). In March 2021, the remaining exposure (corporate debt run-off) amounted to €1.9bn [newly disclosed KPI], with the biggest exposures related to coal and tobacco. The assets impacted by these restrictions are gradually phased out as corporate debt maturities expire. We also hold residual exposures *via* large equities, investment funds or credit indices which remain necessary tools in our investment strategy.

A focus on coal and oil sands

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. Coal-based power generation is seen as the riskiest industry in terms of such “asset stranding”.

AXA acted early in May 2015 with a pioneering coal divestment policy (“coal 1” in above

diagram), later strengthened in 2017 with underwriting restrictions (“coal 2”) and extended these progressively to our new entity AXA XL in 2018. In November 2019, we strengthened this approach further and complemented it with a long-term perspective (“coal 3”). AXA now bans power generation investments, for General Accounts and in Unit-Linked assets in fully controlled mandates, in the following companies:

- › power generation companies with coal share of power production (energy mix) over 30% and/or coal “expansion plans”

producing more than 300 MW (previously: 3000MW) and/or over 10 GW of coal-based power installed capacity;

- › mining companies with coal share of revenues over 30% and/or with annual coal production over 20m tons and/or developing new coal mines;
- › certain coal industry partners, defined as manufacturers (e.g. equipment suppliers) and infrastructure players (e.g. port terminals, dedicated railways) developing significant new coal assets.

In addition to the above restrictions, AXA is now committed to a long-term “exit” strategy reducing its exposure (General Accounts and Unit-Linked assets in fully controlled mandates) to the thermal coal industry to zero by 2030 in the European Union and OECD countries, and by 2040 in the rest of the world, as suggested by the main climate scenarios (such as the IEA “Beyond 2°C” scenario). This approach is applied both to our investments and underwriting (see below) activity. Because oil sands are also a particularly carbon-intensive form of energy, AXA also divested from the main oil sands producers and from the main associated pipelines players (same perimeter).

Underwriting restrictions

It would be inconsistent to commercially support industries that the Group has divested from. Therefore, AXA also restricts insurance coverage for coal and oil sands-related assets (as well as for the other industries mentioned in the previous section, and arctic drilling). Since 2017, the underwriting restrictions ban Property and Construction covers for coal mines, coal plants, oil sands extraction sites or associated pipeline. In November 2019, AXA significantly strengthened these restrictions by adding the following coal-related restrictions at client-level, mirroring divestment criteria:

- › any new and existing underwriting business, in respect of a Line of Business (see exemptions) is banned if the client:
 - is developing new coal mines or more than 300 MW of new coal-based power capacity, or
 - derives more than 30% of its turnover from coal, or
 - is a power company with over 30% of its energy mix based on coal, or
 - is a mining company producing more than 20MT/year of coal;
- › a long-term target to achieve a “0%” exposure to coal business by 2030 in the OECD, and 2040 in the rest of the world, is also set;
- › a case by case referral process is used to ban or authorize business with Coal industry partners (such as equipment suppliers, port terminals, dedicated railways);
- › property and Construction covers are also banned for Oil & Gas extraction in the Arctic region;

- › the above rules do not apply to Employee Benefits (health, savings, protection) or to Treaty Reinsurance. The details of these policies are published online⁽¹⁾;
- › new business is banned from policy inception date (January 2020);
- › for existing business, a two-year grace period is implemented upon policy inception, which is key to enable clients and brokers to reorganize their risk placement, but also to encourage clients to reduce their exposure to coal within this timeframe. In the case of clients breaching our coal development threshold (300 MW), this threshold is reduced to one year, in effect allowing for only one renewal;
- › more detailed internal rules apply for complex cases such as “mixed risks” packages, etc.

We believe AXA to be the first large insurer to have implemented such restrictions, which represent a significant commercial commitment. The database used since 2017 is the “Global Coal Exit List”⁽²⁾ whose transparency (the list is public) enables players to access their own data and correct eventual inaccuracies.

In addition, for companies whose coal business is below our coal thresholds but will be impacted by our 2030/2040 “coal exit” commitment, a series of letters to their management has been developed and sent in 2021 by AXA IM’s shareholder engagement team (see shareholder engagement section).



Encouragement for climate leadership can come in many forms, from employees, shareholders, clients, business partners, NGOs, friends... In 2020 AXA received a heartening series of drawings from Australian schoolchildren praising our coal policy, reminding us that **they are the next generation and they cannot be failed.**

“**Dear AXA, I want to give you a huge thank you for stopping them make a new coal mine and thank you for making our planet not sick you are a hero to the earth” Australian grade four schoolchild, 2020.**

(1) https://www-axa-com.cdn.axa-contento-118412.eu/www-axa-com/7c51bab4-4266-42b6-aa8a-a6b209ee6e33_2019ClimateStrategy.pdf
 (2) <https://coalexit.org>

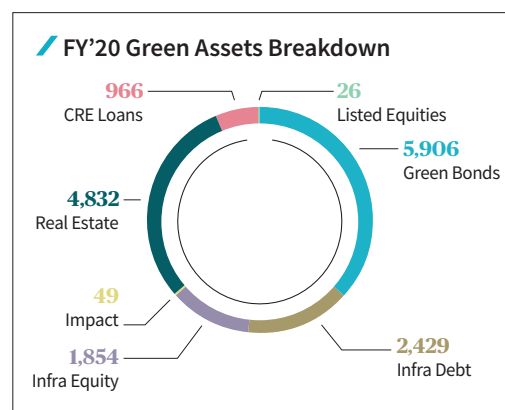
4.13 Green Investments

In addition to “temperature” targets and divestments, green investments encourage various sectors to ramp up their climate strategy. In November 2019, AXA committed to invest €24bn in green investments by 2023. This target was increased to €25bn to include AXA SA’s inaugural €1bn Green Bond issuance (see box). Green investments are defined as green bonds, infrastructure debt equity (mostly in the renewable and clean transport area), impact investments, and energy-optimized real estate loans. In December 2020, AXA’s green investments reached €16.1bn (€11.7bn end of 2019).

To support our green investment strategy, AXA has developed an internal framework to define “green” investments based on external labels, certifications and environmental standards as appropriate. To qualify as a green investment, AXA applies the following environmental standards to each of the asset classes described below:

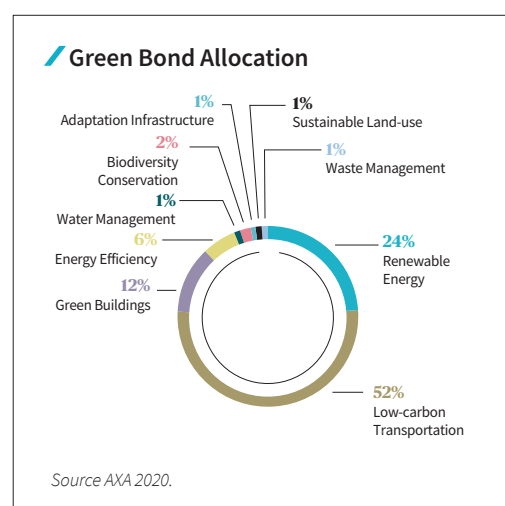
- › green bonds: the green bonds we invest in are externally labeled, notably by the Climate Bonds Initiative⁽¹⁾ as well as ratings agencies which confirm that definitions and use of proceeds are respected. However, AXA adds an additional internal review to confirm the actual “greenness” of the bond using more stringent criteria. See examples below;
- › impact: impact investments classified as green are those in our Impact Funds that target climate impacts with clearly defined climate KPIs (for examples of impact KPIs reported see “Impact Investing” below);
- › real estate: for property assets, our strict definition is limited to assets with a high level of environmental certifications (minimum level BREEAM “Excellent” or LEED “Gold”) and a minimum Energy Performance Certificate (EPC) rating of “B”. See examples below;
- › commercial real estate: 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 BREEAM Excellent or LEED Gold). Here, we do not reference the EPC as it is not influenced by the debt holder.

AXA and the IFC, a member of the World Bank Group focused on the private sector, launched a US\$500m partnership in 2017, supporting an infrastructure fund that will notably finance green infrastructures in emerging countries, including renewable energy, water, green transport and telecoms. At the end of 2020, mandatory loans amount to US\$404m, of which US\$162m has already been financed (at the end of 2019 mandatory loans amounted to US\$390m, of which US\$120m had already been financed). Coal and oil-sands related projects are explicitly excluded.



A focus on Green Bonds

At end of 2020, AXA had invested a total of €5.90bn in green bonds. In 2020, AXA invested €2.2bn in green bonds, channeling the largest share into the low-carbon transportation sector. This is directly related to the issuance of the Société du Grand Paris (SGP) Green Bond. This initiative finances a new automated metro network, 200 km of new lines, 68 stations & 7 technical centers. The issuer’s sole public mandate is to build this new automated metro network (the Grand Paris Express) and to contribute to the modernization of the existing transport network within the Greater Paris area. We consider these low carbon transportation projects are aligned with climate change mitigation and other social objectives. Thanks to this project, SGP expects 27m tons of CO₂ emissions saved by 2050. In addition, 15,000 direct jobs are expected per year during the construction period and over 115,000 jobs creation from the growth generated by the network. The energy sector represents the next largest share of global emissions reduction potential, notably through efficiency in the power sector (e.g. smart grids) and a shift to a greater share of low carbon energy sources. Investments in this sector in both developed and developing countries by 2030 will be essential to reach climate objectives.



(1) www.climatebonds.net

Examples of Green Bonds investments include:

- › **Elia Group** – With the issuance of its debut green bond of €750m in May 2020, Eurogrid GmbH, the parent company of the German transmission system operator 50 hertz, will finance the further grid expansion necessary for the energy transition on the grid connections Ostwind 1 and 2 of the offshore wind farms northeast of Rügen with a capacity of around 1.5 gigawatts. The Ostwind 1 and 2 projects are in line with the EU Action Plan on Climate Change. The EU's aim is to increase the number of households and businesses that can be supplied with electricity produced by wind energy, thereby avoiding CO₂ emissions;
- › **Visa** – The leading global payments technology company, successfully launched its inaugural green bond offering in August 2020, totaling US\$500m. This initiative, believed to be the first by a digital payments network, was launched to help Visa accelerate the transformation of their infrastructure and operations, all the while supporting the United Nations Sustainable Development Goals. The proceeds of the green bond will be used to fund projects including: upgrades to buildings, energy efficiency improvements, expanded usage of renewable energy sources, water efficiency projects, employee commuter programs, and research and initiatives focused on sustainable consumer behaviors;
- › **SNCF** – In October 2016, SNCF Réseau floated €900m in green bonds, the first ever issued by a rail infrastructure manager. It is now one of the leading issuers in France and in Europe with the market's highest standards – the Green Bond Principles and the Climate Bond Initiative. SNCF Réseau green bonds came to €5.7bn – or 11% of its total debt – on December 31, 2019. These are a means to help fund infrastructure renewal and modernization projects and meet its targets of reducing energy consumption by 20% and CO₂ emissions by 25% between 2015 and 2025.

A focus on Real Assets

Contributing to the €25bn AXA Green Investment initiative, real assets represent a significant portion of this overall objective. In order to define assets as “Green”, specific criteria must be met for an individual asset as set out above. Examples of such Group investments include:

- › **Real Estate** – AXA IM Real Assets completed the development of 22 Bishopsgate, a 62-storey, 278-metre skyscraper in the City of London. The flagship development was completed with an EPC rating of A+ and obtained BREEAM Excellent and WiredScore Platinum labels. In operations, the building uses 100% of electricity generated from renewable sources and offsets 100% of natural gas usage. Adding to the positive

environmental impact of the asset, 98% of construction waste was diverted from landfill. 10% of floor space is dedicated to tenant amenity and wellbeing;

- › **Forest** – AXA IM Real Assets acquired a PEFC certified forest in Finland spanning over 7,000 hectares of land. In 2020, the forest stored a total of 7.6m tons CO₂. Considering the change in soil carbon storage, natural forest growth, and harvested volume of timber, the total annual forest carbon balance was around 6,200 tCO₂ negative. Considering the carbon balance of the forests and the carbon stored in wood products, the total annual carbon impact is 9,700 tCO₂ “positive”. This considers the emissions from harvest, transportation and wood processing operations;

- › **Infrastructure** – AXA IM Real Assets completed the acquisition of a 49% share in a European rolling stock company. The company, headquartered in Austria, leases its growing fleet of over 150 siemens electric Vectron locomotives to rail operators across central Europe. Aligned with EU policy of transferring freight from road to rail and energy-source from fossil fuels to a decarbonizing electricity grid, each locomotive can pull a train carrying the equivalent of over 70 heavy vehicles. These locomotives deliver an 80% reduction in carbon emissions *versus* traditional road transportation vehicles.

Context Box



AXA SA's first Green Bond issuance⁽¹⁾

Besides investing in green bonds, AXA also continues to set new standards for climate finance with the Group's newly established Sustainability Bond Framework and the successful issuance by AXA SA of its first green bonds in April 2021. With this €1bn issuance, the Group contributes to the ongoing growth of this asset class and further increases our Green investment commitment to €25bn by 2023.

An amount equivalent to the proceeds of the green bond issuance will be exclusively used to finance or re-finance eligible Green Projects in the following eligible Green Categories: Green Buildings, Renewable Energy, Clean Transportation, Energy Efficiency and Natural Resources/ Sustainable Forestry, as set out and defined in AXA Group's Sustainability Bond Framework. Sustainalytics has provided a second party opinion on AXA Group's Sustainability Bond Framework, available on www.axa.com. In line with the green bond market standards (ICMA's Green Bond Principles), AXA will publish an allocation and impact report annually to track the financing of Green Projects and their associated positive environmental impacts.



(1) See <https://www.axa.com/en/press/press-releases/axa-announced-the-successful-placement-of-Euro-1-billion-of-subordinated-green-bonds-due-2041>

4.14 Transition Bonds



Ultimately the global economy is so dependent on nature – every good produced and sold – that it is rather surprising the nature-finance nexus has remained a niche topic for so long. In June 2021, we are finally seeing “biodiversity finance” becoming mainstream thanks to the launch of the TNFD, endorsed by the G7. Nature truly works for us, let’s not destroy it.

Green or climate bonds are a relatively new type of financial instrument intended to fund projects with climate or environmental added value. Interest in such bonds has soared as companies and investors become increasingly engaged in building diverse portfolios with positive environmental impacts. However, supporting carbon intensive players that are actively decarbonizing but whose main activities have not yet reached the “greenness” that makes these efforts eligible to green

bonds requires new instruments. This is why AXA developed the concept of “transition bonds” in 2019.

The bonds will 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 the International Capital Market Association (ICMA) to work on this new asset class, and **the first €100m transition bonds were issued by Crédit Agricole CIB in November 2019**, and subscribe by AXA IM on behalf of the Group. In this transaction, the use of proceeds from the issuance are used in the following ways:

- › **electricity production:** loans made to an electric utility company in an Asian emerging country which is currently dependent on coal and oil for power generation. These loans finance the development of gas fired power stations. Current Combined Cycle Gas Turbine technologies have an average

carbon intensity of 353 tCO₂/kWh, 60% lower than the average coal production unit;

- › **marine transport:** loans made to shipping companies to switch from heavy marine diesel oil to liquid natural gas propulsion (25% emissions reduction), which is the most efficient improvement currently available at scale to reduce emissions for large scale commercial shipping. Shipping is currently one of the few activities where transition technologies can be implemented on a large-scale;
- › **industrial resource efficiency:** loans made to a South American industrial company implementing energy efficiency and wastewater treatment with expected reduction in energy intensity by 44% between now and 2040.

In 2020, AXA IM invested on behalf of the Group another €100m in transition bonds issued by BPCE, contributing to the financing of energy transition assets. These Transition Bonds’ proceeds will refinance Natixis’ project and/or corporate loans, which have high emissions reduction potential and contribute to a low-carbon economy, from relevant sectors such as, potentially, transport, power, midstream gas, mining and metals, and building materials.

4.15 Biodiversity

Biodiversity loss endangers “ecosystemic services”, which threatens both society and businesses that depend on them, and in turn investors and insurers that rely on a well-functioning economy. Addressing biodiversity-related risks and opportunities is a natural extension of AXA’s climate efforts. Indeed, climate change is severely compounding the destruction of ecosystems around the world, adding pressures related to drought, ocean acidification, more intense natural catastrophes, etc. Key reports confirm the connection with the finance industry, such as the Dasgupta Review⁽¹⁾, or the DNB report “Indebted to Nature”⁽²⁾.

One may wonder why we connect our business to biodiversity loss. But ultimately the global economy is so dependent on nature – every good produced and sold – that it is in fact rather surprising the nature-finance nexus has remained a niche topic for so long. We raised this issue in our 2019 “Into the Wild” report, which called for the creation of a Taskforce on Nature-related Financial Disclosures. However, in June 2021, we are seeing “biodiversity finance” finally becoming mainstream thanks to the launch of the TNFD, endorsed by the G7. The main task of the TNFD will be to develop a framework enabling financial institutions to identify economic activities that have a material impact on biodiversity. This will allow investors to further incorporate nature conservation objectives into their asset allocation strategies, helping to reorient financial flows away from “nature-negative” towards “nature-



Ulrike Decoene, Group Chief Communications, Brand and Sustainability Officer

positive” outcomes. 2021 will be an important year for biodiversity also thanks to the upcoming COP15 on biodiversity in Kunming, China this fall. We hope the conference will put biodiversity at the top of the global political agenda and lay the ground for closer public-private cooperation on nature preservation. Nature truly works for us, let’s not destroy it.

(1) <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

(2) <https://www.dnb.nl/media/4c3fqawd/indebted-to-nature.pdf>

AXA's biodiversity strategy⁽¹⁾ currently includes the following developments:

- › AXA committed to several public Pledges since 2018: Act4Nature, “Business for Nature” and the “Finance for Biodiversity” initiative;
- › in 2019, during G7 Ministerial meetings, AXA launched with the WWF the report “Into the Wild – Integrating nature into investment strategies” designed to raise awareness on biodiversity loss and its economic and financial impacts. It presents several recommendations, including the launch of a “TCFD-like” broad-based task force to promote the protection and restoration of biodiversity, as well as the creation of biodiversity risk metrics adapted to investors;
- › AXA launched a US\$175m “Impact Investment” fund focused on biodiversity protection. In 2020 AXA decided to double this commitment to US\$350m (see Impact Investment section);
- › AXA helped create the “Informal Working Group” (IWG) dedicated to crafting the TNFD⁽²⁾ in 2021. The IWG features over 60 members which include insurers, corporates, asset managers, commercial, development and central banks as well as governments. AXA leads its “Governance” working group;
- › AXA initiated a three-year partnership (2020-2023) with the WWF in order to develop and strengthen its biodiversity strategy. The partnership covers: crafting an industry-led task force to develop a biodiversity risk-related guidelines for the financial services industry (TNFD), developing biodiversity risk and impact metrics, and supporting AXA's Impact Investing work and relevant policy development;
- › AXA IM launched a tender with three peers asset management peers (BNP Paribas AM, Mirova, Sycomore) which led to the identification of the most promising biodiversity risks data provider. The four partners have committed to fund this organization for three years (2020-2023) in order to develop adequate risk and impact metrics;
- › AXA initiated policy developments to address issues related to deforestation and the protection of Natural World Heritage Sites,

building on and extending our 2013 Palm Oil Policy;

- › AXA is a key investor into forestry assets and has a long history of managing forests on behalf of its clients, with the first investments dating back to the end of the 19th century, and today fully committed to responsible forestry, for example by committing to limit clear fell operations to 4 ha, or devoting a proportion of the forests to biodiversity protection and research rather than timber production⁽³⁾;
- › the AXA Research Fund actively supports academic research on biodiversity risks;
- › AXA XL actively contributes to the Ocean Risk and Resilience Action Alliance (ORRAA), an alliance focused on developing risk management strategies using the experience and expertise of the insurance and broader finance community, to protect ocean biodiversity.

Finally, AXA has called for the adoption of a robust international agreement to be reached during CBD COP15 in Kunming, China, at the end of 2021 (see section 2).

4.16 Impact Investing


AXA was one of the first institutional investors to engage proactively in impact investing, an investment strategy that aims to generate objectively measurable and intentional environmental and social impacts alongside financial returns, both integrated into investment management incentives.

In 2013, AXA committed €200m to launch its first impact fund focusing on Financial Inclusion, Access to Healthcare and Education. In 2016 AXA scaled up its contributions by allocating a further €150m to set up Impact Fund 2, focusing on environmental and social impact. In 2019, AXA announced the launch of its third Impact Investment Fund with US\$175m, dedicated to Biodiversity & Climate change (see box). In 2020, AXA further scaled up its allocation to impact investing by committing an additional US\$175m to the AXA Impact Fund: Climate & Biodiversity and US\$50m to a fund promoting financial inclusion and access to healthcare for underserved beneficiaries in Low and Middle Income countries. This additional allocation brings AXA's total commitment to impact investing to approximately €700m since 2013.



















The AXA Impact Funds 1 & 2, in their objectives and outcomes, are “fund of funds” investment vehicles that demonstrate the tangible role AXA and its entities are playing in the achievement of the UN Sustainable Development Goals (SDGs)⁽⁴⁾ through the

allocation of much needed capital. Our preliminary review of our impact funds SDG alignment yielded positive results, demonstrating that Impact Funds 1 and 2 are providing capital to businesses that directly address the SDGs highlighted below.

Context Box



/ Deep and credible alignment to the UN SDGs

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL-BEING 	4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION 
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND 	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	 SUSTAINABLE DEVELOPMENT GOALS

(1) See full details here <https://www.axa.com/en/about-us/axa-and-biodiversity#tab=axa-and-biodiversity-strategy>

(2) <https://tnfd.info/>

(3) See details here <https://www.axa.com/en/about-us/axa-and-biodiversity#tab=axa-and-forests>.

(4) See also AXA's Annual Report for a correlation of UN SDGs with our broader sustainability strategy.

Impact Measurement

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

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

Theme	KPI	Performance
Access to Finance/ Insurance	Underserved people reached	108.1m
	% Female clients	78%
	% Rural clients	70%
Transforming Underserved Economies	Underserved people reached	3.5m
Education	Number of schools	2,083
	Number of students	3.7m
Climate Change	CO ₂ emissions avoided (in tons)	63.6m
Health	Healthcare Facilities in underserved locations	56
	Number of sanitation centers	3,145
	Number of medical products (drugs, vaccines, preventatives, diagnostics and other related technologies) for global health (regulatory approval)	12

Focus on AXA Impact Fund: Climate & Biodiversity



Thomas Buberl at 2019 G7 meeting

The AXA Impact Fund: Climate & Biodiversity was launched in May 2019 during the G7 Environment ministerial meetings with a goal 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. In 2020, AXA allocated additional capital to the fund doubling its size to US\$350m. The Fund is making good on its promise to fund credible, investable solutions aiming at having a positive sustainable impact.

Examples include:

Investment	Activity	Expected impact/Illustrated investments
Komaza	A microforestry-to-wood products company with ambitions to become the largest sustainable forestry company in Africa. Our investment will contribute to reforestation of degraded lands; mitigate climate change using trees as a natural carbon sequestration solution; and build climate-resilience, through aligning the financial interest of local communities with conservation.	Impact targets: <ul style="list-style-type: none"> 37,000 hectares under improved management; 17.5m tons of Carbon Emissions Sequestered; 50,000 farmers with improved income.
Forest Carbon Indonesia	Project developer specialized in the conservation and restoration of degraded tropical forests, peatland and wetland ecosystems in Indonesia, Malaysia and Cambodia. The company has operated for more than ten years with its most notable project to date being the Sumatra Merang Peatland Project in Indonesia. This project led to the restoration of over 22,000 hectares of peatland forest, the delivery of close to 7m tons of CO ₂ emissions reduction (as evidenced by the generation and sale of verified voluntary carbon credits), and the strengthening and conservation of over 20 species.	Impact targets: <ul style="list-style-type: none"> 74,000 hectares of peatland, mangrove and tropical forests conserved/restored; 26m tons of CO₂ emissions reductions; 22m verified carbon credits generated; and a minimum of 10 IUCN Red List endangered species protected, including the Bornean Orangutan, Proboscis Monkey, Sumatran Tiger, and the Irrawaddy Dolphin.
Sanergy	Sanergy was founded in 2011 with the objective of improving waste management systems in Kenya, Sanergy adopts a circular economy approach, collecting and transforming sanitation and organic waste and into sustainable, environmentally-aligned products such as insect protein for animal feed, organic fertilizer, and biomass briquettes.	Impact targets: <ul style="list-style-type: none"> 1.2m tons of waste processed; 50,000 tons of bio-fertilizer produced.

4.17 Shareholder engagement & voting

As a shareholder and bondholder, AXA has the possibility to engage with the management of companies in which it invests in order to help catalyze positive change on certain issues (such as climate change, health, governance, market practices, etc.). These engagement activities are carried out either directly by AXA or by AXA IM on behalf of AXA and third-party clients. AXA IM holds constructive and challenging discussions directly with investee companies, and as part of a coalition of investors, engaging with companies in key sectors.

Our key climate engagement objectives are shaped by the TCFD framework, which has established itself as the de facto reporting framework on this issue. Alongside establishing public support for the TCFD, we encouraged 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



Coalitions

AXA has also joined several shareholder coalitions, notably:

- › Climate Action 100+, a five-year investor initiative to engage with the world’s largest corporate greenhouse gas emitters to curb emissions, strengthen climate-related financial disclosures and improve governance on climate change. AXA is the lead investor on several companies in the Airlines and Automotive industries;
- › the “Plastic Solutions Investor Alliance”, an International engagement coalition on plastic packaging pollution, challenging several companies in the Food & Beverage and retail sectors to promote sound management practices reducing risks related to plastic waste;
- › the UN PRI ESG Engagement Advisory Committee, providing strategic direction and feedback on themes for future collaborative engagements;
- › the UN PRI’s Advisory Committee on Credit Ratings (“ESG integration in credit”), aiming to enhance the transparent and systematic integration of ESG factors in credit risk analysis;
- › various other initiatives related to the TCFD guidelines, arctic drilling, palm oil, the automotive industry, etc.



Engagement governance

Group-level governance

As described under the “Governance” section, AXA’s Engagement & Monitoring working group reviews issuers from a pure ESG perspective, and it can decide on specific follow-up actions, such as requests for engagement. AXA’s Credit Research Team oversees AXA’s credit portfolio and assigns ESG-integrated Internal Credit Ratings to issuers in the portfolio (see “ESG integration” section). As part of its rating process, AXA’s Credit Research Team conducts regular one-on-one interviews with the top management

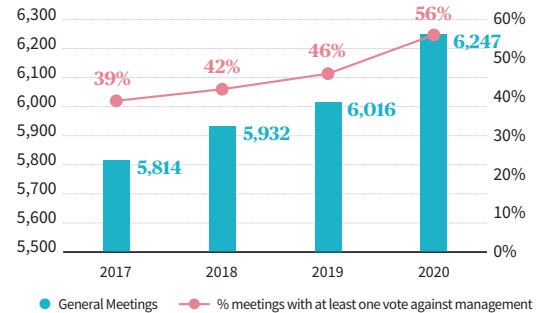
of the issuers in which AXA has its largest investment exposure. These interviews give AXA’s Credit Research Team the opportunity to review and discuss issuers’ strategy, including in ESG, on a non-public basis.

Asset Manager-level initiatives

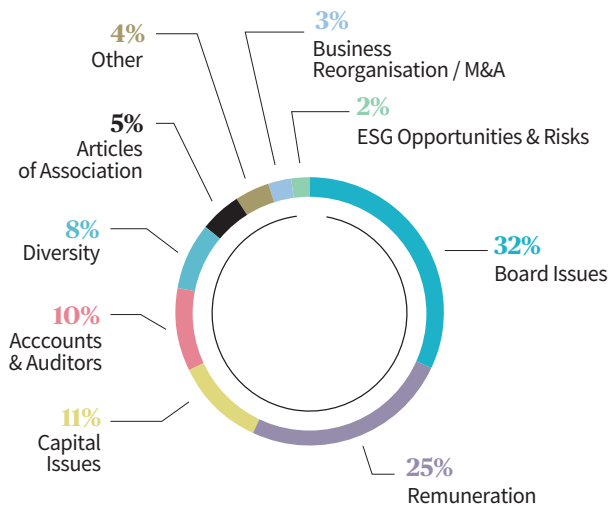
AXA IM’s voting & engagement initiatives are described in its annual “Active Ownership and Stewardship” Report⁽¹⁾. Below is a snapshot of voting & engagement initiatives undertaken in 2020.

Voting Trend

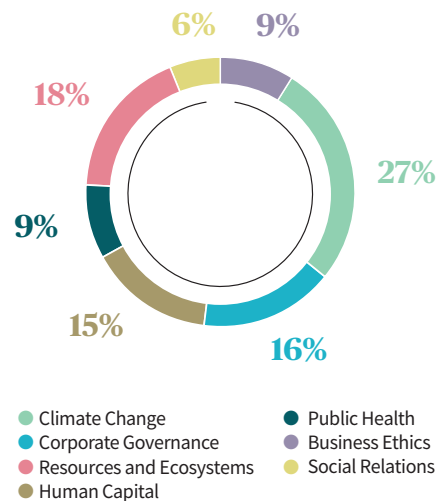
In 2020, AXA IM voted at 6,247 general meetings and did not fully support management proposals in 56% of these meetings.



Votes against Management Topics



2020 engagement themes



“Say on Climate” – a new family of climate resolutions



As an active shareholder, we analyse the merits of “Say on Climate” resolutions on a case by case basis and may vote against these resolutions. We are notably particularly attentive that the climate commitments (including so-called “Scope3” indirect emissions)

of our investee companies are in line with the goals of the Paris Agreement/ climate neutrality, their disclosure of capex investments are consistent with international transition pledges, and they make regular reporting on their progress.

27%

Climate-related engagement themes

(1) https://www.axa-im.com/documents/20195/14067199/STEWARDSHIP2020_HighLight-March-2021.pdf/9602ea8e-fc4f-29c2-c1b6-a7a2180ffdde?t=1617692363411

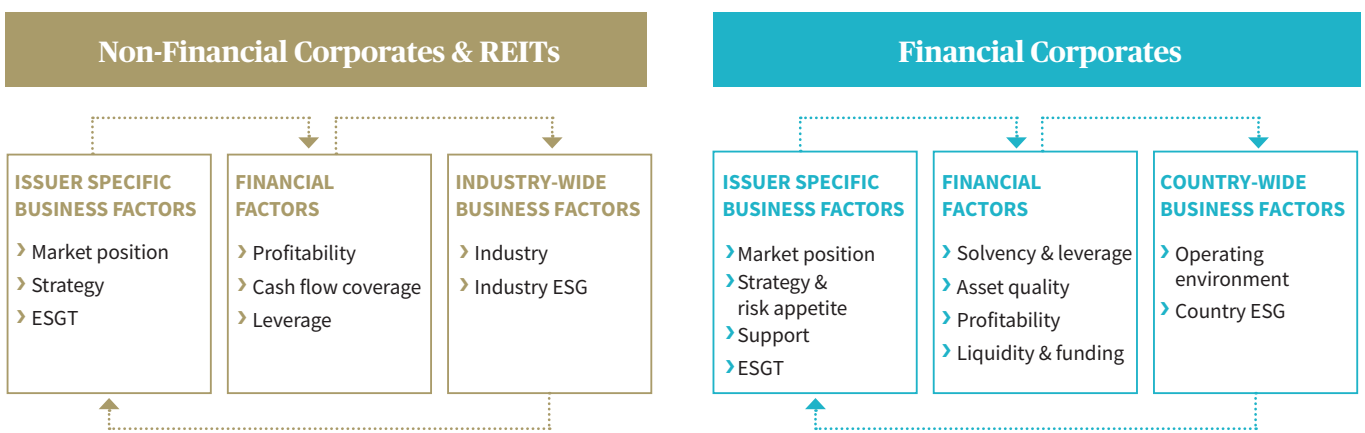
4.18 Beyond climate: ESG Integration Strategy into Internal Credit Ratings

ESG-integrated internal credit rating as the foundation of our RI Strategy

AXA has made ESG a cornerstone of its investment policy thanks to a complete integration of ESG considerations into its qualitative credit assessment and investment processes since 2015 (see below). AXA's Credit Research Team (supervising our corporate

debt investments strategy) assigns internal credit ratings ("ICRs") and manages issuer eligibility for Fixed Income investments. ICRs cover more than 85% of AXA's credit portfolio. For the remaining part, no ICRs are assigned. Ratings from external Credit Rating agencies

are taken into consideration and a review is also performed by AXA IM. When performing a credit review and assigning an ICR, AXA's Credit Research Team assesses several credit factors related to an issuer's business and financial profiles (below).



In 2020, we complemented our framework, using a top down approach by sector, to provide a broader understanding of ESG risks and to assess issuers in a sector context.

We identify industry-specific material ESG considerations, to which most issuers are exposed due to their range of activities or assets in that given sector. The potential credit impact of ESG considerations is difficult to assess as relevant data is not yet systematically disclosed, or, when disclosed, it may be incomplete or follow potentially inconsistent reporting methodologies. As a result, this assessment requires qualitative judgment. Basing our overall assessment of the materiality of E, S and G factors on industry credit risk, we classify Industries as subject to High (Red), Medium (Yellow) or Low (Green) ESG risk.

Within each industry, we also select a number of relevant qualitative or quantitative indicators (KPIs) reflecting the most material ESG considerations we have identified at sector level. These serve to position issuers and to provide a hierarchy of issuers within each sector. While all issuers in an industry are exposed to ESG industry risks, their exposures may differ in function of their specific positioning (diversification) or strategies to address these risks. Note also that governance is often an idiosyncratic risk that is downplayed at sector level. After benchmarking all issuers according to this approach, we qualify all issuers of a given sector as demonstrating above average ESG positioning (Green), average positioning (Yellow) or below average ESG positioning (Red).

The ESG & transparency factor is a key factor but not markedly different from the other credit factors considered when forming a credit opinion and assigning an internal rating. In some cases, it can be an overriding factor. It should be noted that AXA's Credit Research Team assesses the materiality of ESG considerations on an issuer's creditworthiness and does not perform an ethics-based ESG analysis. Credit analysts evaluate how ESG considerations contribute to an issuer's market position, revenues, profitability, capex and cash flow, etc.; each analyst evaluates which criteria are the most meaningful, observable and material by sector.

However, the ESG & transparency factor differ from other factors in a number of ways. First, when material, it generally impacts other factors (e.g. *strategy, market position, financial factors*). It also often differs from other factors in terms of time horizon. It can be material within our usual rating horizon (around two years) and thus impact the ICR like any other factor but the ESG & transparency factor can also have a longer horizon before it potentially materializes and impacts creditworthiness. In such cases, the ICR may not fully incorporate ESG-related risks/opportunities but AXA's Credit Research Team can still take other actions such as proposing to stop investing or imposing maturity constraints. Those decisions are then implemented by asset managers investing on behalf of AXA in fully controlled mandates.

AXA, through its Credit Research Team, is a member of the UN PRI's Advisory Committee on Credit Ratings ("ESG integration in credit"), aiming to enhance the transparent and systematic integration of ESG factors in credit risk analysis.

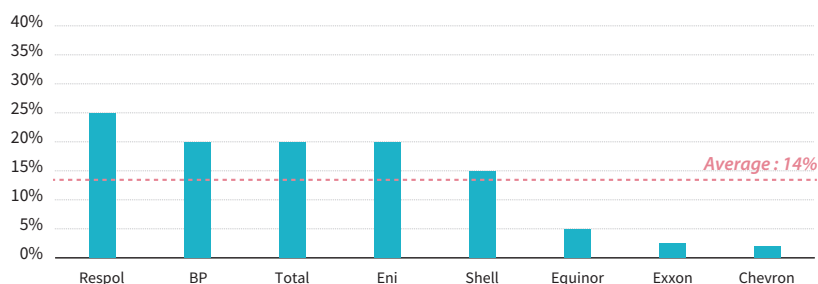
✓ Credit impact from ESG factors on Integrated Oil & Gas companies.



Our ESG analysis of the O&G sector is based on six core dimensions:

- ▶ **Emissions Management.** Companies' inherent environmental exposure can increase operational risks. Emissions management can help avoiding high legal and settlements costs and limiting stranded assets risks;
- ▶ **Energy Transition Strategy.** Developing resilient asset portfolio and adapting business models to align with a low-carbon energy transition will be key for companies, notably via an analysis of capex allocation (see diagram below);
- ▶ **Safety Management.** As exploration and production activities can have significant impacts on local environment, safety management can decrease operational risks (production stoppage) and help avoiding significant environmental remediations, government fines and lawsuits;
- ▶ **Water Management.** The sector reliance on water may expose companies to the risk of reduced water availability, regulation limiting usage, or related cost increases;
- ▶ **Governance and Ethical Culture.** Effective governance structures and internal controls are critical for companies to mitigate risks including those associated with bribery and corruption;
- ▶ **Social Cohesion.** Support from local communities and governments as well as human rights compliance are key for avoiding operational and reputational risks and for maintaining licenses to operate.

✓ % of 2021 total capex dedicated to low carbon



Source: AXA.

Quantitative ESG-specific tools adapted for each asset class

In addition to the full integration performed by the Group's Credit Research Team and AXA IM's Credit Research Team, AXA also uses KPIs and quantitative research across most of our assets.

8,000+
companies

covered by AXA's ESG research


This process includes alerts on ESG "minimum standards" rules based on KPIs, ESG scores and controversy scores to review and potentially exclude underperforming issuers from AXA's portfolios.

AXA tracks its investments' ESG performance in detail by leveraging AXA IM's tools. AXA IM has provided an ESG scoring tool since 2007, which is used both for AXA's General Accounts assets and third-party assets. The breadth of AXA IM's ESG scoring tool enables asset management teams (portfolio managers, fund managers and analysts) to further

incorporate ESG considerations into their investment decisions. This tool provides ESG scores and key performance indicators (such as carbon footprint, water intensity) based on the ESG framework per asset class described below, and is fed by information collected from the major expert sources in ESG analysis. The tool covers more than 8,000+ companies and provides ESG data on 100 governments worldwide. It offers quantitative information to help portfolio managers in their investment decision, along with the qualitative research available to them.

ESG scores: full dashboard

The coverage ratio improved versus last year mainly driven by higher coverage on listed equities and corporate bonds. The overall score increased in 2020 compared to 2019, mainly thanks to the global ESG improvement and notably on Social (“S”) score for Government bonds.

 This is the first time that AXA discloses its internal ESG scores, together with benchmarks.

AXA’s CO₂ Footprint (tCO₂/\$m revenue/GDP)

	AUM	AUM %	ESG	E	S	G	% Cov ESG
Corporate bonds	181,362,614,981	40.38%	6.05	6.59	5.8	5.23	88.66%
<i>Barclays Global Aggregate – Corporate</i>			5.7	6.3	5.2	5	
Equities	20,797,127,686	4.63%	6.04	6.1	5.38	5.27	92.00%
<i>MSCI World AC</i>			6.1	4.9	5.3	5.9	
Government bonds	247,003,481,849	54.99%	6.22	5.54	5.9	6.93	97.38%
<i>JPM GBI Global</i>			4.4	4.6	7.2	5.4	
Corp. + Equities	202,159,742,666	45.01%	6.05	6.54	5.76	5.23	89.00%
Corp. + Equities + Gov.	449,163,224,515	100.00%	6.15	5.97	5.84	6.20	93.61%

AXA IM’s RI Front Office Tool



AXA IM’s RI Front Office Tool has a complete range of functionalities, enabling portfolio managers to utilize it during the different phases of the investment decision-making process.

The ESG methodology is adapted to different asset classes by applying a different framework on corporate issuers, sovereign issuers and real assets, as described below.

ESG analysis coverage

Corporates issuers (equity and debt)

92%
corporate equities

89%
corporate debt

97%
sovereign debt

CORPORATE FRAMEWORK

Pillar	Factor	Subfactor
E	› Climate change › Ressource and eco-system	› Climate change › Resources & Eco-systems
	› Human capital	› Career Management › Working Conditions › Social Dialogue › Human & Labor Rights › Customer Relationships › Supply Chain
S	› Social Relation	
G	› Corporate Governance	› Board Structure › Transparency & Controls › Shareholder Rights › Management Quality & Remuneration
	› Business Ethics	› Business Ethics

AXA IM's ESG scoring tool emphasizes impact and materiality. It draws on fundamental principles, such as the United Nations Global Compact, the OECD Guidelines, the International Labour Organization 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 score also incorporates the concept of industry-dependent factors and deliberately

differentiates between sectors, to overweight the most material factors for each industry. It is a best in class approach, *i.e.* a relative measurement rather than an absolute one. 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. ESG-related controversies are also analyzed, with the most material controversies (for example resulting in fines) automatically resulting in a lower ESG score. **Issuers with ESG scores below 2/10 are referred to the Engagement**

& Monitoring working group with a view to confirm exclusion (divestment). Note: the tool used is under review and may evolve next year.

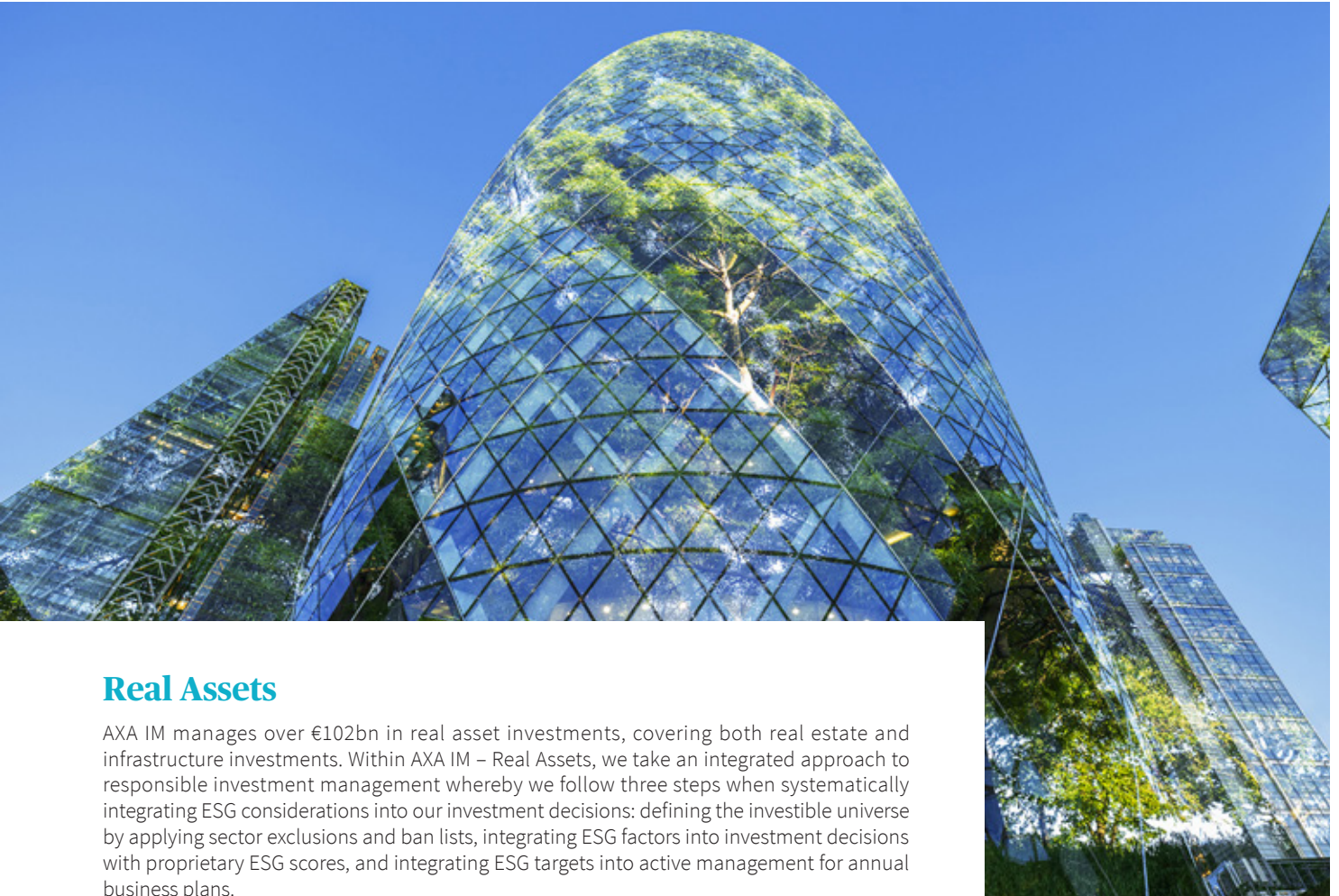
Companies' ESG evaluations are updated every six months. The list of criteria and sectorial weighting matrix that apply to the various ESG sub-criteria are regularly reviewed for a better grasp of the most significant issues for each sector. As of 2020, 93% of corporate equities and 95% of corporate bonds in the portfolio are covered by ESG scoring.

Sovereign issuers

AXA's ESG scoring framework for countries is based on public data sources such as the World Bank, the OECD, and the IMF. It currently covers 190 countries – classified in four groups: high income, upper middle income, lower middle income and low income – consisting of a spectrum of mature and emerging economies. This approach places the notion of sustainable development at the heart of ESG country assessments by analyzing countries' positioning on fundamental issues with regards to major climatic, social, and political risks. This is carried out by internalizing the progress made by each nation on long-term sustainability topics. Implicit sustainability biases introduced by varying degrees of country constraints are addressed in this process wherein selection criteria are adapted to the level of the countries' maturity and development. Each of the 17 UN Sustainable Development Goals (SDGs) is now covered by at least one indicator. As of 2020, 99% of sovereign bonds in the portfolio are covered by ESG scoring.

Pillar Sovereign framework's factors

E	› Climate change › Energy mix › Natural resources and pollution
S	› Demographics and health › Wealth and social inclusion › Labour market › Education
G	› Human rights and civil liberties › Institutions efficiency



Real Assets

AXA IM manages over €102bn in real asset investments, covering both real estate and infrastructure investments. Within AXA IM – Real Assets, we take an integrated approach to responsible investment management whereby we follow three steps when systematically integrating ESG considerations into our investment decisions: defining the investible universe by applying sector exclusions and ban lists, integrating ESG factors into investment decisions with proprietary ESG scores, and integrating ESG targets into active management for annual business plans.

Real Estate

In our direct real estate investment business, we include consideration of both financial and non-financial criteria in our investment decisions. Non-financial criteria include environmental, social and governance (ESG) factors as well as sustainability risks which may have a material impact on investment performance.

During the Investment Committee (IC) process (the decision-making forum for all real estate investments), all proposals since April 2020 consistently review five ESG factors to provide an initial view on asset-level sustainability risk and form the basis of key

actions for the ongoing strategic asset plan for each investment. These factors cover the following:

- › **regulatory risk** reviewing the estimated level of transitional or regulatory risk associated with the asset;
- › **physical risk**, reviewing the estimated level of physical risk associated with natural catastrophe and climate change;
- › **independent certification**, reviewing the appropriate level and type of certification for a relevant market, and providing a view on the relative level of asset quality;

- › **counterparty risk**, which reviews appropriate counterparty governance risk, including checks against our Anti-money laundering and KYC reviews in addition to AXA IM exclusion policies; and
- › **ESG score**, reviewing the estimated performance of the asset relative to the AXA IM Real Assets portfolio at a sector and country level, assessed using AXA IM's proprietary ESG rating tool and addressing both sustainability risk and principal adverse impacts and setting up the basis for active management of the asset.

ESG intentionality

In conclusion, highlighting the increasing degree of ESG intentionality in the investment process and making the best of evolving regulatory requirements, 66% of AXA IM's open funds (in AUMs) now have binding ESG targets, ranging from a target to outperform the ESG score of the investment universe (40% of the open funds AUMS), to even more

material commitment to remove the 20% worst performers based on an ESG criteria on our "Label ISR" funds (37 SRI funds), and UN SDG targets for our Impact strategies. ESG Data quality and comparability are notable roadblocks on this path, due to the absence of standardized and mandatory reporting at issuer level, and ongoing debates on

forward-looking methodologies. Initiatives at EU and global levels (including CSRD and IFRS Foundation projects) will help to address them in the mid-term, requiring using our influence capacity where possible to ensure relevance and convergence.

5. Risk Management

5.1 Internal control and Risk Management

AXA's management of sustainability risks is integrated within a broader risk management framework, as described more extensively in AXA's 2020 Universal Registration Document. Indeed, as AXA is engaged in Insurance, Reinsurance, Asset Management and Banking business on a global scale, it is exposed to a wide variety of risks, including market risks, credit risk, insurance risks, operational risks and other material risks. In addition, the Solvency II regime (which is an economic risks-based framework) requires AXA to have in place an effective system of governance which provides for sound and prudent Risk Management.



The mandate of the Audit Risk and Compliance Committee (“ARCC”) is to strengthen AXA’s overall Risk Management governance. The scope of the ARCC covers all of AXA’s operations and include AXA’s overall risk appetite (including breaches of risk limits), the Own Risk & Solvency Assessment (“ORSA”) and the other Solvency II reports, systemic risk documentation, major findings identified by internal audit, etc.

5.2 Climate stress testing

Risk management techniques adapted to climate change

Assessing the risks related to climate change is a rising priority across the financial services industry. It is an integral part of our internal risk management framework to enrich our overall understanding and assessment of potential climate risks impacts and to develop climate scenarios analyses in particular.

Indeed, risk management frameworks need to be adapted to climate risk specificities. Insofar climate change risks arise over medium to very long-term periods, their trajectories and impacts are particularly uncertain. Moreover, changes in climate dynamics will generate structural changes with broad effects on the economic, financial and insurance activities that are not fully reflected in historical data. In this respect, climate scenarios analysis based on different trajectories of future climate, macro-economic and financial conditions might be a relevant tool to conduct forward-looking assessment of potential vulnerabilities and opportunities related to climate change risks.

While it still raises many challenges, the development of climate scenarios analysis and stress testing has accelerated since last year, particularly through the “pilot climate exercise” launched in June 2020 by the ACPR⁽¹⁾.

Designed with exploratory and methodological objectives, Banque de France and ACPR developed an analytical framework across this pilot covering physical and transition risks while providing insurance and banking firms with new forward-looking data notably based on Network for Greening the Financial System (NGFS) scenarios.

Contrary to traditional stress tests, the ACPR pilot did not stress the solvency ratio but the balance sheet and P&L using forward-looking calibration over several long-term horizons until 2050 with the possibility to include management actions. ACPR provides 3 climate transition scenarios (“orderly”, “sudden” and “delayed”) and one physical scenario (RCP 8.5 scenario⁽²⁾).

As part as AXA’s ORSA (Own Risk and Solvency Assessment), these scenarios have been supplemented to better reflect AXA’s own

risk profile, particularly on P&C physical risks using a global and simple approach allowing to encompass the 3 drivers of NatCat risks (changes in hazard, exposure and vulnerability, see following section) and assess worldwide potential impacts of forward-looking scenarios in a range of uncertainty (pessimistic vs. optimistic views).

AXA has actively contributed to this exploratory exercise and sees climate scenarios analysis as an opportunity to further understand the long-term implications of climate change on our investment portfolios and insurance business. Through this cooperation with ACPR and our industry peers, we aim to improve the methodological framework to better address climate change risks.

Impact analysis of climate change

Based on representative selected risks of AXA, the first quantitative impacts assessed using ACPR and ORSA climate change scenarios appear relatively limited:

› **transition risks:** the impacts of financial market scenarios on AXA’s **investments** are minor notably due to our low exposure to carbon-intensive sectors likely to be the most affected by climate transition. Indeed, the quantitative exercise highlights the responsible investment strategy taken by AXA which has already significantly divested from these sectors. If and when necessary, AXA will further decrease its remaining potential stranded assets exposure when such corporates will not take the steps necessary to transition towards a low-carbon economy, through active investment decisions related to a reorientation of fixed income maturities, towards the best in class by sectors with a preference towards the corporates with formal commitments to transition efforts and limiting investment maturities,

and engagement actions encouraging corporates to embark on a low carbon economy strategy;

› **physical risks:** the climate change physical risks that would mostly affect **Property & Casualty** business at horizon 2050 under a pessimistic scenario (RCP 8.5 scenario) are increasing temperatures, sea-level rise, and extreme precipitation perils. **Flood** risks linked to extreme rainfall are likely to become more severe and more common by 2050 in some regions including North America, Northern and Eastern Europe where risks increase could be up to 2.5 current risks in a pessimist projection scenario. **Tropical cyclones’** precipitation rates are expected to increase and coastal flooding from storm surge due to rising sea levels will, as a consequence of climate change, also become more frequent. As the Earth warms,

the spatial extent and duration of **drought** is expected to increase by 2050, notably in the Mediterranean, Southern Africa, Australia, and Central and South America regions. (see following section “Climate-related Property insurance impacts”).

Our quantitative impact assessment underlines that the increase of future P&C claims is mainly driven by changes in future **exposures** (including demographical evolution) rather than an increase of the climate **hazard** by itself⁽³⁾ which could be managed in a timely manner with no significant impact for AXA by adapting our underwriting, pricing, reserving, or reinsurance strategy and fostering prevention initiatives (however, this adaptation may impact the insurability of some assets and increase the “protection gap”).

(1) Similarly Bank of England and PRA will launch their Climate Biennial Exploratory Scenario (CBES) exercise in 2021; besides, in Q4 2020, AXA contributed to the EIOPA consultations related to the (i) methodological principles of climate stress testing and (ii) use of climate change scenarios in ORSA.

(2) Representative Concentration Pathways (RCPs) have been defined by Intergovernmental Panel on Climate Change (IPCC) experts and used as inputs to climate model to evaluate the impact of different mitigation policies (from no mitigation actions to the complete stop of high-carbon activities). RCP 8.5 is a scenario of long-term global emissions of greenhouse gases which stabilizes radiative forcing at 8.5 W m⁻² in the year 2100, without ever exceeding that value. It delivers a temperature increase between 1.4°C and 2.6°C (resp. 2.6°C and 4.8°C) by 2050 (resp. 2100), relative to pre-industrial temperatures. This scenario is a high RCP assuming constant emissions after 2100.

(3) Nonetheless the impact of hazard evolution could be more important according to the increasing frequency of events occurred per year. See following section for details.

Regarding our **Health & Protection** business, we consider as appropriate the ACPR approach focusing on two physical scenarios:

- › *vector-borne diseases (dengue, malaria, etc.):* it corresponds to an increase of the probability of pathogen transmission by vectors such as mosquitoes, ticks, or fleas, mainly because of a rise of temperatures resulting in a shift of hospitable land to those vectors. This probability varies depending on the place of residence of the insured population and on their vulnerability to vector-borne diseases;
- › *pollution in urban areas:* it corresponds to the deterioration of air quality resulting in a higher frequency of respiratory related diseases and deaths.

The insurance guarantees that might be impacted are death, health (consultation and hospitalization) and disability (work

stoppage). Despite the very early stage of such study with on-going discussions amid experts community (e.g. on calibration of mortality rates under pollution scenario), our first estimates indicate that, Health & Protection business should be rather resilient to climate change impact on the long run (30 years horizon).

In conclusion, climate scenarios analysis and pilot stress testing exercises run over the year contribute to further integrate climate change in the risk management framework as well as provide first insightful quantitative outcomes for risk and business purposes. Nevertheless, such preliminary quantifications have been performed using simplified modelling which will require to be enhanced for being further embedded in strategic decisions. The ACPR “blended” disclosures do not allow

to draw conclusions for AXA specifically, hence the need to carry out extra work separately. The purpose of this exercise is also to test the test itself. According to industry results aggregated by ACPR, the impact for society may be an increase in the “protection gap” should the increase in premiums to cover increased risks exceed GDP. Based on our analysis, this is not something we captured. Reducing the protection gap is a cornerstone of AXA’s risk management and we carefully consider any drivers that may impact our clients’ premium in the future (e.g. notably the potential increase of real estate values in risk-prone areas). Besides we will continue to actively engage in the dialogue with public authorities to review the state or public-private pool mechanisms, identified as a key lever in the protection of societies, in the light of climate change impacts.

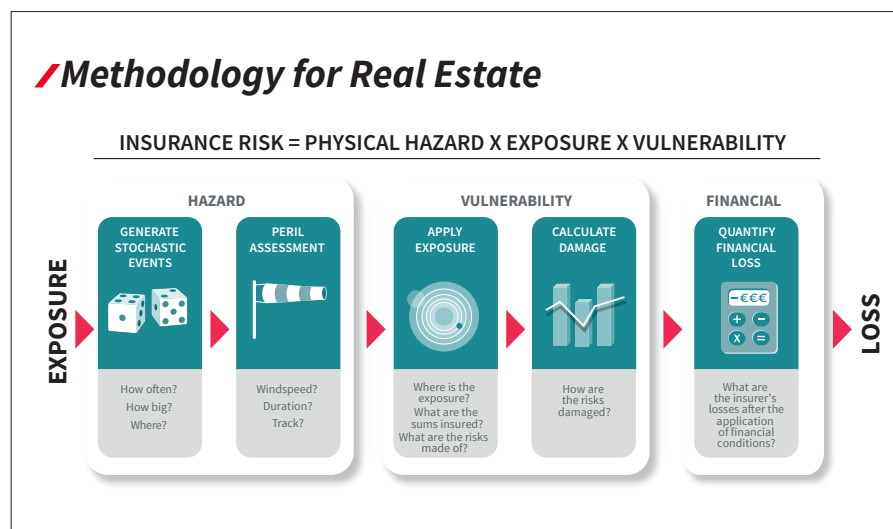
5.3 Climate-related Property (re)insurance impacts

Climate Risk

As mentioned in the previous section, when it comes to property & casualty insurance risk, AXA considers every aspect of the risk equation. Climate risk is a function of the physical hazard (the severity and frequency of events), exposure (the monetary value of insured asset(s)) and vulnerability (the susceptibility or damageability of the insured asset(s) to a given hazard intensity), and each of these elements plays a unique role in driving climate risk both now and into the future.

The changes we see in our year-on-year losses from climate-linked hazards are a function of these components. A mounting body of scientific evidence (IPCC) suggests that the hazard is changing for different climate-related perils due to anthropogenic climate change, but the direction and order of magnitude of these changes is usually slow and, in many instances, highly uncertain. In fact, there are instances where climate risk may decrease due to the complex interactions of the hazard, exposure and vulnerability over space and time. Understanding precisely when and where changes are likely to occur presents opportunities for us as an insurer to either take risk where others might not wish to, or de-risk where we think prices may not reflect the risk we are taking.

Where we do have climate projections of the expected change in hazard, these are mostly at time scales that are too far into the future (e.g. 2050 or 2100) and too coarse a



spatial resolution to provide valuable insights on how to manage our business. Whilst these projections are useful in understanding how the climate will change in the distant future at continental scales and above, from an annual underwriting, business and capital planning perspective, we, as a global (re) insurer, require high-resolution climate and weather results at time horizons on the order of a few years.

Given how we define climate risk as a function of the hazard, exposure and vulnerability, it is critical that we look to understand how each of these components might evolve in a changing climate.

Our internal analyses suggest that by far the biggest driver of changes in losses in the past 10 years has been from changes in exposure, a conclusion which is in line with several other studies. These changes have been generated by increases in property values, economic growth and population dynamics, among other things. We expect that exposure factors will continue to change at rates greater than those for hazard and vulnerability in the coming decade, and so from a (re)insurance perspective, it is prudent to shift our focus to explore how near-term changes to our exposure are likely to impact our risk profile.

1) Hazard

When discussing the impacts of climate change to (re)insurers, it is important to distinguish between weather and climate. Climate refers to averages of weather over longer time horizons (typically 30+ years) and low resolutions, whilst weather refers to short-term, relatively regional events. So, while climate change is a global

phenomenon, its impacts will manifest through localized extreme weather events.

The figure below⁽¹⁾ shows the relative confidence in the attribution of particular hazards in relation to climate change. The graph is based on the quality of data for each hazard, the ability to simulate the hazard and how well climate change is understood to

affect the physical processes that create the hazard. There remains significant uncertainty around our current understanding of how climate change will influence the frequency and severity of many of these atmospheric climate-linked hazards to which we are exposed.

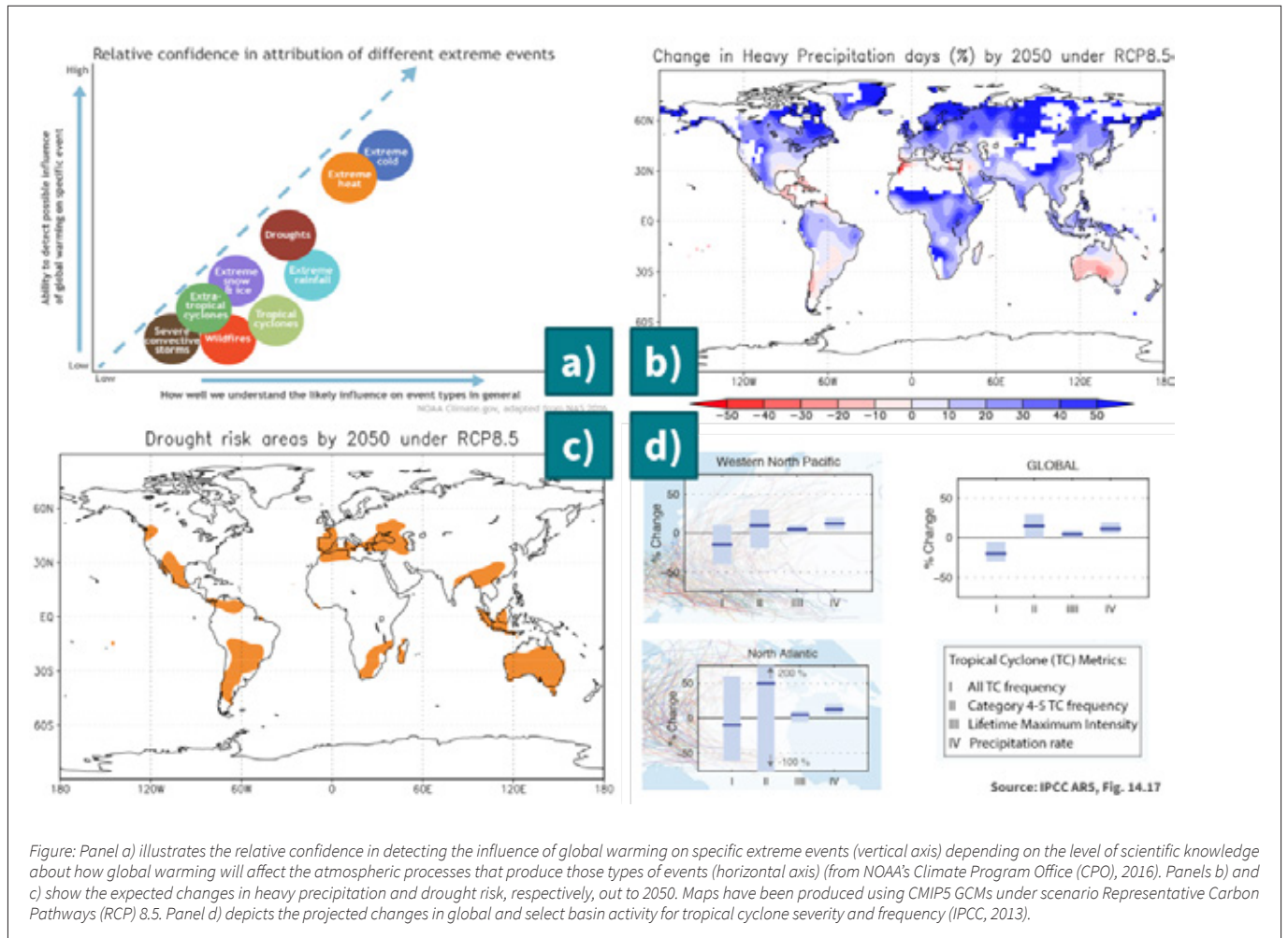


Figure: Panel a) illustrates the relative confidence in detecting the influence of global warming on specific extreme events (vertical axis) depending on the level of scientific knowledge about how global warming will affect the atmospheric processes that produce those types of events (horizontal axis) (from NOAA's Climate Program Office (CPO), 2016). Panels b) and c) show the expected changes in heavy precipitation and drought risk, respectively, out to 2050. Maps have been produced using CMIP5 GCMs under scenario Representative Carbon Pathways (RCP) 8.5. Panel d) depicts the projected changes in global and select basin activity for tropical cyclone severity and frequency (IPCC, 2013).

Despite this uncertainty, it does not mean that we should not attempt to understand the impact that a changing hazard will have on the risk we face as a (re)insurer. In order to identify perils and areas that will most likely be impacted, we have built maps using data from the IPCC and other scientific reports, as shown in Figure b) and c). For this study, we primarily focus on two perils: drought and extreme precipitation. We have selected drought and extreme precipitation as there is strong

consensus on the likelihood and the trend of future changes to these perils. As the Earth warms, the spatial extent and duration of drought is expected to increase by 2050, notably in the Mediterranean, southern Africa, Australia, and Central and South America regions. Flood risks linked to extreme rainfall are likely to become more severe and more common by 2050 under scenario RCP 8.5 in some regions including parts of North America, northern and eastern Europe and southern Asia.

We have also investigated climate change impacts to tropical cyclone hazard as it is a peril to which AXA currently has significant exposure. Figure d) shows that the overall frequency of global tropical cyclone is expected to reduce, but that we would likely see an increase in the frequency of Category 4-5 storms. It should be noted that there are predictions shown for different basins, but these predictions become more variable and also say nothing about the likely landfalling impacts of these storms.

(1) <https://www.climate.gov/news-features/understanding-climate/extreme-event-attribution-climate-versus-weather-blame-game>

This analysis also shows that precipitation rates are expected to increase and that coastal flooding from storm surge due to rising sea levels will, also become more frequent.

Hazard Feature	Scale	Comment	Likelihood of Changes
Tropical Cyclone Frequency	Global	Remain unchanged or decrease	Likely
Tropical Cyclone Intensity	Global	Increase in mean maximum windspeed	Likely
Tropical Cyclone Rainfall	Global	Increase in rain rates	Likely
Extra-tropical Frequency	Global	Stable, changes small relative to Natural Variability	
Extra-tropical Location	Southern Hemisphere	Small poleward shift - model dependent	Likely
Extra-tropical severity	Global	Impact of storm track changes on regional climate at surface	Low Confidence
Severe Convective Storms	Global	Suggestive of a trend towards environments favouring more severe storms - no likelihood assigned due to lack of analyses	
Excess Precipitation Frequency & Severity	Mid-latitude/ Tropics	Forecast increases in frequency and severity/ intensity As climate warms extreme precipitation rates will increase faster than the temperature average	Very Likely
Extreme Precipitation	Global	Increases expected	High Confidence
Drought	Regional/ Global	Increases expected	Likely
Wildfire frequency	Boreal regions	Could lead to increase in occurrence of wildfires due to fuel availability, readiness of fuels and ignition sources Lengthening of wildfire seasons due to temperature projections could be leading to increasing risk in long-term, human activity, vegetation dynamics means this will vary by region	
Wildfire Hazard	Global	Increases expected in most regions - though other will see reductions through land movement	Very Likely

Table: a summarized list of other climate hazards to be impacted by climate change with likelihood of changes. This list is not exhaustive but representative of major climate related perils expected to be impacted in the coming decades [IPCC technical summary [2], [3], [4]. High Confidence [99%; 100% probability]; Very likely [90%; 100% probability]; Likely [66%; 100% probability]; Low Confidence [0; 33%].

It is clear from the above that climate is changing and this will impact, positively and negatively, the future frequency and severity of climate related perils. The examples provided above are taken from studies which have used climate projections at coarse resolutions and much longer time horizons than what is necessary to actively manage our portfolio of

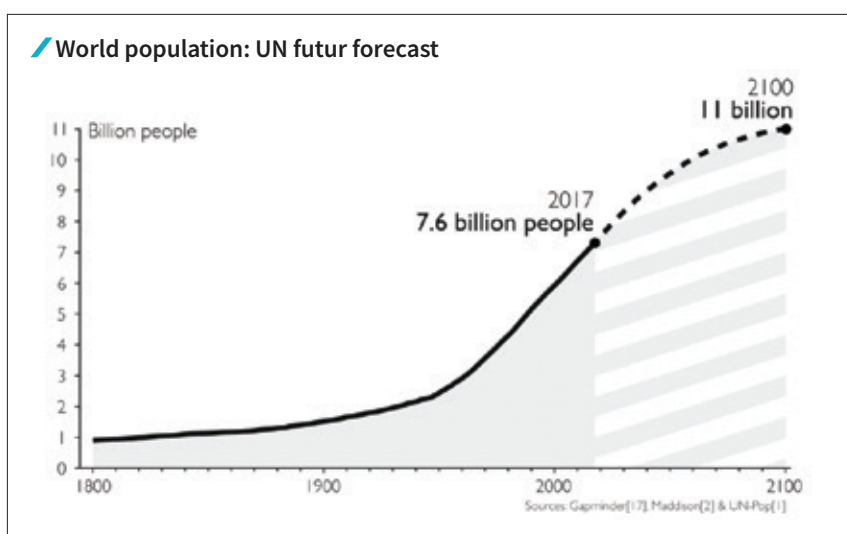
business, but represents the latest available science. The following sections provide more detail around the importance of time horizon and resolution and the improvements that we are looking to achieve in order to gain more insight into changes that we might be exposed to in a changing climate.

2) Exposure

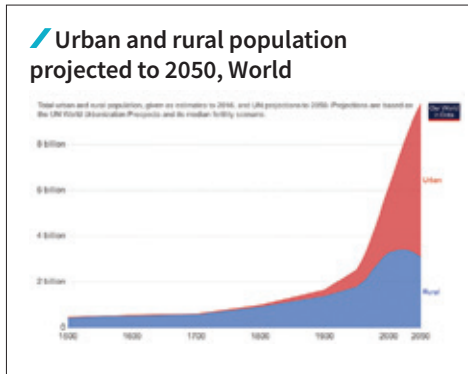
Internal analysis using US and European data suggests that industry-wide insured exposure in these regions has increased on average by approximately 4-5% *per annum*. These year-on-year increases have been driven by socio-economic factors such as population growth, urbanization, urban sprawl and wealth inflation. This trend is unlikely to subside in the near-term, and so AXA is proactively investigating the potential impacts of increasing exposure into regions of high hazard in order to better understand the change to our risk profile in the next few years and beyond. Increasing exposures amplifies both risk and opportunity for AXA.

Population Growth – this has steadily been increasing and is forecast to continue to grow into the future. The more people there are, the more assets are placed at risk and the larger the losses we expect to experience from the same historic events⁽¹⁾.

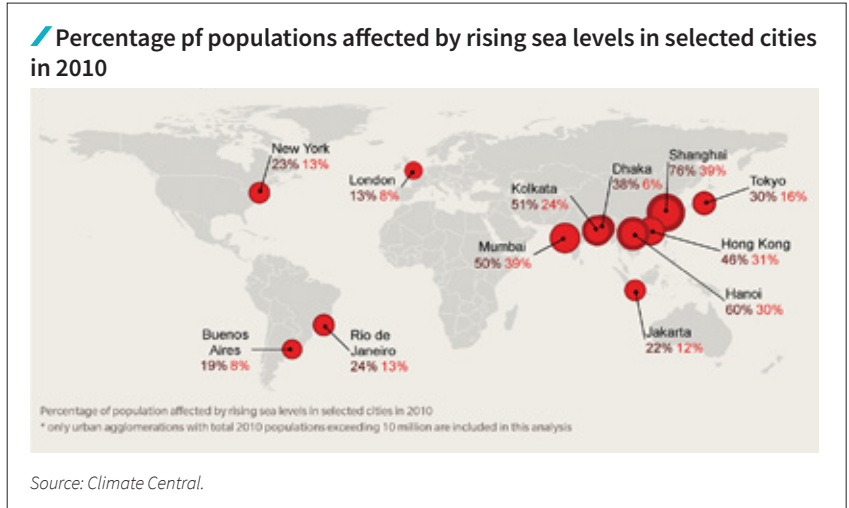
(1) <https://www.gapminder.org/tools/>



Urbanization – over time, more people have moved into urban areas which tend to be on rivers or near to the coast. The UN has forecast that the proportion of the population moving into urban areas will continue to increase, with more people expected to be living closer to the ocean in the future⁽¹⁾.



By 2030, the United Nations predicts that 60% of the world’s population will be living in cities. The chart below shows the percentage of the 2010 populations for coastal mega cities (populations > 10m) that will be affected by sea-level rise under +2°C (red) and +4°C (darker red) scenarios. This has the potential to dramatically increase losses from single events, given the increasing concentration of assets⁽²⁾.



Urban sprawl – not only will we see more people moving into urban areas, but we expect those urban areas to increase in size in the future. The demand for development in these urban areas also has the potential to put more people into areas that are considered high hazard zones, such as coastal regions which are exposed to rising sea-levels, floodplains or high wildfire hazard areas that are considered part of the wildland urban interface (WUI). We have seen this dynamic manifest itself in numerous examples in prior years losses, like the Thai Floods in 2006, Hurricane Harvey in 2017 and the California wildfires in 2017 and 2018.

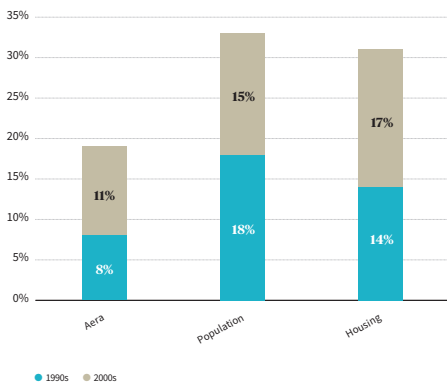
Economic growth – continued growth in productivity and wealth across the world means that there are more people with funds readily available to buy assets. The increase in these assets adds to the risk that we are exposed to from natural hazards.

A case study – Californian Wildfire

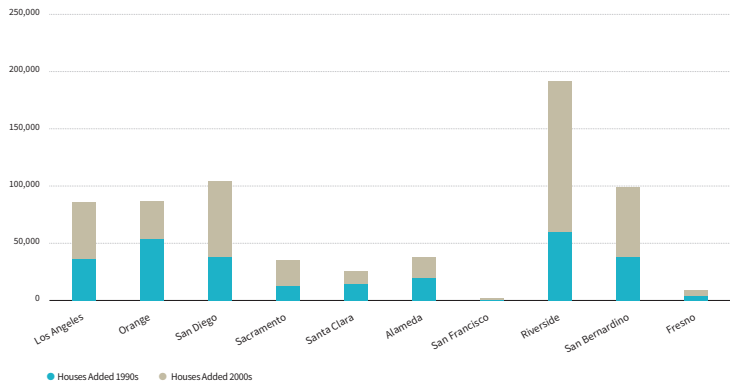


Further research has been done looking at the impact of exposure growth in California and how that has affected our risk associated with wildfire. The wildland urban interface (WUI) is the zone between the wildland and urban development and, from an exposure perspective, is most at risk from wildfires. In the United States, 82% of structures destroyed by wildfires between 1985-2013 were located in the WUI⁽³⁾. The charts below shows the decadal increase in population size, housing units and area relating to the WUI between the 1990s and 2000s⁽⁴⁾. This highlights that not only is the area of the WUI increasing, but the population density and housing needed to accommodate this population growth is also increasing.

Percentage WUI growth – CA State



Number of houses added to the WUI



(1) <https://ourworldindata.org/grapher/annual-co2-emissions-by-region>
 (2) <https://www.gccapitalideas.com/2020/04/22/sea-level-rise-protecting-our-planet-and-the-public-purse>
 (3) Kramer, H. A., Mockrin, M. H., Alexandre, P. M., Stewart, S. I., & Radeloff, V. C. (2018). Where wildfires destroy buildings in the US relative to the wildland–urban interface and national fire outreach programs. *International Journal of Wildland Fire*, 27(5), 329-341.
 (4) Radeloff, V. C., Helmers, D. P., Kramer, H. A., Mockrin, M. H., Alexandre, P. M., Bar-Massada, A., ... & Stewart, S. I. (2018). Rapid growth of the US wildland-urban interface raises wildfire risk. *Proceedings of the National Academy of Sciences*, 115(13), 3314-3319.

3) Vulnerability

Vulnerability is the extent to which an asset can withstand the hazard. The vulnerability of a community will depend on several factors:

- › **economic development** – the extent to which a country and community is developed will influence its ability to withstand a natural hazard. This is largely due to the fact that buildings will be made of stronger materials, be better designed and more robust;
- › **building regulations** – related to the above, more advanced economies will tend to have more rigorous regulations around building codes. These regulations typically account for the perils specific to an area in order to ensure communities are resilient in the face of these hazards;
- › **natural and non-natural defenses** – governments and local authorities may invest in infrastructure to protect local communities against the impact of certain

hazards e.g. levees, seawalls and flood defenses to name a few. Natural defenses may also exist in the form of natural assets like mangroves, coral reefs and coastal marshes which provide protection against coastal hazards.

In conclusion, vulnerability is a key part of the risk equation whilst understudied as a solution to reduce risk in the context of climate change. These changes could be driven from government investment in defenses, nature-based solutions like mangroves, coastal marshes or coral reefs or from legislative/regulatory changes around the standards that properties are built to in order to be more resilient. As a global (re)insurer we have taken the opportunity over the last years to invest in increasing society resilience via impactful initiatives and research programs (e.g. Ocean Risk & Resilience Action Alliance, Resilient Cities Guide publication).



Modeling Uncertainties & Limitations

Global Climate Models, Numerical Weather and Catastrophe Models

There are a variety of models available within the climate space, all of which have been built to address different problems and provide different perspectives. This section aims to briefly describe some of these models, their strengths and their limitations with regards to Natural Catastrophe risk assessment for (re)insurance business.

Numerical Weather Prediction (NWP)

NWP models are used to model weather in the present and/or near future. These models are purely mathematical/physical in structure; on finite grids, they numerically solve the physical equations that govern atmospheric dynamics. Because they are focused on accurately representing localized weather, they tend to be high resolution. Currently, the highest resolution global NWP models exist at approximately 5-10 km grid spacing. These models have the ability to provide detailed information about relatively small-scale structures of weather perils such as thunderstorms and hurricanes. Another important feature of NWP is the assimilation of observations data used to correct model biases all along forecast production. This ensures a continuous alignment between the model and the current state of the atmosphere. While NWP is ideally suited to tackle the spatiotemporal challenges inherent in climate risk analysis, running NWP at the highest resolution possible is expensive, time-consuming and forecasts can diverge, meaning that numerical solutions can lead to unphysical values.

Global Climate Models (GCMs) and Regional Climate Models (RCMs)

As capturing climate features requires simulations over long periods of time, typically hundreds of years, GCMs have been developed with the objective to globally reproduce medium to large scale atmospheric features with a coarser spatial resolution (typically 25 - 100 km) than NWP. They are forced by long-term scenarios characteristics of current or assumed future atmospheric conditions. In order to assess smaller scale weather events that are of interest for impact studies and that are “parametrized” in GCM, scientific researchers make use of downscaling techniques. There are two types of techniques: dynamical and statistical, both leading to simulation with a spatial resolution adapted for impact studies:

- › dynamical downscaling makes use of Regional Climate Models (RCM), characterized by a spatio-temporal resolution closer to NWP and driven by GCM simulations. This method requires a high computational infrastructure and attention to the potential biases of the GCM that are transferred to the RCM;

- › statistical downscaling makes use of historical data to derive transfer functions of given variables of interest between the coarse grid of the GCM and the ultimate finer grid. This method remains strongly dependent on the historical data available and may not cope well with extreme values.

GCM and RCM are highly valuable tools for assessing future global and regional climate trends. Being models, they bear uncertainties and biases that must be taken into account in the analyses of the results, particularly when they are used to assess the evolution in the future of small-scale extreme weather impacts on exposed populations.



Vulnerability is a key part of the risk equation whilst understudied as a solution to reduce risk in the context of climate change.

Catastrophe (Cat) Models

Cat modelling moves away from the above types of modelling by integrating additional components to hazard analyses. Cat models most often rely on historical macro-level statistics generated from the above types of models, as opposed to building them into their cores. Although not ideal to be so detached, Cat models look at much more complexity than purely weather; once adding in engineering (vulnerability) and economic (financial) modules, along with re/insurance terms, computing already becomes extremely expensive. It is also important to remember that, at their heart, they are attempting to create many thousands of years of data in order to provide confidence in tail-loss output which is today not conceivable with GCM/NWP. Finally, as Cat Models rely on data obtained from models driven by current climate conditions (GCM, RCM, NWP), the frequency and severity they capture are characteristic of the current climate including any change in climate up to the time of parametrization.

In conclusion, NWP, GCM/RCM and Cat Models have been created for very different purposes. They all have their strengths and weaknesses; the critical point here is to be clear about what is trying to be achieved or discussed when looking at outputs from these various models. Taking GCM outputs and integrating them into financial decision-making and disclosures is complex, with uncertainties around natural climate variability, climate model uncertainty and emission scenario uncertainty. Time horizon and spatial scale are two key attributes that are required to understand the risk that we face as a (re)insurer and we will explore the impacts that these sources of uncertainty have on these factors below.



Adapting TCFD guidelines to insurance underwriting: UN PSI Pilot Project



During 2020 AXA XL participated in a project led by the UN Environment Program's Principles for Sustainable Insurance Initiative (PSI) to develop methodologies that insurers can use to assess climate-related risks across their underwriting portfolios. The outputs of the project focused on climate change scenarios to assess physical, transition and liability risks, developed in alignment with the TCFD recommendations. The final report, "Insuring the climate transition: Enhancing the insurance industry's assessment of climate change futures", represents the expertise of 20+ insurers and supports the industry in addressing one of the more challenging areas of the TCFD framework. It also acknowledges that climate change presents not only downside risks, but also upside opportunities to develop new insurance products, and that as an industry we must be considering both to effectively serve our customers and the wider world. Engagement on this project led to AXA XL being the first insurer to sign the UNEP Physical Risk and Resilience Statement – a commitment to working towards more comprehensive and robust physical climate-related risk disclosures, in alignment with TCFD recommendations, by 2023. The commitment was launched at the Climate Adaptation Summit on January 25, 2021.

The simple and transparent model framework produced as a result of the UNEP PSI TCFD project includes estimates of how frequency and intensity change estimates may flow through to economic (not insured) losses. **AXA XL have taken this analysis a step further**, by looking at the catastrophe models used operationally within the division and adjusting the assumptions within the model to replicate the scenarios considered. These scenarios consider the median expected change for US hurricane frequencies and intensities (wind speeds) as well as up and downside scenarios. The analysis enables AXA XL to consider a range of possible outcomes as a result of climate change's potential impact on the hazard component only.

(Re)Insurance Business

Application: how to account for Time Horizons and Spatial Resolution

NWP models provide weather forecasts for local phenomenon (up to a few kilometers) over a short time horizon (days to months) whereas GCMs look to provide worldwide views on larger scale weather patterns, allowing for climate forcings like greenhouse gases, aerosols (and more recently land use and population changes dependent on RCPs or Shared-Socio-economic pathways (SSPs)) over a much longer time horizon. From a (re)insurance perspective when we think about time horizon and resolution, we think about it from the context of:

- › **risk pricing:** when we price risks, we aim at reflecting the current view of the risk (hazard, exposure and vulnerability) we are facing in the price that we are charging. We have the ability to adjust pricing on our (re)insurance contracts annually (in the context of the market within which we operate) and when considering exposure to natural perils, the fact that our modeling of extreme weather on a local scale is only accurate a few days in advance, means that we need to consider the time horizon over which we have data available to estimate the risk we are pricing. We have to balance using the more recent years of data which may contain well known short-term climate influences and less data, against the long-term benefits of a more complete data set with potential inaccuracies from data collection and the fact that the history may not reflect more recent climate conditions which might be a more important driver of the risk;
- › **business planning/capital management:** from a business planning/ capital management perspective the time horizon that we operate within is typically 3 to 5 years (10 years at the maximum). We need to consider the impact and the extent to which natural hazards might vary over this time horizon. Business planning considers how risks might be changing and how we should respond to these changes from an appetite/ profitability perspective. The way that we choose to shape our portfolio in the

future also drives our capital management strategy and therefore having a view as to how the climate would develop at a macro and more granular/ regional scale would be important for both these reasons.

The above demonstrates the need for information at a time horizon and resolution that does not tie up with the projections and information provided from GCMs/RCM which tends to focus on longer-term projections, typically out to 2030, 2050 and 2100. These long-term projections, driven by RCP scenarios, are important to get a global overview of climate change impact and to call attention to the necessity to effect large scale societal changes. However, projections to these timescales and at coarse resolutions are not well-aligned with the needs of the (re)insurance community. In order to manage our business, we need extreme weather projections up to a maximum of 10 years (preferably in the 3-5 year time period) at high resolution to allow us to consider how the hazards we are exposed to are changing. Knowing this will allow us to effectively mitigate some of the risks associated with a changing climate and potentially take advantage of the opportunities, from both a pricing, business planning and capital management perspective.

In conclusion, a Cat model combines all 3 components of the risk equation – exposure, hazard, vulnerability – in order to arrive at a view of risk and so when discussing time horizon and resolution it is necessary that we consider all three components of the risk equation and the relative impact that these components might have over the competing time horizons and resolution, along with how their interactions might change in the future. Advances have been made historically and continue to be made around climate modelling, but it is clear that this modelling needs to be adapted for risk pricing, business planning and capital management for a (re)insurer. The results from climate models are important to inform societal actions but needs to be refined for our understanding on the risk we are likely to face.



Integrating forward-looking scenarios into NatCat risk assessment

Over the past years, AXA has taken decisive actions on the insurance side (ban of coal and tar oil sands businesses from insurance portfolios in 2017, creation of AXA Climate in 2018) to support the reduction of CO₂ emissions and to develop innovative insurance solutions to protect our clients from climate change impacts. The next step is now to prepare the future of insurance products, underwriting and risk management solutions by integrating forward-looking scenarios into AXA Natural Catastrophe risk assessment. Investigating today climate risks, including evolution of climate, exposure and vulnerability in the future, is critical for AXA, as a global (re)insurer, to support a sustainable growth, find innovative and preventive solutions for our clients worldwide and reinforce our role within society and communities at large. In order to tackle the complexity of climate risk modelling, we invest on the long-term on data collection, research and development at different time-horizon.

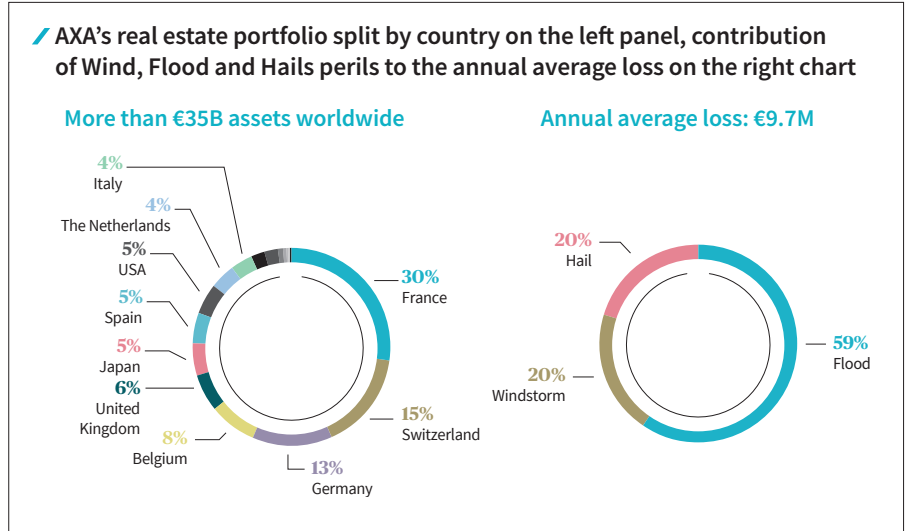
Corinne Vitrac, Group Head of P&C Risks

5.4 Climate-related physical risks impact on Real Estate investments

In addition to the climate impact assessment conducted on AXA's Property insurance exposure above, and on corporate and sovereign assets described in the "Portfolio alignment" section, extreme weather events may also impact "Real Assets", such as real estate, which are subject to both physical and transition risks in TCFD terminology. The underlying climate mechanisms overlap with Property insurance, but impacts differ significantly when looking at such assets from an investor perspective.

In-house risk analysis of Real Estate assets

Since its first Climate Report (2016), AXA conducted an analysis on a selection of property assets. In 2021, this analysis covers a scope of more than €35bn⁽¹⁾ of direct property investments. AXA's Investment and Risk Management teams evaluated the financial impact of floods, windstorms and hail on these properties in a selection of 20 countries representing close to 90% of the portfolio. Consistent with previous studies using AXA's internal "Clymene" platform, both average annual losses and losses generated by one in a hundred years flood, windstorm and hail events remain limited compared to the total asset value. Results of the assessment based on the average annual loss are detailed on a country-level in the figures below.

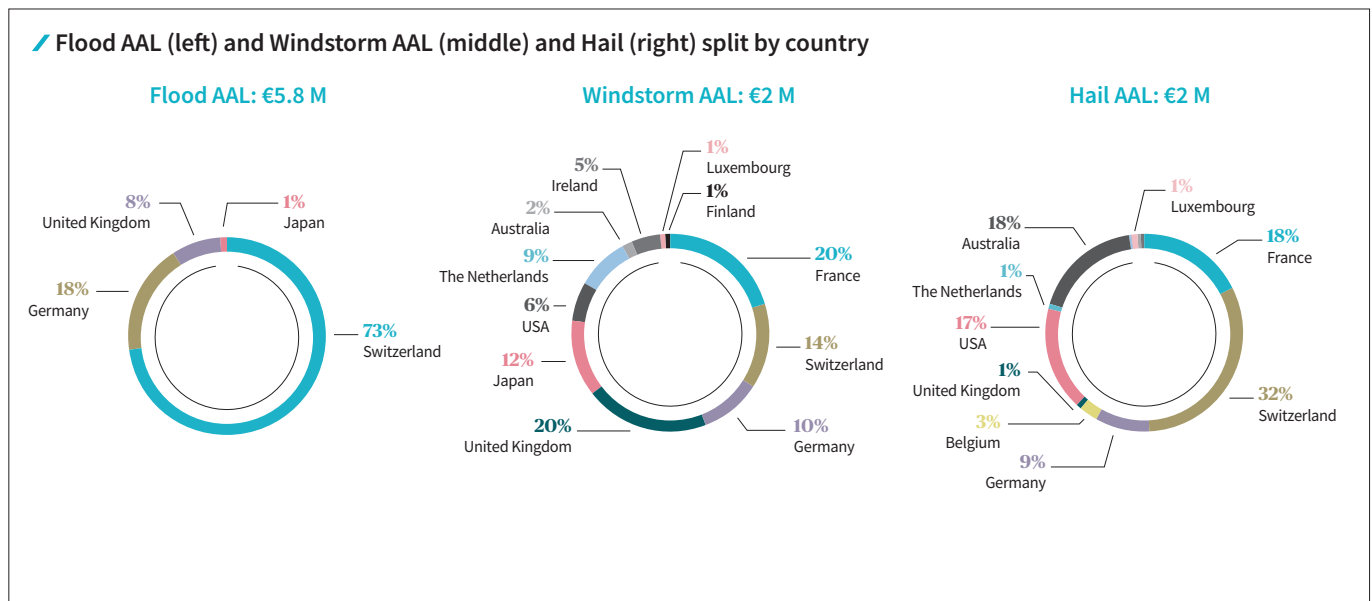


€5.8m

AXA's Real Estate Annual Average Loss to Floods

€2m

AXA's Real Estate Annual Average Loss to Windstorms



(1) Representing AXA's ownership in real estate assets managed by AXA IM Alts as at 31/12/2020.

AXA's real estate exposure is global with most of the portfolio located in Europe (87%). The portfolio's highest risk exposure is to flood (59% of Annual Average Loss – AAL), followed by windstorm and hail in Figure 1. Currently, asset-level data used to run the analysis relies on the geolocation of buildings as well as their main occupancy. However, models used to assess the risk exposure to natural hazards have the potential to integrate a more granular level of information in relation to physical components of a building, such as the structure, the year of construction,

the height of the building, etc., which can contribute to more refined and asset specific results in the analysis. Such detailed information is currently not systematically available in real estate portfolios but there is on-going work to collect this data more systematically in order to increase the precision of the output result.

Based on an internal risk assessment, Switzerland drives the AAL for both flood (53%⁽¹⁾), windstorm (13%) and hail (32%) perils. For windstorm peril, France, UK, Japan

and Germany contribute 62% of the annual average loss. For flood peril, Germany and the U.S. contribute 39% of the AAL. For hail peril, France, Australia, the U.S. and Germany contribute 62% of the AAL. While exposure is mainly located in Europe (87%), the natural hazard risk associated to this exposure represents 73% of the total risk, meaning that global markets are more exposed to physical risks. Note: the AAL has increased compared to the 2020 analysis due to the addition of the hailstorm peril and of new assets in the real estate portfolio.

“

According to in-house risk modelling, the financial impacts of climate-related “physical risks” on real estate assets appears limited. Our teams continue to collaborate with AXA’s Nat Cat teams to better understand physical risk levels and determine appropriate adaptation efforts to limit such exposures to climate events.

Integrating Physical Risk Analyses in Investment Decisions

AXA IM Real Assets further strengthens the analysis of physical risk during an acquisition process using the “Aegis” underwriting tool, combined with the Clymene platform. Through 2020 the Real Assets team mapped 99% of our global real estate equity holdings, and all underlying real estate in our US debt holdings. Through late 2020 and early 2021 the teams have continued to map the underlying risk level in our European debt holdings. Two specific projects were undertaken in 2020 as a proof of concept to assess portfolio wide analysis of future climate risk scenarios, including models from Carbon Delta MSCI and AXA Climate:

- › the first project was run on a pan-European real estate portfolio, where Carbon Delta MSCI modelled resilience to transitional and physical risks in relation to climate change, a holistic approach that enabled the investment team to identify the potential value-at-risk of assets in the fund

and the tail-risk buildings which may need additional attention to develop an asset-specific adaptation strategy;

- › in a more detailed project, our investment teams engaged with AXA Climate to focus on physical risk using RCP 4.5 and 8.5 scenarios, to capture the normalized risk score of a representative global portfolio of 90 assets, with a deep dive into 3 assets for which they developed a detailed adaptation report to guide the asset management teams.

In conclusion, according to in-house risk modelling, the financial impacts of climate-related “physical risks” on real estate assets appears limited. The teams at AXA IM Real Assets continue to collaborate with AXA’s Natural Catastrophe (Nat Cat) teams to better understand physical risk levels and determine appropriate adaptation efforts to limit such exposures to climatic events.

(1) Switzerland is indeed more prone to fluvial flooding than other countries in our portfolio due to its high lake and river concentration.



Transition Risk - A Holistic Approach to Resilience

Physical risks are not the only Climate-related risks considered by financial institutions. Risks related to the transition to a low-carbon economy can also impact Real Estate investments. AXA's investment teams rely on different market standards and tools, such as the Energy Performance Certificate (EU EPC)⁽¹⁾ and the Carbon Risk Real Estate Monitor (CRREM) models to understand transition risks:

- › **EU EPC** – Based on the upcoming Taxonomy Regulation and with the MEES (Minimum Energy Efficiency Standard) regulation in the UK, the EU EPC is becoming a useful tool to determine the stock of buildings on which to concentrate the efforts to improve energy efficiency and thus reduce an asset's carbon footprint. In addition to an EU EPC being required in order to sell or trade an asset, our conviction is that this regulatory standard will continue to be used to define
- › **CRREM** – The Climate Risk Real Estate Monitor (CRREM) is another tool available to benchmark buildings' energy performance against Paris Agreement targets, an ambition which AXA has made clear with its participation in both the Net-Zero Asset Owner Alliance. This tool provides the real estate industry with consistent, science-based intensity targets for different building types, in different countries, relative to local grid emission levels. These consistent asset level performance targets

include both energy efficiency (kWh/sqm) and GHG emissions (kg CO₂e/sqm) metrics which need to be met for the underlying asset to align with global targets. This tool provides critical insight into measuring the performance of our ambition to deliver net-zero investment portfolios by 2050 or before. As at 2020, 25% of AXA's building stock is aligned with the 1.5°C warming scenario, a percentage that is set to increase with the new decarbonization targets set by the organization.

Ultimately, using these various tools provides us with new insight into some of the physical and transitional risks and impacts of climate change on our portfolios. We remain engaged with other institutional investors and managers in using the tools to better protect and enhance the value of our assets and portfolios over time.

(1) https://ec.europa.eu/energy/eu-buildings-factsheets-topics-tree/energy-performance-certificates_en

5.5 Climate-related litigation risks

In response to the current climate crisis, there is a developing body of climate-related laws and regulations and increasing examination from regulators and law-enforcement bodies on the management of the financial risks of climate change. Since the 2015 Paris Agreement, climate-relevant policy, law and regulation have been implemented at an extraordinary rate in jurisdictions across the world, forcing companies to adapt and shift their current legal and regulatory landscapes.

38

Lawsuits against States regarding "climate inaction" 2015-2020

In recent years, a rapidly increasing number of legal challenges have been brought to impose consequences for climate inaction. Lawsuits are now routinely being brought before administrative, judicial and other investigatory bodies, alleging failures of legislative, administrative and/or regulatory authorities to enforce the rules and regulations they implement, or to adhere to their climate commitments. Administrative cases brought against governments and public bodies remain the most predominant type of climate litigation, centering on alleged failures to enforce climate laws/regulations or mitigate climate harms. Other lawsuits include tortious claims and claims against corporations for failing to account for or disclose possible risks, or misleading investors or the public about their climate harms or climate change mitigation measures.

As with all litigation risks, certain territories in which such lawsuits are filed are more likely to be sources of exposure for insurance companies and potentially related or "copy-cat" cases. This is particularly the case in historically litigation-prone environments – including the U.S., Germany and Australia. Actions taken by governments in fighting the physical impacts of climate change can all be drivers for increasing litigation. Therefore, the political landscape of particularly litigation-prone regions should be closely monitored to understand the exposure of insurance companies.

In 2020, there was an escalation in the use of litigation (according to the United Nations Environment Programme, nearly doubling *versus* the number of cases in 2017) and in climate and environmental advocacy, which generated greater public awareness on this issue and also pressured policymakers into enacting and implementing more ambitious climate policies⁽¹⁾. According to the Grantham Research Institute on Climate Change and the Environment, from 2019 to 2020, there were a total of 421 climate litigation cases and over 2,000 national laws and policies addressing

climate worldwide⁽²⁾. For instance, climate litigation cases may be brought by plaintiffs on a variety of grounds:

- › **claims against companies for causal contribution to climate change.** Lawsuits for contribution to climate change often originate on the basis of public/private nuisance or negligence. However, an increase in product liability lawsuits has been observed – with claims being sought to mitigate against future losses as well as for current and direct impacts. In 2015, a Peruvian citizen filed claims against RWE, Germany's largest electricity producer, for alleged climate damages⁽³⁾;
- › **claims that companies have defrauded shareholders and misrepresented the impacts of climate change on their business.** For example, the State of New York filed such a claim against Exxon Mobil, which was recently closed and could set the ground for future claims⁽⁴⁾;
- › **corporate greenwashing (misleading advertisement) claims.** For example: Volkswagen was involved in a diesel emissions scandal, which cost the company €31.3bn globally in fines and settlements⁽⁵⁾. In April 2021, New York City sued three major oil companies for allegedly misrepresenting themselves by selling fuels as "cleaner" and advertising themselves as leaders in fighting climate change⁽⁶⁾;
- › **claims related to professional negligence or failure to adapt to climate change risk.** Several accounting firms have been accused of signing off on accounts that don't make provision for climate risks. Other industries could also fall foul of this type of litigation, such as architects and engineers, for negligence in use of non-climate resilient materials;
- › **litigation to accelerate climate policy action.** Pension funds and investment funds have been criticized for failing to incorporate climate risk into their decision-making and for failing to disclose climate risk to their beneficiaries;

› **claims dealing with the violation of human rights obligations.** In recent years, claimants have relied on constitutional and human rights laws in their efforts to hold states accountable. Between 2015 and May 2020, litigants brought 36 lawsuits against states, as well as three lawsuits and one investigation against corporations for human rights violations related to climate change.

Future rulings on a number of copy-cat cases which have arisen will likely speed up the transition to a lower-carbon economy by forcing governments to take action. For example, in May 2021, a Dutch court ordered Royal Dutch Shell to deepen planned greenhouse gas emission cuts (by 45% between 2019 and 2030, vs Shell's commitment of -20%), in a landmark first instance ruling⁽⁷⁾ that may set a global precedent for legal action against energy companies elsewhere. Moreover, given the current COVID-19 crisis, many countries have announced the importance of providing economic relief while focusing on a green recovery from the pandemic. Therefore, litigants could be driven to file new lawsuits, including by linking the current global health crisis to the climate emergency⁽⁸⁾.

In conclusion, preceding climate change cases have not set enough precedent in case law, but new laws and regulations have spawned new liability risks, with new litigation strategies being developed in different jurisdictions. The insurance industry will need to be conscious of the changing risk profile associated with increasing disclosure and the significance of being recognized as a sustainable business. Litigation is increasingly seen as an important tool for change and the current context will likely generate a highly litigation-prone environment. Consequently, companies that fail to acknowledge and respond sufficiently to this evolving risk landscape could potentially witness impacts on both their reputation and their profitability.

(1) https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/07/Global-trends-in-climate-change-litigation_2020-snapshot.pdf

(2) https://climate-laws.org/litigation_cases

(3) <https://www.unepfi.org/publications/climate-change-publications/liability-risk-and-adaptation-finance/>

(4) <https://fortune.com/2020/10/06/volkswagen-vw-emissions-scandal-damages/>

(5) <https://www.reuters.com/article/us-volkswagen-results-diesel-idUSKBN2141JB>

(6) <https://www.reuters.com/business/energy/new-york-city-sues-exxon-bp-shell-state-court-over-climate-change-2021-04-22/>

(7) <https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2021:5339&showbutton=true&keyword=shell>

(8) https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/07/Global-trends-in-climate-change-litigation_2020-snapshot.pdf

5.6 Climate-related health insurance impacts

Climate change may impact our **Health & Protection** business in line with the findings from the ACPR exercise (see section 5.2) which focuses on two main scenarios:

- › vector-borne diseases (dengue, malaria, etc.) with an increase in the probability of pathogen transmission by mosquitoes, ticks, or fleas, mainly because of a rise in temperatures resulting in a shift of hospitable land for those insects. Naturally, this probability varies depending on the

location of the insured population and on their vulnerability to vector-borne diseases;

- › pollution in urban areas deteriorates air quality, resulting in a higher frequency of respiratory related diseases and deaths.

The main insurance guarantees that might be impacted are death, health (consultation and hospitalization) and disability (work stoppage). **Our first analyses indicate that the Health & Protection business should be**

rather resilient to those scenarios in the long run (30 years horizon). This is largely related to the fact that when analyzing our three main types of guarantees, the impacts are expected to be limited, and involving only limited rate increases for clients, if any at all. However, we deem that the increase of pollution is a rising concern and further studies will be engaged to better project and estimate the consequences of such deterioration.

5.7 Climate-related impacts on AXA's own operations

Finally, climate change may also impact AXA's ability to operate if office buildings become inaccessible, commuting and business travel is disrupted, etc. AXA leverages its existing operational risk framework through risk assessments and scenario stress testing. These scenarios, which are designed with our business and modelling experts on a yearly basis, include a climate focus and consider the geographic location of AXA's premises. For example, an increasing frequency of floods in Western Europe can result in potential damages on premises, such as power outages or unavailability of sites. Business continuity initiatives are therefore key to ensure that employees can work safely and

in good conditions in case these scenarios happen.

The COVID-19 crisis and massive but successful deployment of remote working tools and practices shows the importance of such business continuity work. In 2021, as the crisis continues, we have set a global "Smart Working" strategy. This initiative will be deployed to all markets by 2023 and will combine both remote work and office presence. Also, to closely monitor any trend or new climate-related impact, AXA regularly conducts benchmarks with peers to discuss and challenge the models used internally.



6. Other information

6.1 Green Business

A new regulatory framework

Since March 2021 and the entry into force of the Sustainable Finance Disclosure Regulation (see section 2), the European in-scope companies of the Group (e.g. life insurance companies, insurance intermediaries, asset managers) must publish on their websites and in product pre-contractual documentations, information on how they take into account Sustainability Risks⁽¹⁾ and Principal Adverse Impacts⁽²⁾ in their investment decision-making/advisory processes.

As part of our SFDR-mandated disclosures, we provide to end-clients information on AXA's green investments volume (see section 4) and carbon emission reduction targets (see section 4). For instance, our General Accounts promote specific climate risk-related investment practices:

- › following the Group's green investment target, local insurance companies are

committed to increase their current holding of green investments among all available investment asset classes, including government bonds, corporate bonds, infrastructure projects and real estate assets;

- › local entities also participate in the Group's commitment to reduce carbon emissions across General Accounts investment portfolios by 20% by 2025 (corporate bonds, listed equities and real estate assets, see section 6).

All in all, **hundreds of savings, retirement and protection products have been impacted by the SFDR**. In particular, AXA France Vie has reinforced the transparency on its approaches to Sustainability Risks for over 50 financial products. The implementation of the first level of the SFDR was under the governance of the RISSC and involved various stakeholders, both at Group and entity levels,

from Sustainability teams to Products and Investment teams. The entities and products disclosures will be supplemented with the coming into force of the implementing regulations under the SFDR and the Taxonomy Regulation. However, this work is undertaken on a "best approach" basis as we still lack totally accurate information.

90%

AXA IM funds compliant with Articles 8 or 9 SFDR

Products and services

In addition to reorienting its investment strategy, AXA develops savings and insurance products and services with environmental added value. A few examples are described below.

AXA IM fund range correlation to EU standards

In 2020, in an environment where EU and national regulators are putting in place new standards and requirements notably to address greenwashing concerns, AXA IM evolved its RI funds categories to ensure its products such as the Human Capital, Women Empowerment, Clean Economy and Global Green Bonds funds remain in line with best practices in the markets, but also that they are easy to understand by clients.

AXA IM evaluates that 90%⁽³⁾ of its eligible funds and strategies within Equities, Fixed Income and Multi-Asset – representing the

majority of assets managed by AXA IM – fall within the scope of Articles 8 or 9 of the Sustainable Finance Disclosure Regulation (SFDR⁽⁴⁾), the most demanding and stringent EU sustainable disclosure requirements for investment funds:

- › **Article 9:** 5% (€20bn of assets under management) of funds are now classified as sustainable or impact funds, demonstrating a sustainable objective and are therefore categorized as Article 9. The **ACT Family of Funds** is designed to help clients target specific sustainability goals around issues such as climate change and inequality while continuing to adopt the reinforced approach to sustainability risks and good governance

(1) Pursuant to the SFDR, a sustainability risk ("SR") is an environmental, social or governance event or condition that, if it occurs, could cause an actual or a potential material negative impact on the value of the investment.

(2) Pursuant to the SFDR, a principal adverse impact ("PAI") is the impact of an investment decision or advice that results in negative effects on sustainability factors (environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery matters).

(3) All percentages exclude non applicable assets (assets that are managed outside the EU and therefore not in scope of the regulation). The reference to SFDR product categories is provided on the basis of the European Directive (EU) 2019/2088 on the sustainability-related disclosures in the financial services sector ("SFDR Regulation") and state of knowledge as of March 10, 2021. As of publication date, the SFDR-related regulatory technical standards are not yet finalized and enforced. The product categorization shall be re-assessed once such regulatory technical standards are completed and may evolve.

(4) <https://www.axa-im.com/important-information/sfdr>

practices as described above. Alongside financial returns, these funds target positive outcomes related to ESG criteria and/or to the United Nations Sustainable Development Goals. Investment decisions are guided by both the financial and impact goals. Within this family are two categories:

- **sustainable funds** (€19.8bn at end 2020) aim to embed ESG into the portfolio construction process, in an even more material and intentional manner. Every fund in this group targets one or more specific sustainable objectives related to the ESG pillars (for example, carbon footprint) to further refine the investment universe,
- **impact funds** (€2.1bn at end 2020) incorporate the demands of the

Sustainable category but will seek out businesses and projects that can potentially have an intentional, positive, measurable and sustainable impact on society and/or the environment. These funds will also report against impact criteria aligned to specific UN SDGs;

- › **Article 8:** 85% (€392bn of assets under management) of funds promote environmental or social characteristics and are ESG integrated, therefore are categorized as Article 8. The **ESG Integrated Family of Funds** use data and research, exclusions and proactive stewardship to help build ESG input into the investment process. To do so we draw even more attention to sustainability risks for these funds, excluding issuers that have the lowest ESG scores (see

ESG integration section) as well as those which do not follow good governance practices. This level of ESG integration can potentially reduce risk to help us achieve better risk-adjusted returns. Within this group, funds in the “ESG Integrated+” category go a step further by targeting an ESG score higher than that of the benchmark or universe;

- › **Article 6:** 10% (€48bn of assets under management) of AXA IM’s funds integrate and assess sustainability risks and are therefore categorized as Article 6. These only apply sector exclusions (controversial weapons, coal, oil sands, palm oil, soft commodities – see section 4), which are considered as a tool to manage the worst sustainability risks.

Local entity P&C and savings products

AXA France Perspectiv’ESG Savings products

AXA France offers Responsible Investment funds to its retail customers, as well as ESG-managed funds (which may be AXA IM funds or third-party funds). AXA France’s Unit-Linked “Perspectiv’ESG” product has all the

underlying funds evaluated on their financial performance and ESG practices, and include labeled platforms (based on official French savings labels). The Perspectiv’ESG offer aims to answer society challenges linked to climate

change or an ageing population. The product features a reforestation angle whereby each new deposit triggers the planting of a tree – 30,000 have been planted since 2018.

AXA France “Assurance Citoyenne”, an ESG integration approach to retail products

AXA France created the “Assurance Citoyenne” label in 2015, which guarantees that all insurance contracts benefit clients as well as positively impacting society. In 2019, this initiative was adapted and deployed on saving contracts under the “Épargne citoyenne” label. These two labels are based on an assessment built in collaboration with external stakeholders and audited by an independent third party. Our engagements are communicated publicly through the label’s four pillars, which are the following: “Trust” (e. g. simple contracts for readability

and transparency), “Prevention” (e. g. preventive services or financial education to minimize the risks our clients are facing for themselves, their goods and their savings), “Fairness” (e. g. product accessibility for populations usually excluded from insurance mechanisms, etc.) and “Environment” (e. g. paperless contract, investment decisions based on environmental impact). For example, on the “Environment” pillar, since 2020, the Professional Multi-risk policy systematically includes a “Green Guarantee” that encourages clients to rebuild using low-

emission material: in case of fire, storm, hail or natural disaster guaranteed by the contract, AXA France finances part of the investments aiming at reducing GHG emissions from the affected premises (thermal insulation, heating promoting renewable energies, photovoltaic panels...). Funding can be up to 10% of the amount of the allowance with a maximum of €100k. Since 2015, 6.5m of “Assurance Citoyenne” and “Épargne citoyenne” contracts have been sold.

AXA Switzerland – Automotive insurance/Repair instead of replacing

There are 6m vehicles driving on Switzerland’s roads, including 4.6m passenger cars. While serious accidents are fortunately decreasing, minor damage to bodywork, windshields, and headlights is on the increase. However, even minor damage is often not repaired. Instead, whole components are simply replaced with new ones, despite the availability of alternative options. This generates extra

costs and pressures on natural resources. AXA Switzerland therefore supports a different approach whereby so-called “micro repairs” involve repairing damaged components rather than simply swapping them out. More emphasis on skilled workmanship and less of a throwaway mentality helps reduce pressure on resources and cut CO₂ emissions.

6.5m

"Assurance Citoyenne" contracts sold by AXA France since 2015

AXA XL climate & pollution products

› AXA XL's **Environmental liability** team in France offers two biodiversity-related products: an "Environmental Risks" policy covering Environmental Impairment Liability and Guarantee, and a "M&A Environmental policy" that facilitate the rehabilitation of former polluted industrial sites and help limit artificialization of soil and biodiversity loss. In 2020, **AXA XL France partnered** with the broker Marsh to better preserve biodiversity by encouraging clients to carry out Biodiversity impact assessments and integrate the results into their accident risk prevention and management plan. Joint clients with Marsh, meeting the above

criteria, are offered a 25% reduction of the deductible for "Environmental Risks" policies;

› AXA XL's North America **Construction** business has developed tailored Builders Risk insurance programs to address clients' mass timber project risks. Mass timber is a building material that is gaining popularity in North America as it is considered a more sustainable building material, reducing the need for steel and cement;

› AXA XL Global **Energy Property** writes Upstream, Downstream & Power business including Renewable energy. Renewables

correspond to onshore and offshore wind, concentrated solar power and photovoltaic solar plants, hydro plants through pumped storage, run of the river, tidal energy and wave energy and biomass or biofuel. In 2020, this segment represented 8% of the portfolio (in terms of premium) and it is expected to grow as the conventional energy operators massively invest in renewable energy. AXA XL Global Energy Property is supporting those clients by providing them adequate coverages, while gradually phasing out clients that do not meet our coal and oil sands policy criteria (see section 4).

AXA Climate – Parametric “resilience” solutions

AXA Climate provides immediate protection to communities facing climate risks in order to prevent them from falling into poverty. By drawing on the latest advances in technology and data science to protect vulnerable communities from the effects of climate change, AXA Climate provides parametric insurance solutions based on satellite and weather data that triggers quick and automatic payouts within a few days after a natural catastrophe or extreme weather event has struck. AXA Climate has also developed early warning systems using

satellite and other weather data to anticipate and initiate contingency planning before a natural catastrophe occurs. Climate change is another field that AXA Climate is working on, developing a unique global risk adaptation platform to provide risk assessments and tailored adaptation plans.

AXA Climate works closely with governments and international organizations to develop public-private partnerships in emerging markets. Public-private partnerships represent over half of the portfolio. AXA

Climate's public clients include all major international sovereign risk pools which provide governments protection against natural disaster risks including tropical cyclone, earthquake, excess rainfall and drought. AXA Climate also works with governments in the agriculture sector to protect farmers against yield losses due to multiple climate risks. For example, AXA Climate supports the national agriculture insurance scheme in India which allows more than 55m farmers to benefit from agriculture insurance.

AXA XL Risk Consulting services – Helping corporate clients to mitigate climate risks

The Risk Consulting division of AXA XL works closely with corporate clients to help them translating climate hazards into a risk, which means quantifying the physical and economic impacts of climate change on their assets and business operations and implementing appropriate risk metrics into decision-making process. AXA XL Risk Consulting services models the unique vulnerability of assets to hazards, e.g. estimate the physical damage associated to a given flood water depth, and quantify a wide range of direct and indirect economic consequences, such as the property damage

associated with the said flood, the risk of disruption of the upstream supply chain or downstream distribution, the risk of interruption of production. Recent examples include:

› natural hazards prioritization analysis, aimed to identify regions and sites – among a client's portfolio, or supply chain – potentially more affected by natural hazards, as of today and due to climate change in the next 30 years;

› water stress risk assessment, i.e. the assessment of potential water shortage and

related impacts on business continuity and communities, as of today and in the next 30 years.

In addition to risk assessment, risk engineering is also able to support clients in tailoring the best risk mitigation strategy, and identify which countermeasures should be taken to control losses, or accelerate the pace and scale of adaptation, for instance reducing the physical vulnerability of assets by retrofitting, identifying alternate suppliers, creating backup stocks, or transfer risks, etc.

New Energy Risk – Low carbon performance insurance

New Energy Risk (NER), a member of the AXA XL group of companies, develops performance insurance solutions for the technical risk associated with breakthrough low-carbon technologies (e.g. renewable energy, fuel cells, energy storage, energy efficiency, carbon capture, hydrogen, waste to energy, and biofuels). This is possible thanks to its proprietary and bespoke risk modeling and assessment.

Products include solutions for performance insurance, warranty backstops, and business interruption insurance. These ultimately seek to reassure customers and/or financiers who would otherwise not accept new technology performance risk. NER-supported clients have unlocked over US\$2bn in capital for their sustainable technologies, companies, and projects supported by over US\$1bn in total insurance capacity. By enabling

capital efficiency, new technologies go more quickly from development to deployment and commercial scale with widespread customer adoption. Aggregated NER client projected results include: 449,000 tons/year waste processed, 695,000 MWh/year clean energy generated, 50m gal/year alternative fuel produced, and 320,000 tons/year CO₂e avoided.

A new Green business strategy

AXA's climate strategy, which has required significant efforts from many teams, is advanced and recognized as such. In 2021, AXA has started to explore the definition of a "green premiums" target applicable to our Commercial Lines, SME and Retail P&C business, together with a strategy framework, implementation roadmap and taxonomy of green products. This target will serve to organize our efforts and measure progress, as well as promote product innovation. It is expected to launch by Q4 2021.



6.2 Climate & ESG training and customer communications

ESG, RI and climate training

120.000
AXA employees

to be trained with AXA's
"climate school"

AXA has developed an in-house e-learning training module to provide all members of the investment teams worldwide with both AXA's vision of responsible investment and concrete information about RI governance, policies, external commitments, and an exercise in building a portfolio with a high ESG performance.

AXA IM also plays an active role in promoting the acceptance and implementation of ESG issues within the investment industry through educational documents for clients with regards to TCFD and Article 173, a dedicated RI website with all policies and thought leadership pieces, an RI annual report, as well as ESG rating and reporting material. AXA IM also organizes workshops on RI, ESG training for insurance clients, on-site demonstration of RI tools, tailored programs for clients, and participates actively in seminars and public forums on ESG investing, Impact Investing, climate finance. As an example, in 2020, we have trained Investment and Client teams on the recent regulatory evolutions and how they are implemented at AXA IM. Training efforts are being reinforced in 2021, with more widespread access to external training on ESG and climate.

AXA France trains and inform its sales representatives and employees on responsible savings, Group initiatives, SRI news and customer expectations *via* internal channels for both existing and new sales representatives. In 2020, more than 500 advisers from our distribution network and employees completed a digital training that aimed at raising awareness about RI and

more than 400 advisers from our distribution network attended workshops dedicated to ESG stakes and moderated by asset managers. ESG investment is also integrated into the training modules of all 3 of AXA France's distribution networks (tied agents). This year, the Perspectiv' ESG managed fund was complemented with two new profiles. On this occasion, a set of communication materials containing SRI content (reminder of the minimum number of labeled funds invested, extra-financial measurement of funds, responsible themes) were sent to agents. There is also specific documentation dedicated to ESG available for advisers in the form of thematic sheets, videos, tutorials. These are useful materials to convey an educational discourse about RI for customer meetings by sales. AXA France informs its customers about ESG investment (labeled funds, AXA's exclusion policy, ESG criteria, etc.) with all communication channels: commercial brochures, magazines, website, emailing, newsletter, social networks, etc.

The Corporate savings team also conducts dedicated commercial events (morning meetings, supervisory tips, onsite customer presentations) as well as customer engagement on ESG (operations during the Employee savings week, podcast on SRI).

These initiatives are part of a larger ambition of AXA Prévoyance & Patrimoine ("A2P") to become the first professional network of responsible investment and insurance providers and has been identified as a best practice through the Group's "Purpose Accelerator" Program.

Launch of AXA's "Climate School"

A majority of employees around the world are ready to take action on climate change in the context of their work. Their engagement is an opportunity for companies facing the challenge of sustainable transformation. These employees/citizens want to get involved and expect the same from their employer. In response to this challenge, AXA Climate launched the "Climate School"⁽¹⁾, which is the first program that adds value for human resources and sustainability departments to inform and train all employees to achieve the sustainable transformation of their profession. The online training program is structured along 2 major lines:

- › science: to understand climate change, natural resources, biodiversity and the impact it has on our lives. Six in-depth courses organized around 40 short videos and quizzes;
- › action: sustainable transformation affects all professions today. Job by job, employees have to understand how and map out their roadmap in order to act and adapt. 10 courses per profession (IT, HR, Purchasing, Finance, Legal, etc.) organized around 50 short videos and quizzes.

For its own employees, AXA created a 2-hours training to increase awareness and prepare employees for action, through three training modules: scientific perspective, business perspective and team perspective.



AXA Climate School: "We want to help employees succeed in the sustainable transformation of their business"

As a global insurer, AXA is in a unique position to understand climate-related shifts and associated risks and, above all, the interconnections between the environment, the economy and health. We see it as AXA's duty to use this scientific knowledge of the causes and consequences to protect our customers.

We have built our content with two strong points in mind: Employees first. 76% of employees are ready to act on climate change in their work. We harness this energy to train employees and lead the sustainable transformation "from the inside". Action-driven, we also provide concrete tools to adapt in each business, starting today, and we strive to collaborate with companies facing the same environmental challenges.

We have chosen to produce a 100% digital content that will allow us to reach all employees in all countries instantaneously, as enabled and normalized by the transformation effected over the last year. We will of course support our clients with synchronous learning options, and, when the situation allows, face-to-face in order to reach all levels of the company.

Antoine Denoix, CEO AXA Climate

(1) <https://www.climate.axa/climate-school-2/school>

6.3 Direct environmental footprint management

Although AXA’s “direct” environmental footprint is relatively small compared to investments or underwriting, it is key to address it because it contributes to lead by example as well as improve our operational eco-efficiency. AXA has implemented an environmental reporting process since 2002. This reporting is audited yearly and published in Part 4 of our 2020 Universal Registration Document.



In 2020 our emissions have decreased drastically... thanks to lockdowns

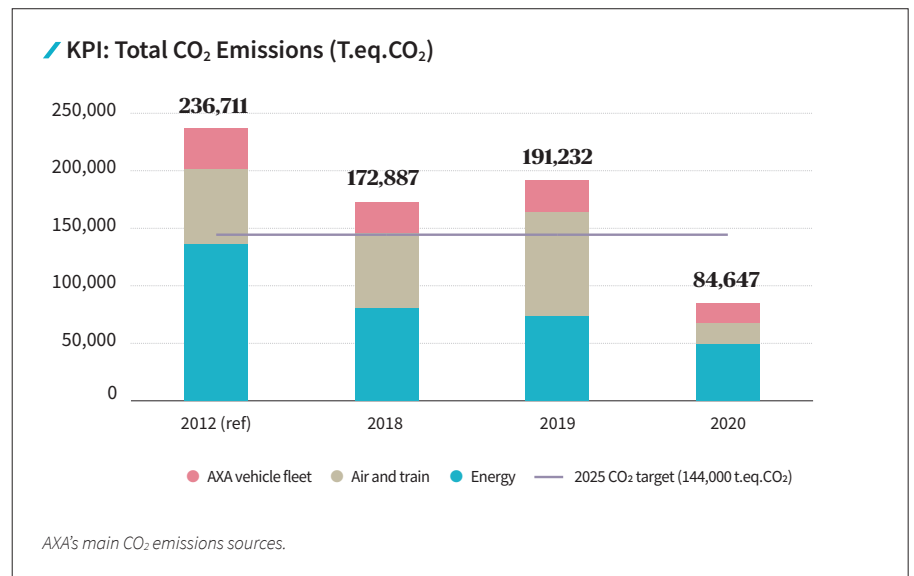
-38%

AXA’s CO₂ emissions per FTE 2012-2020

-20%

AXA’s CO₂ emissions reduction target 2019-2025

AXA’s 2020 performance and 2025 targets for its operations



The COVID-19 pandemic accelerated the decrease of AXA’s carbon footprint with a significant impact on consumption and carbon emissions, especially business travel. In the meantime, to avoid a “rebound” effect, efforts are being made such as the transformation of the Group’s working methods, with most employees working remotely on a full-time or part-time basis.

AXA has developed **new objectives** based on the approach promoted by the Science Based Targets initiative (SBTi), which AXA joined in 2015. More specifically, AXA has chosen the “Sectoral Approach to Decarbonization” to define its 2019-2025 objectives, aimed at achieving the goals of the Paris agreement. AXA has submitted to the SBTi a target of **-25%** for energy consumption, car fleet and business travel perimeter.

This objective is part of a broader framework that integrates among others the new measures related to AXA’s IT activities and which translates into an **overall reduction by 20%** of the Group’s CO₂ emissions by 2025 compared to 2019 (energy, car fleet, business travel and office automation and IT activities perimeter).

Refining our analysis of emissions streams

Scope 2 “location-based” emissions accounting

Until 2020, AXA’s scope 2 CO₂ emissions were calculated using a hybrid methodology⁽¹⁾. To be aligned with the GHG protocol recommendations and to better follow our efforts in terms of electricity procurement, we are now publishing location-based scope 2 CO₂ emissions⁽²⁾.

Scope 2 - CO ₂ emissions: Powerconsumption (t.eq. CO ₂)			
	2018	2019	2020
Market-based	69 160	62 765	40 894
Location-based	95 476	88 558	63 914

(1) For electricity, if the primary source of electricity is known, ADEME emission factors are used. Otherwise, either we use the emission factor provided by the electricity suppliers or the average emission factor for electricity in the country. For other secondary energies (heating and cooling networks) we use the emission factors provided by ADEME or the supplier if the secondary energy is produced from a primary renewable source.


(2) For this calculation, we use the emission factors by country for electricity (from ADEME and European Environment Agency for European countries) or the ADEME emission factors for other secondary energy.

IT footprint

Reducing the carbon footprint of our IT activities involves monitoring their energy consumption as well as their equipment needs. This approach was developed following the recommendations of The Shift Project's "LeanICT" publication⁽¹⁾. For the first time, AXA has measured the footprint of its digital activities, which amounts to **27,845 t.eq.CO₂** in 2020 (market-based). This footprint is divided into four main categories and estimated according to two calculation methods (market- and location-based).

AXA Information System Environmental footprint indicators		2020 emissions (t.eq. CO ₂)
Scope 2 emissions: Electricity consumption of data centers	Market-based	2,492
	Location-based	5,947
Scope 2&3 emissions: Electricity consumption of terminals	Location-based	4,099
Scope 3 emissions: Purchased IT equipment	Location-based	16,234
	Market-based	5,019
Scope 3 emissions: Purchased services	Market-based	5,019
	Location-based	7,697

* For this calculation, we use the country's electricity power mix given that part of the consumption is out-of-the-office

 For more information about AXA's environmental footprint management please refer to **Chapter 4.3 of our 2020 Universal Registration Document⁽²⁾**.

Carbon neutrality and offsetting

To be consistent with its investment and insurance-related commitments to climate neutrality and the Paris Agreement, AXA also commits to the same ambition for its operations by targeting a 20% CO₂ emissions reduction (2019-2025), and by offsetting the remaining emissions from energy consumption, car fleet, business travel, IT services and equipment. As of 2020, **AXA's operations became carbon neutral** by offsetting 105,900 t.eq.CO₂.

AXA selected a wetland forest restoration project represented by Ecosphere+⁽³⁾: the Sumatra Merang Peatland project⁽³⁾ in Indonesia. Contributing to the restoration of 23,000 ha of peatland rainforest in the Merang biodiversity zone, the project generates "Verified Carbon Credits" in recognition of its contribution to climate change mitigation and ecosystem services. AXA's involvement and support for the Sumatra Merang project actually started in 2017, with contribution

to the funding of the restoration and conservation of this critical ecosystem as part of the Impact Investing initiative managed by AXA IM Alts. AXA recently intensified its efforts to support conservation in this region by setting up a dedicated financing facility for future projects⁽⁴⁾. AXA is therefore in a unique position to support restoration projects in this area through both financing the projects over the long term and purchasing the resulting carbon credits.

A local climate neutrality commitment: AXA Switzerland

AXA Switzerland reduced the amount of CO₂ emitted by 69% between 2012 and 2020 for its operations. It plans to go a step further by becoming carbon neutral. To achieve this target, AXA Switzerland will continue its reduction efforts and cut its 2019-level carbon emissions by an additional 21% by 2025. All unavoidable emissions from energy use, business travel, IT, sales agents, commuting, home-office and suppliers will be offset by supporting carbon removal projects. These projects are independently certified and include a Swiss biochar program developed and verified based on ISO 14064 guidelines and a reforestation project in Uruguay, which is verified under both VCS and CCB (Climate, Community & Biodiversity) standards.



(1) <https://theshiftproject.org/en/lean-ict-2/>

(2) <https://www.axa.com/en/press/publications/2020-annual-report> or on AXA.com

(3) <https://ecosphere.plus/sumatra-merang-peatland/>

(4) https://www.linkedin.com/posts/axa-investment-managers_axa-commits-11-million-usd-to-forest-carbon-activity-6763149827996975104-FWzZ

6.4 Climate and sustainability-related memberships

AXA supports various initiatives related to climate change and environmental protection. These include the following:

- › **Net-Zero Asset Owner Alliance** (www.unepfi.org/net-zero-alliance): described in the Strategy section. AXA leads this coalition's Methodology sub-group;
- › **TCFD**: AXA co-chaired the global industry-led Task Force on Climate Related Financial Disclosures (TCFD) upon its launch in December 2015. The TCFD was set up by the Financial Stability Board (FSB). The TCFD provides guidance on how to disclose climate change risk and opportunities. In 2019, the FSB approved AXA's renewed membership of the TCFD, notably with an ambition to investigate the relevance of "investment temperature" metrics;
- › **CEO Action Group for the European Green Deal**: this coalition, initiated by the World Economic Forum (Davos), strives to help finance the EU "Green Deal" in the wake of the COVID-19 crisis. AXA's CEO chairs this group;

- › **Climate Finance Leadership Initiative**: the CFLI, which was launched in September 2018 by the UN Secretary General, and is presided by Michael Bloomberg, seeks to develop standardized and securitized investments at scale to tackle climate change, notably within developing countries;
- › **Alliance of CEO Climate Leaders**: this is a group of 50 CEOs set up by the World Economic Forum to actively engage in global efforts to create market opportunities for tackling climate change. Its goals are to promote strong climate action including a commitment to reduce carbon emissions, to support the TCFD, to support low-carbon solutions and finance, and to promote adequate regulation. AXA joined in 2018;
- › **UNEP Finance Initiative, United Nations Principles for Responsible Investment and United Nations Principles for Sustainable Insurance**: AXA is an active member of these inter-related organizations. AXA serves on

the Global Steering Committee of the UNEP FI and the Board of the UN PSI;

- › **Insurance Development Forum**: AXA's Chairman presides the IDF since 2018. The IDF brings together the private sector insurers, reinsurers and brokers, together with the World Bank and the United Nations Development Program, with the aim to support the G20 "InsuResilience⁽¹⁾" objective of insuring 400m more people in emerging countries by 2020 against climate-related disasters and of improving their climate resilience;
- › AXA has also supported many other coalitions in the fields of climate change, ESG, RI and CSR, such as the UN Global Compact, CDP, ORSE, EpE, Finance for Tomorrow, etc. AXA's local entities also support numerous local initiatives, such as AXA HK being the first insurer in Hong Kong to join the "ESG Coalition⁽²⁾" to unify businesses with concrete carbon emission reduction actions towards a Net-Zero goal.

6.5 Academic Research

AXA supports climate risk mitigation efforts by funding top-tier scientific research through the AXA Research Fund. A scientific philanthropy initiative launched in 2008, the **AXA Research Fund** supports academic research in health, climate and environment, and socio-economic issues. The strategic focus is determined by an Advisory Board, and the selection of research projects is overseen by an independent Scientific Board.

As of 2020, the AXA Research Fund has committed €250m to support science. It has funded over 670 research projects in 36 countries, including more than 220 projects focusing on climate and environment. In 2020, the Fund selected a new AXA Chair on integrating the conservation and restoration of natural habitats into risk management and investment, supported with €1m over 5 years. The AXA Chair in Coastal Resilience at the University of California Santa Cruz (US), led by Prof. Michael W. Beck, aims to demonstrate the social and economic value of coral reefs, marshes, and mangroves in reducing the impact of coastal risks from storms.

In 2020, the AXA Research Fund focused its efforts on tackling the **COVID-19** crisis. Top-tier scientists from the research community formed the AXA Research Fund COVID-19 Task Force. Among them, three AXA chairholders specialized in environmental issues gathered for a [webinar](#) to discuss the interconnection of biodiversity loss, climate change, and the pandemic, and the lessons that could help mitigate the next health crisis. The AXA Research Fund also gathered the insights of top-tier scientists and AXA experts in a [publication](#) devoted to "Confronting a Global Crisis", with an emphasis on the critical connection between the environment, the economy, and our own health.

In 2020, the AXA Research Fund launched a [publication](#) on "**Biodiversity at Risk: Preserving the Natural World for Our Future**". This collection of interviews, articles, and desk research discusses the critical nature of biodiversity and the interdependencies between nature, climate change, the economy, and security, based on insights from scientists and biodiversity experts supported by the AXA Research Fund.

The report also provides an overview of AXA's commitments around biodiversity loss mitigation and resilience strategies. In September, Professor and AXA Chairholder Dirk Schmeller discussed these issues in a [webinar](#) focused on the complexity of biodiversity, the services it provides, current threats, and how they impact humankind.

€250m

AXA Research Fund commitment
to scientific research

 The complete list of projects supported by the AXA Research Fund is available on www.axa-research.org

(1) <https://www.insuresilience.org/>

(2) <https://www.axa.com.hk/en/article/axa-becomes-first-insurer-join-green-monday-esg-coalition>

Building Resilience to Coastal Hazards with Natural Defenses



In 2020, the AXA Research Fund supported a new Chair in Coastal Resilience, led by Prof. Michael W. Beck at the University of California Santa Cruz (USA). Over the last 10 years, Prof. M. Beck and his team have worked on demonstrating the social and economic value of coral reefs, marshes, and mangroves for reducing flood risks from storms across more than 100 countries. Their results showed that natural habitats reduce risks to coastal communities and that we can rigorously quantify the value of their benefits from the local to the global scale. These key results create solid evidence for the value of investing in the conservation and restoration of these habitats, and the direct benefits they provide to society. **Professor Beck is working with key public and private partners to influence the integration of natural defenses in risk management and investment**, by identifying **where natural habitats can most cost effectively reduce flood risks** and catalyze innovative solutions at scale. This AXA Chair aims at determining how natural defenses can be included in risk models, financial tools, benefit-cost analyses, and in national economic metrics. Beck's work is closely linked to insurance issues, and he recently collaborated with AXA XL and The Nature Conservancy on a [publication](#) devoted to identifying cost effective opportunities to reduce risk across the Caribbean by investing in and insuring mangroves as natural infrastructure for coastal defense.

6.6 Sustainability Ratings

UN Principles for Responsible Investment

Every year, AXA answers the detailed UN PRI assessment which seeks to measure the breadth and impact of its signatories' Responsible Investment Strategies. Our 2020 scores per "module" are listed on www.axa.com: AXA has maintained an overall score of A+ since 2015.

Our 2020 scores per "module" are listed on www.axa.com: AXA has maintained an overall score of A+ since 2015.

SRI Ratings

AXA's social, societal, environmental and governance performance is rated by several specialists, including investors, brokers and rating agencies that focus specifically on the Socially Responsible Investment (SRI) market, as well as specialist organizations focused on single sustainability themes. AXA generally ranks amongst the top performers in its industry and is also included in the main international sustainability indices:

- DJSI World and DJSI Europe (based on Standard & Poor's research);
- Euronext Vigeo, World 120, Eurozone 120 and France 20 (based on Vigeo Eiris research);
- FTSE4GOOD (based on FTSE Russell research).

AXA's main SRI ratings are listed below (not all ratings are updated annually):

Agency/Organisation	Scores & ratings
Member of Dow Jones Sustainability Indices Powered by the SIF Global CSA	Score: 88/100 - Ranking in the sector: 2 nd place
	Rating: AAA (since 2015)
	Score 69/100 - Ranking in the sector: 1/51
	Score: 86/100 - Ranking: 2/278 insurance companies
	Present in the index since 2012 FTSE ESG Score: 4,4/5

Note: The Dow Jones Sustainability Index is a reference performance indicator for AXA, its methodology serves as the basis for the AXA Entities Sustainability Index since 2010, and is one of the performance metrics used to calculate long term incentives (Performance Shares) since 2016.

99th

AXA's percentile ranking (DJSI)

1/51

AXA's insurance sector ranking (Vigeo)

AXA tops 2021 Shareaction insurance ranking

In May 2021, AXA ranked no. 1 in ShareAction's 2021 ranking of 70 of the world's largest insurers' approaches to responsible investment and underwriting. Our efforts have been recognized across the assessed themes: governance, climate change, biodiversity and human rights. See [Insuring Disaster: Are insurers embracing responsible investment?](#) (shareaction.org)

6.7 Statutory Auditor's report (PwC)

Independent Limited assurance report on the Identified Information presented in AXA's Climate Report

To the directors of AXA S.A. ("The Company")

We have undertaken a limited assurance engagement in respect of the selected information listed below and reported at the page number indicated below in The Company's 2021 Climate Report⁽¹⁾ for the year ended 31 December 2020 ("the Climate report") (the "Identified Information"). This engagement was conducted by an independent and multidisciplinary team with experience in sustainability reporting and assurance.

Identified Information

The Identified Information for the year ended 31 December 2020 is summarized below:

- › Aggregate Corporate Securities (Equity and Debt) Warming Potential (section "Warming Potential": 2020 Corporate equity and debt results);
- › Climate Value at Risk for Corporate Securities (section Risk: Climate at Value-at-Risk (CvaR));
- › Carbon footprint of Corporate Securities and Sovereign Debt (section Carbon footprinting – new approaches and targets);
- › Green Bonds (section Green Investments: a focus on Green Bonds);
- › Carbon footprint of operations (section Direct Environmental footprint management).

Our assurance engagement was with respect to the year ended 31 December 2020 information only and we have not performed any procedures with respect to earlier periods or any other elements included in the Climate report and, therefore, do not express any conclusion thereon.

Criteria

The criteria used by the Company to prepare the Identified Information are available in the Company's procedures listed below and can be read at the Company's headquarters (the "Criteria"):

- › MSCI Climate Value-at-Risk and Warming Potential: Model Update Notes, February 2021.
MSCI – Carbon-Delta Methodology, January 2020 and Scope 3 Carbon Emissions Estimation Methodology, July 2020;
- › AXA Investment Managers – Green, Social and Sustainability Bonds framework, March 2021;
- › S&P Global – Trucost Data Methodology Guide – Corporate Environmental Performance, July 2019.

The Company's Responsibility for the Identified Information

The Company is responsible for the preparation of the Identified Information in accordance with the Criteria, the main elements of which are presented in the Climate report. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of the Identified Information that is free from material misstatement, whether due to fraud or error.

Inherent limitations

The Identified Information needs to be read and understood together with the Criteria, which The Company is solely responsible for selecting and applying. The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our firm applies International Standard on Quality Control and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

(1) available on the website <https://www.axa.com/en/about-us/axa-and-climate-change>

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Identified Information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements 3000, *Assurance Engagements other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board. This standard requires that we plan and perform this engagement to obtain limited assurance about whether the Identified Information is free from material misstatement.

A limited assurance engagement involves assessing the suitability in the circumstances of the Company's use of the Criteria as the basis for the preparation of the Identified Information, assessing the risks of material misstatement of the Identified Information whether due to fraud or error, responding to the assessed risks as necessary under the circumstances, and evaluating the overall presentation of the Identified Information. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above we:

- › made inquiries of the persons responsible for the Identified Information;
- › understood the process for collecting and reporting the Identified Information;
- › performed limited testing of relevant documents and records on a sample basis;
- › performed limited testing and reviewing on a sample basis of quantitative information related to the Identified Information to check that the data had been appropriately collected and reported; and
- › considered the disclosure and presentation of the Identified Information.

For Warming Potential and Climate Value at Risk information, calculated by the external provider Carbon Delta, our procedures did not include the review of Carbon Delta's databases, computation, and information systems nor quality management procedures.

For Carbon footprint information, our procedures did not include the review of the preparation of Trucost's database.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether the Company's Identified Information has been prepared, in all material respects, in accordance with the Criteria.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Company's Identified Information for the year ended December 31, 2020 is not prepared, in all material respects, in accordance with the Criteria.

This report, including the conclusion, has been prepared solely for the directors of the Company as a body, to assist them in reporting on the Company's climate-related performance and activities. We permit this report to be disclosed within the Climate report, to enable the directors to demonstrate they have discharged their governance responsibilities by commissioning an independent assurance report in connection with the Climate report. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the directors as a body and the Company for our work or this report save where terms are expressly agreed and with our prior consent in writing⁽¹⁾.

Neuilly sur Seine, France

24 June 2021

PricewaterhouseCoopers Audit

Bénédicte Vignon
Partner

Sylvain Lambert
Partner in charge of the Sustainable
Performance & Strategy Department

⁽¹⁾ The maintenance and integrity of the Company's website is the responsibility of the directors; the work carried out by the assurance provider does not involve consideration of these matters and, accordingly, the assurance provider accepts no responsibility for any differences between the Climate report of the Company on which the assurance report was issued or the assurance report that was issued and the information presented on the website.

6.8 Disclaimer

Cautionary statement regarding forward looking statements and important legal information

This Climate Report may include statements with respect to future events, trends, plans, expectations or objectives and other forward-looking statements relating to the AXA Group's future business, financial condition, results of operations, performance, and strategy as they relate to the climate objectives and other goals set forth herein. Forward-looking statements are not statements of historical fact and may contain the terms "may", "will", "should", "continue", "aims", "estimates", "projects", "believes", "intends", "expects", "plans", "seeks" or "anticipates" or words of similar meaning. Such statements are based on Management's current views and assumptions and, by nature, involve known and unknown risks and uncertainties; therefore, undue reliance should not be placed on them. In particular, the actual achievement of the climate-related and other goals set forth herein may differ materially from those expressed or implied in such forward-looking statements. Furthermore, many of the factors impacting the achievement of our climate goals may be more likely to occur, or more pronounced, as a result of catastrophic events, such as weather-related and other catastrophic events, including pandemic events. Please refer to Part 5 – "Risk Factors and Risk Management" of AXA's Universal Registration Document for the year ended December 31, 2020 (the "2020 Universal Registration Document"), available on AXA's website (www.axa.com), for a description of certain important factors, risks and uncertainties that may affect AXA's business and/or results of operations particularly in respect of the COVID-19 crisis. AXA assumes no obligation to update or revise any of these forward-looking statements, whether to reflect new information, future events or circumstances or otherwise, except as required by applicable laws and regulations.

This Climate Report refers to certain non-financial metrics, such as ESG scores, key performance indicators, controversy scores, climate or sustainability-related metrics and benchmarks, as well as other non-financial data, all of which are subject to measurement uncertainties resulting from limitations inherent in the nature and the methods used to determine them. Non-financial metrics used herein generally have no standardized meaning and may not be comparable to similarly labelled measures used by other companies.

The measurement techniques used for determining non-financial metrics and data may involve complex modelling processes and research. The use of different measurement techniques can also result in materially different measurements, while the precision of these techniques may vary. In addition, the determination and use of non-financial metrics and data, in particular when integrating sustainability risks or the impact of investment decisions on sustainability factors in investment processes, remains subject to the limited availability of relevant data: such data is not yet systematically disclosed by issuers, or, when disclosed by issuers or collected from third party data providers, it may be incorrect, incomplete or follow various reporting methodologies. Furthermore, most of the information used to determine non-financial metrics or factors is based on historical data, which may not be complete or accurate or may not fully reflect the future non-financial performance or risks of the underlying investments.

Although a rigorous selection process is applied to data providers with a view to provide appropriate levels of oversight, AXA's ESG and other processes, including AXA's proprietary ESG scoring tool, may not necessarily capture all non-financial risks and, as a result, AXA's assessment of the impact of its investment decisions on sustainability factors may not be accurate, or unforeseen sustainability events could adversely affect the performance of the investment portfolio. While the methodologies for non-financial scoring applied by AXA are regularly updated to take into account changes in the availability of data or methodologies used by issuers to disclose non financial information, but there is no assurance that such methodologies will be successful at capturing all non-financial factors.

The information contained in this Climate Report may have been obtained from, or established on the basis of, various third-party sources, including, but not limited to, third-party benchmarks and indexes. AXA does not guarantee the accuracy, adequacy, or completeness of such information, and shall not be obliged to update or revise this Climate Report.

In accordance with applicable laws and regulations, AXA's 2020 Universal Registration Document includes, in particular, (i) all the components of the Annual Financial Report (*rapport financier annuel*) referred to in Article L. 451-1-2(I) of the French Monetary and Financial Code (*Code monétaire et financier*) as well as in Article 222-3 of the AMF General Regulation (*Règlement Général*); (ii) all disclosure matters required to be included in the Board of Directors' report to AXA's Shareholders' Meeting held on April 29, 2021, established pursuant to Articles L. 225-100 *et seq.* and L. 22-10-35 *et seq.* of the French Commercial Code (*Code de commerce*); and (iii) all the elements required to be included in the corporate governance report established pursuant to Articles L. 225-37 *et seq.* and L. 22-10-8 *et seq.* of the French Commercial Code.

This Climate Report does not form part of AXA's 2020 Universal Registration Document and is not intended to address or provide information in respect of, nor should it be relied upon as addressing, or should any reference therein to AXA's 2020 Universal Registration Document be construed as addressing, any of the abovementioned requirements of (i) the Annual Financial Report, (ii) the Board of Directors' report to AXA's Shareholders' Meeting or (iii) the corporate governance report. For the avoidance of doubt, any reference in this Climate Report to Article 173 of Law No. 2015-992 of August 17, 2015 should be construed solely as a reference to paragraph VI thereof and related implementing measures.

Where reference is made to a website in this Climate Report, the contents of such website do not form part of this Climate Report.

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