SUSTAINABLE INVESTMENT REPORT

In line with article 173 from the French Energy Transition for Green Growth Law

With you from A to Z

Allianz
I am glad to present you our Sustainable Investment Report for the year of 2017.

This report outlines our ESG approach as well as our climate change strategy integrated into the investment activities of Allianz France. Through our initiatives we are both a solution provider as well as a solution facilitator in today’s era of energy transition.

Capital is always neutral, it cannot tell good from bad, but investors owning the capital must have principles. We believe that every single cent we invest today is to shape a world which we and our future generation want to see and live in. By taking responsible investment decisions, we have the possibility to shape our common future, a sustainable and better future.

While this report necessarily contains some very technical aspects, we have tried to create an interesting document, as well, for readers who are no experts in the ESG area.

I hope you enjoy your reading.

Sincerely yours,

Matthias Seewald,
CIO of Allianz France
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*Numbers shown in Figures and Boxes of this report come from Trucost and/or Allianz France internal research
EXECUTIVE SUMMARY

The ESG approach of Allianz France centers around sustainability. We consider ESG criteria applicable to our entire investment portfolio in three forms; each form is integrated into and builds upon the previous one, there is a gradual shift from short-term towards long-term value creation along the three forms.

The first form is responsible investment by exclusion of harmful products based on ESG criteria: We generally do not invest in coal-based business models and banned or controversial weapons.

The second form is ESG-compliant investment where ESG factors are actively addressed to lead to at least no harm regarding environmental and social aspects. We integrate ESG factors across asset classes: ESG scoring for listed assets, ESG referral process for nonlisted assets; we consider ESG factors along the investment lifecycle: governance; asset manager selection, monitoring and review; knowledge exchange with different stakeholders; voting and engagement.

The third form is impact investing where consideration of ESG criteria leads to measurable positive environmental and/or social impacts along with market-rate returns. We define environmental impact investing as green investments: by end of 2017, Allianz France’s green investments amount to €3.15bn.

As part of its ESG focus, Allianz France has also developed its own climate change strategy, named as carbon smart. It is based on three pillars: Identification (a), Assessment (b) and Management (c), each pillar is an input for the next, overall this serves as both a roadmap and a checklist for us to steer our portfolio to align with a 2°C scenario.

a. We identify climate-related risks as transition risks, physical risks; and climate-related opportunities as core solutions, or satellite solutions.

b. We assess carbon performance, portfolio resilience and alignment using both snapshot metrics and forward-looking metrics. By using methodologies highlighted by the Science Based Targets Initiative (SBTi), we check our portfolio alignment with the 2°C scenario. The result shows that our portfolio is not yet fully in line with the 2°C scenario because of misalignment in some sectors. By calculating Climate Value-at-Risk from different carbon pricing scenarios, we perform climate stress tests to better understand the financial implications of the gap between current carbon prices and future carbon price targets varying by sector and geography. We also advance our research by linking transition risks and physical risks on issuer level to obtain comprehensive risk profiles.

c. We manage climate-related risks and opportunities on the basis of two main levers: investment and engagement. We make use of issuer and sector level information delivered from in-house and external research to impact a range of investment activities, such as the setting of portfolio decarbonization targets, stock selection, or asset allocation decisions. We invest in climate mitigation as well as climate adaptation; we engage with different stakeholders such as asset managers, issuers, policy makers and NGOs to fully assume our role as both a solution provider and a solution facilitator.
SUSTAINABILITY, WHAT IS IT?

CONCEPT OF SUSTAINABILITY
Sustainability and sustainable development are often used interchangeably. At Allianz France, we adopted and adapted the definition for sustainability from the Bruntland Report for the World Commission on Environment and Development in 1992 and the World Summit on Social Development in 2005. For us, sustainability refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. It has three pillars: Economic development, Social development and Environmental protection.

ESG AS PROXY FOR SUSTAINABILITY
ESG, referred to as environment, social and governance, is one good and practical proxy for sustainability. At Allianz France, we consider ESG as a good proxy for sustainability because it covers many issues of sustainability (though not always exhaustive), for example, climate change, human capital, corporate governance and so on. We also consider ESG as a practical proxy for sustainability because indicators of many ESG issues can be measured and verified to a satisfactory accuracy.
GROWING MOMENTUM

With numerous international consensus achieved, the importance of sustainability has gained worldwide recognition in recent years. We identify three major milestones which elaborate on the underlying meanings of sustainability/sustainable development, shown as below:

• Addis Ababa Action Agenda:
  During the Third International Conference on Financing for Development, Heads of State and Government and High Representatives, gathered in Addis Ababa from 13 to 16 July 2015. They affirmed their strong political commitment to address the challenge of financing and creating an enabling environment at all levels for sustainable development in the spirit of global partnership and solidarity in the outcome document Addis Ababa Action Agenda.

• Sustainable Development Goals (SDGs):
  On September 25th 2015, countries adopted SDGs (17 goals with 169 targets) through to 2030, to end poverty, protect the planet, and ensure prosperity for all, as part of the United Nations “Transforming our world : 2030 Agenda for Sustainable Development”. SDGs are transformative steps that aim to shift the world onto a sustainable and resilient path.

• Paris Climate Agreement:
  The 2015 Paris Climate Agreement’s central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.
THE ECOSYSTEM

To achieve sustainability, everyone needs to do their part: governments, the private sector, civil society and citizens. From France, Europe to an international perspective, an ecosystem emerges, helping to make the way towards sustainability:

• **France:**
The French Energy Transition for Green Growth Law (Article 173), adopted in August 2015, strengthened mandatory carbon disclosure requirements for listed companies and introduced carbon reporting for institutional investors, defined as asset owners and investment managers.
It sets out a roadmap to mitigate climate change and diversify the energy mix. The law includes ambitious targets around reducing greenhouse gas emissions and overall energy consumption, reducing the share of fossil fuels in favor of renewable energy and increasing the price of carbon. Due to its pioneering nature, the Energy Transition Law has picked up interest across the globe.

• **Europe:**
The 2030 climate and energy framework, adopted by EU leaders in October 2014, set three key targets for the year 2030: at least 40% cuts in greenhouse gas emissions (from 1990 levels), at least 27% share of renewable energy and at least 27% improvement in energy efficiency.
The European Commission also established a High-level Expert Group (HLEG) on Sustainable Finance in September 2016. Its final report sets out strategic recommendations for a financial system that supports sustainable investments, including:
a) a classification system, or “taxonomy”, to provide market clarity on what is “sustainable”.
b) a European standard for green bonds.

• **On an international level:**
Numerous international initiatives on diverse levels are shaping and leading the way towards sustainability, including Principles for Responsible Investment, Portfolio Decarbonization Coalition, the NDC Partnership, Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD).
In June 2017, the CEO of Allianz Group, Oliver Bäte, along with other CEOs of leading companies, signed the Statement of Support for the TCFD Recommendations and called for improved disclosure across sectors and regions.
In this report, we fully reflect the spirit of TCFD recommendations to disclose climate-related information on our investments, a correspondence check is made and will be shown in a separate document.

ROLE OF ALLIANZ FRANCE INVESTMENT

It is becoming clear that we need to act quickly in face of planetary sustainability thresholds. At the Allianz France Investment unit, we believe that living within boundaries has made us more inventive than we were when we believed there were no boundaries.
The role of the Allianz France investment unit is to be both a solution provider and a solution facilitator for a sustainable tomorrow.
The ESG approach of Allianz Investment Management Paris (AIM Paris) centers around sustainability: AIM for sustainability.

Our objective is to contribute to creating a positive future for our business and society through addressing ESG risks and opportunities in our investment processes.

We consider ESG criteria in three forms applicable to our entire investment portfolio; each form is integrated into and builds upon the previous one, as shown below. There is a gradual shift from short-term towards long-term value creation along the three forms.

### RESPONSIBLE INVESTMENT

The first form is responsible investment by exclusion of harmful products based on ESG criteria. We generally do not invest in coal-based business models and banned or controversial weapons. The Allianz Group defines coal based business models as:

- mining companies deriving 30% or more of their revenues from mining thermal coal.
- electric utilities deriving 30% or more of their generated electricity from thermal coal.
CHAPTER 3 ESG@ALLIANZ FRANCE INVESTMENT

ESG-COMPLIANT INVESTMENT

The second form is ESG-compliant investment where ESG factors are actively addressed to lead to at least no harm regarding environmental and social aspects.

We integrate ESG factors across asset classes.

• Listed assets - ESG scoring

ESG scoring at Allianz France is an approach developed by the Allianz Group ESG Office and Allianz Investment Management Group. The methodology is used to systematically evaluate and manage material ESG risks for listed assets (fixed-income and equity).

ESG data processing

Allianz France ESG scoring is based on ESG ratings and scoring data provided by MSCI ESG Research. Issuers of listed asset classes (fixed income and equity) are assessed along 37 key ESG issues.

ESG threshold setting

All corporate issuers in the MSCI ESG Rating universe are grouped by region (Europe, North America, Asia-Pacific and Emerging Markets). For sovereign issuers no regional categorization is done.

To identify companies with a low ESG performance, our ESG scoring uses an ESG threshold. This one is set at the bottom 10 percent in ESG performance for each issuer group. In other words, the 10th percentile score is set as the threshold for a given issuer group.

Focus on below threshold issuers

Currently, below threshold issuers are the focus for our discussions.

• Non-listed assets - ESG referral process

Screening and assessment

All potentially sensitive businesses are screened by Allianz France on a transaction-by-transaction basis. We apply Allianz Group Sensitive Business Guidelines¹ to help detect ESG risks and to investigate whether these risks are sufficiently managed and addressed by potential investees.

If necessary, an ESG-critical transaction is referred to Group ESG office or other internal ESG resources for a detailed ESG assessment.

Result

Based on the outcome of this assessment, we make the decision either to proceed with a transaction, to proceed and require the mitigation and management of ESG risks, or to decline a transaction on ESG grounds.

We integrate ESG factors along investment lifecycle.

FIGURE 2

ALLIANZ FRANCE INVESTMENT
THREE-FORM ESG APPROACH

RESPONSIBLE INVESTMENT
ESG-COMPLIANT INVESTMENT
IMPACT INVESTING

¹For details, see: https://www.allianz.com/v_1506636000000/media/responsibility/documents/Allianz_ESG_Integration_Framework.pdf

We stopped financing coal-based business models by the end of March 2016; and new/re-investments of fixed-income in coal are prohibited. More importantly, the threshold of coal-based business models will be progressively reduced from currently 30% to 0% in 2040.
• Governance

Group ESG Board

Established in 2012, the Group ESG Board is the highest governing body for sustainability-related issues. It consists of three Allianz SE Board members and several department heads. They meet quarterly and are responsible for ensuring ESG integration across all business lines and core processes dealing with insurance and investment decisions. It also defines the ESG strategy and ambition of the Group. The Group ESG Board also takes ownership of corporate responsibility and climate-related topics, and leads on associated stakeholder engagement. Functional departments provide regular updates on sustainability issues directly to the Group ESG Board.

The Group ESG Board is supported by the Group ESG Office, which is part of the corporate responsibility function at Allianz SE. The role of the Group ESG office is to:

a) develop and implement the ESG strategy according to the decisions of the ESG Board;

b) coordinate between the different business units in developing ESG related projects;

c) engage in dialogues with civil society stakeholders, industry bodies and interest groups.

Allianz France ESG @ Investment committee

Led by the Allianz France CIO (Chief Investment Officer) office, ESG@Investment committee consists of chosen colleagues from different functions as well as the ESG contact from the CIO office. This adds an interactive element to Allianz France ESG governance:

a) ESG committee members meet regularly to exchange on ESG topics where a special focus is put on climate related issues;

b) discussions of each ESG committee session are documented and are reported on a timely manner to the management committee by the CIO office;

c) ESG committee members are informed of any decision or recommendation made by the management committee on ESG topics and this in turn feeds the next session of ESG committee.

• Asset manager selection, monitoring and review

Asset manager selection

Allianz cooperates with asset managers who consider ESG risks and opportunities as core in their investment activities, i.e. all our asset managers adhere to their own ESG policies which fulfill the ESG requirements of Allianz and/or are signatories of PRI (Principles for responsible investment).

Asset manager monitoring

For listed assets, we adopt MSCI weighted average key issue scores (WAKI) as basis to monitor ESG tail risks. Asset managers have to document and submit explanations for positions/purchases below thresholds to Allianz.

Asset manager review

We hold a bi-annual ESG Deep Dive meeting with some of our asset managers to review our stance on ESG topics. Besides following a “comply or explain” approach in the review of below thresholds issuers, the ESG Deep Dive meetings serve as an occasion to have a detailed reflection on the most problematic positions within the portfolios and also to review potential discrepancies among different ESG rating/scoring methodologies.

Also, for those asset managers, we integrate ESG criteria in the steering KPI along with financial indicators with a weighting of growing importance. The rationale of this scorecard is to convey the message to our asset managers that ESG is not seen by Allianz as an additional restriction but should be part of the investment process.

• Internal knowledge sharing

Allianz Climate Solutions

Allianz Climate Solutions (ACS) is the Climate Change Center of Excellence of Allianz Group. It acts as a focal point and platform for Allianz’s risk and investment expertise worldwide to encourage the development of solutions for a changing climate.

Allianz France exchanges actively with Allianz Climate Solutions, to gain insights on climate change topics, to manage carbon risks in our portfolio and to pilot our investment strategy.

ESG newsletter

ESG relevant news and insights are incorporated into an internally-distributed ESG newsletter, written and published on a regular basis by the CIO office of Allianz France, and distributed to every colleague of the investment management team, as one way to raise ESG awareness and cultivate ESG intelligence within Allianz France.
• Voting activities – advancing active ownership

ESG criteria are well-integrated into Allianz France’s voting policy, which is an internal document, serving as a guideline for our own voting practice and also reference for our asset managers’ proxy voting. The consistency of asset managers’ voting policy with that of Allianz France is guaranteed via the asset manager selection process, and we review the reporting on proxy voting activity performed on Allianz France dedicated funds on a regular basis to examine the consistency.

• Engagement – creating Talanoa

The engagement activities of Allianz France can be best described in one word: Talanoa. It is a traditional word used in Fiji and across the Pacific which became known to the public during COP23, it is to reflect a process of inclusive, participatory and transparent dialogue. The purpose of Talanoa is to share ideas, skills and experience, embrace mutual respect and to make wise decisions for the collective good.

We advocate engagement with different stakeholders such as asset managers, issuers, policy makers, and NGOs to fully assume our role as both solution provider and solution facilitator.

Engagement with issuers

In 2017, Allianz Group introduced a more systematic approach to engaging with investee companies based on detailed analysis and identification of companies falling below our ESG Scoring threshold. Through this process, a number of companies that may constitute material ESG risks and concerns - ranging from toxic emissions and waste to child labor and negative impacts on communities, are identified. Allianz Group has entered into collaborative dialogues with these companies to communicate concerns, understand their position and, ultimately, drive positive change, from which Allianz France also benefits. We see this engagement as more impactful and mutually beneficial than automatically withdrawing our investments without first providing an opportunity for change. We are aware that meaningful change can take several years and, if we don’t see improvements over time, we will act accordingly.

For engagement with sovereign issuers, the leverage of Allianz France is different than with corporate issuers. Nevertheless, Allianz France as a responsible and sustainable investor, is seeking ways to engage such issuers by identifying collaborative engagement opportunities with sovereign issuers.

Also, most of Allianz France’s asset managers are engaged into direct discussion with issuers or as member of the International Corporate Governance Network (ICGN).

Allianz Group Engagement with other stakeholders

1992
Founding Member, UN Environment Finance Initiative (UNEP FI)

2002
Member, UN Global Compact (UNGC)

2007
Signatory to the Principles for Responsible Investment (PRI)

2015
Member of the Portfolio Decarbonization Coalition (PDC)

2016
Founders Circle, the B Team

2017
• Signatory of International business declaration
• Member of Climate Action 100+ initiative

Allianz France exchanges actively with think tanks/NGOs and participates in several working groups of FFA (French Insurance Federation).

• Client communication

We are aware of a supply-demand mechanism in the ESG area, meaning that on the one hand, we always try to exchange with clients, to understand their expectations for sustainability so as to enhance/adapt our products to their expectations and needs. On the other hand, we actively communicate our ESG approach and efforts to clients during client meetings and plan to add ESG elements in product introduction brochures, as a way to raise awareness of clients and to stimulate demand for ESG related products.

BOX1: ESG INTEGRATION INTO UNIT-LINKED

Allianz France consistently integrates ESG elements in our unit-linked products. To date, we have selected and provided to our customers 14 funds with distinct ESG features.
ONE STEP FURTHER: IMPACT INVESTING

The third form is impact investing where the consideration of ESG criteria leads to measurable positive environmental and/or social impacts along with financial returns.

Traditionally, impact investing is predominantly found in illiquid asset classes. At Allianz France, we define impact investing as any investments, regardless of liquid or illiquid assets, that seek social and/or environmental benefits along with market rate financial returns.

As such, listed equities, and publicly-traded bonds, also form an integral part of impact investing, bringing scalability and simplicity of implementation.

Regarding environmental impact investing, which we classify also as green investments, we are continuing our efforts to develop an in-house green assets taxonomy.

We are also, in parallel, advancing our social impact investing efforts.

FIGURE 3
ALLIANZ FRANCE UNDERSTANDING OF IMPACT INVESTING

Using our three-form ESG approach, we mainstream ESG within Allianz France investment management: doing more ESG, doing better ESG. In other words, we deepen understanding of ESG and enhance ESG practices over time.
Meridiam Transition Fund

The Meridiam Transition Fund is a dedicated fund for energy transition. Its creation was announced during COP21 in Paris. The fund invests mainly in new infrastructure projects (greenfield) linked with energy efficiency: local energy services (such as heating networks), electricity and gas networks as well as renewable energy, in France and the European Union.

Box 2: View
What is the difference between ESG-compliant investment and impact investing?

We think that impact investing should be one step further than ESG-compliant investment, having significant positive impact with evidence supplied by comparable metrics to monitor, verify and report. As such, all impact investing are ESG-compliant investment, but only a portion of ESG-compliant investment are considered as impact investing. For example, by end of 2017, Allianz France has investments of €69mn in renewable energy debt, €380mn in debt financing of green buildings, €47mn on sustainable infrastructure (€25mn for The Thames Tideway Tunnel, €22mn for Porterbrook), and a commitment of €25mn in the Meridiam Transition Fund. These €521mn of investments are all categorized as ESG-compliant investment, but not impact investing, due to the fact that relevant impact metrics are still in the process of development.

Porterbrook

Porterbrook is one of the three major companies in the UK that own the rolling-stock that transports people on the UK rail network every day. Porterbrook has a rolling stock fleet of around 6,000 vehicles on lease or on order, which includes over 4,000 passenger vehicles. Besides investing in new trains which provides freight and train operating companies with modern rolling stock of high standards of reliability and performance, Porterbrook finances the refurbishment and upgrading of existing stock to modern standards. As a result, passenger comfort and safety enhance, thereby extending the operational life of the vehicles. Porterbrook itself employs about 100 people, but given its responsibilities for maintenance and new-build, it is indirectly responsible for several thousand jobs in the UK supply chain.

The Thames Tideway Tunnel

The Thames Tideway Tunnel is a project to build a new 25km sewage tunnel under the River Thames in London to capture sewage that overflows from the sewers and to prevent it from polluting the River Thames. The Tideway vision is to “Reconnect London with the River Thames”. This project has the following benefits (i) creating potentially hundreds of jobs within the marine environment, (ii) demonstrating the river’s capacity to support 24hr a day high-volume logistics and (iii) reducing the Tideway carbon footprint. Moreover, the project is making positive steps in encouraging more involvement of women by having a target of gender parity on the project by the end of construction in 2023.

By end of 2017, Allianz France’s green investments (i.e. environmental impact investing) amount to €3.15bn.
Climate change has no borders. Communities already experiencing the impacts of global warming are often the least equipped to deal with it. It is probably the most urgent issue among all ESG concerns. As an investor, Allianz France commits to take a leading role in tackling the climate challenge.

We have developed a climate change strategy named carbon smart. It is based on three pillars: Identification, Assessment and Management, each pillar is an input for the next one, overall this serves as both a roadmap and a checklist for us to address both climate risks and opportunities, evolving along time.
IDENTIFICATION

Climate change is a two-side story; it brings significant risks as well as opportunities. Risks relate to potential loss whereas opportunities associate with potential gain. Allianz France systematically identifies both risk and opportunity factors, endeavoring to create a common future where gain is higher than loss. There are two types of climate risks:

- **Transition risk:** risks that investors face as the world economy is changing towards a 2°C or even lower trajectory.
- **Physical risk:** exposure to physical impacts directly induced by climate change.

**FIGURE 6**

**ALLIANZ FRANCE CARBON SMART IDENTIFICATION**

**IDENTIFICATION**

- **Risk**
  - Transition risk
  - Physical risk

- **Opportunity**
  - Core solutions
  - Satellite solutions

Different sectors have different roles to play in the low-carbon transition, depending on their business characteristics and emissions profiles. While the energy sector holds the key to low-carbon transition (energy production and use make up two-thirds of total greenhouse gas emissions globally), we consider two types of opportunities:

- **Core solutions**
  Core low-carbon energy technologies and energy efficiency
e.g. wind, solar PV, LED lights.

- **Satellite solutions**
  Solutions in businesses not directly linked to energy sector
e.g. waste, water, climate adaptation
Note that satellite solutions may evolve into core solutions over time.

**FIGURE 7**

**TYPOLOGY OF CLIMATE RISK**

ASSESSMENT

To navigate in the low-carbon transition, we need a high-quality compass; a diverse and informative metrics set, including asset specific metrics, sector/technology specific metrics. Leveraging on our in-house expertise and partnering with external research organizations, we seek to develop two main types of metrics:

- **Snapshot metric**
  To assess current and/or past performance, e.g. carbon footprinting and benchmarking, portfolio/issuer level green share and brown share.

- **Forward-looking metric**
  To assess future performance, e.g. climate stress test/scenario analysis, 2°C alignment check.

**FIGURE 8**

**ALLIANZ FRANCE CARBON SMART ASSESSMENT**

**MANAGEMENT**

Climate change has both descriptive (what will be) and prescriptive (what should be) sides. As investor, we have two levers to manage climate related risks and opportunities: **Investment and Engagement**.

**FIGURE 9**

**ALLIANZ FRANCE CARBON SMART MANAGEMENT**
ALLIANZ FRANCE CARBON SMART, WHERE ARE WE NOW?

In this chapter, an excerpt of metrics which we use is shown, with the support from the research organization: Trucost.

CARBON FOOTPRINT

The total portfolio value of Allianz France Investment covered in 2017 carbon footprinting is about € 61.1 bn.

A reminder of all the scopes

- Scope 1: Direct emissions from sources that are owned or controlled by the reporting entity.
- Scope 2: Indirect emissions from consumption of purchased electricity, heat and steam.
- Scope 3: Other indirect emissions in the value chain.

First tier indirect (including scope 2 and partially of scope 3): emissions from direct suppliers (airlines, equipments, food, etc).

The reasons that we choose first tier indirect:
- First tier indirect is the scope which companies have most transparency in data disclosure.
- First tier indirect captures the portion of scope 3 on which companies have an influence. Companies can reduce the footprint of their direct suppliers through their purchasing policy (supplier selection criteria).

BOX3: METRIC COMPASS: CARBON FOOTPRINT

Scope choice

Reviewing raw data, we find that most of our investee’s scope 3 emissions data are modeled. Every estimate technique requires an analysis of the investee’s activity whose granularity is a factor contributing to uncertainty. Also because of this uncertainty, the scopes we choose to calculate carbon footprinting and relevant benchmarking are scope 1 and first tier indirect.

FIGURE 10

ALLIANZ FRANCE INVESTMENT 2017 CARBON FOOTPRINT

<table>
<thead>
<tr>
<th>UNDERLYING PORTFOLIO</th>
<th>FINANCED EMISSION</th>
<th>EXPOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FULL PERIMETER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALLIANZ FRANCE</td>
<td>282.66</td>
<td>373.39</td>
</tr>
<tr>
<td>EQUITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPARISON WITH BENCHMARK</td>
<td>120.92</td>
<td>200.78</td>
</tr>
<tr>
<td>CORPORATE FIXED INCOME</td>
<td>194.19</td>
<td>310.38</td>
</tr>
<tr>
<td>SOVEREIGN BONDS</td>
<td>488.35</td>
<td>501.18</td>
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<tr>
<td>COMPARISON WITH BENCHMARK</td>
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<td>SECURITIZED BONDS</td>
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<tr>
<td>INFRASTRUCTURE AND RENEWABLE ENERGY</td>
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<td>451.00</td>
</tr>
</tbody>
</table>

FIGURE 11

CARBON EMISSIONS SCOPES

Scope 3 Upstream

Scope 2

Scope 1

Scope 3 Downstream

Upstream - Indirect (Other Suppliers)

Upstream – First Tier Indirect (Direct suppliers)

Direct (Own activities)

Downstream (Investments, downstream distributors & clients)

The full perimeter of Allianz France includes all 6 underlying portfolios (Equity, Corporate fixed income, Sovereign bonds, Securitized bonds, Infrastructure & Renewable energy and Real Estate). Green bond portfolio is excluded from corporate fixed income in carbon footprinting shown in figure 10.

The benchmarks used for Equity, Corporate fixed income and Sovereign bonds are conventional benchmarks so that to compare portfolio carbon performance with “business-as-usual” situation.

For all portfolios except sovereign bonds and real estate, underlying data are scope 1 + first tier indirect emissions; for sovereign, we use domestic consumption, export and import emissions data; for real estate, we use scope 1 + scope 2 + “hot spot” scope 3 emissions.

Source: Trucost
How we deal with double counting?
With regard to double counting, we use enterprise value (i.e. market value of common stock + market value of preferred equity + market value of debt + minority interest - cash and investments) to calculate ownership share thus eliminating double counting between equity and fixed-income; we don’t correct double counting as a result of value chain (e.g. the portfolio is invested in both the buyer and supplier company) because:
- in practice it is very hard to identify specific supplier-customer relationships for each company in a portfolio.
- we do double our risk if we invest in a company and its supplier at the same time, even if we double count and overestimate emissions at portfolio level.

Carbon footprint metric choice
Each of the following metric highlights an important aspect. We believe that the metrics should be used together for a better understanding of portfolio carbon performance.
- financed emission metric gives a portfolio’s carbon footprint per million invested, it is sensitive to market capitalization changes.
- exposure metric indicates a portfolio’s exposure to carbon intensive companies, it is sensitive to outliers.

Follow-up approach
After having carbon footprint statistics, the next step for us is to investigate both sector allocation and stock selection effect in order to understand what sector or stock is driving the results.

Finally, when using the data for stock picking or engagement, more information on the company needs to be collected, such as its business model in order to understand what drives the carbon footprint. One of the typical questions we ask is: does the company’s business model make it inevitable to be carbon intensive?
TRANTITION RISK ANALYSIS

• Portfolio alignment with 2°C scenario

Metric imperative

Transitioning to a 2°C aligned emissions pathway has become an imperative worldwide. Measuring 2°C alignment at a company or portfolio level requires the adoption of methodologies to objectively and consistently allocate emissions from a global carbon budget to the level of individual companies.

In this report, two distinct but related methodologies are used to measure portfolio alignment with 2°C scenario, both of which are highlighted by the Science Based Targets Initiative (SBTi). The methodologies are illustrated in SBTi’s publicly available literature as well as earlier academic papers.

The question to ask: Does our portfolio align with the 2°C scenario?

The answer: our portfolio is not yet fully in line with the 2°C scenario because of misalignment in some sectors.

Take the following sectors’ results as an example: As shown in the graph here below, portfolio power generation holdings are undergoing a low carbon transition at a faster rate than the implied requirement for limiting warming to 2°C, considered on a weighted average basis. Also, it is important to point out that alignment results diverge significantly between individual sectors and individual holdings within sectors, giving insight into companies with the strongest and weakest decarbonisation performance /momentum.

For companies in heterogeneous sectors, the greenhouse gas emissions per unit of value added (GEVA) - A corporate guide to voluntary climate action, published in the journal Energy Policy (2012), by Jorgen Randers.
• Climate Value-at-Risk from carbon pricing scenarios\textsuperscript{10}

Who prices carbon today?\textsuperscript{11}

As of 2017, 42 national and 25 subnational jurisdictions are pricing carbon. These jurisdictions are responsible for more than 22 percent of global emissions. The number of carbon pricing initiatives implemented or scheduled for implementation has almost doubled over the past 5 years, reaching 47 in 2017. Altogether, these actions will encompass almost half of global CO\textsubscript{2} emissions.

A way of doing climate stress test

We consider Climate Value-at-Risk from carbon pricing scenarios as a way of doing climate stress test. The gap between current and future carbon prices is defined in this analysis as the Carbon Price Risk Premium. This premium, which varies by geography due to government policy differences, and by sector due to the differential treatment of sectors in many climate change policies, reflects the additional financial cost per tonne of emissions from likely increased carbon pricing regulations.

Three scenarios are explored\textsuperscript{12}:
- Low Carbon Price Scenario: the full implementation of country Nationally Determined Contributions under the Paris Agreement. Prices in this scenario are considered likely to be insufficient to achieve the 2\textdegree C goal.
- Moderate Carbon Price Scenario: 2\textdegree C-compliant policies are implemented in the long term, but with action delayed in the short term.
- High Carbon Price Scenario: sufficient policies are implemented in a timely manner to achieve the goal of limiting climate change to 2\textdegree C (the Paris Agreement).

Excerpt of portfolio results\textsuperscript{13}

The table shows the results of 0% discount rate. Negative earning positions in the portfolio are excluded and the remaining holdings re-weighted to 100%. Note for the third metric Weighted average carbon price risk premium, it was originally calculated in USD 2016 prices, and an average USD/EUR exchange rate (1.1066) is used for the data conversion.

FIGURE 13

CLIMATE VALUE-AT-RISK FROM CARBON PRICING SCENARIOS RESULTS EXCERPT\textsuperscript{13}

<table>
<thead>
<tr>
<th>METRIC</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>% OF THE PORTFOLIO WITH AN EBITDA AT RISK&gt;10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.06</td>
<td>0.28</td>
<td>0.36</td>
<td>0.40</td>
</tr>
<tr>
<td>Moderate</td>
<td>0.40</td>
<td>4.91</td>
<td>8.54</td>
<td>3.64</td>
</tr>
<tr>
<td>High</td>
<td>11.22</td>
<td>14.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEIGHTED AVERAGE REDUCTION OF EBITDA MARGIN (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.02</td>
<td>0.04</td>
<td>0.09</td>
<td>0.11</td>
</tr>
<tr>
<td>Moderate</td>
<td>0.11</td>
<td>0.37</td>
<td>0.75</td>
<td>0.30</td>
</tr>
<tr>
<td>High</td>
<td>0.85</td>
<td>1.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEIGHTED AVERAGE CARBON PRICE RISK PREMIUM (EURM\textsubscript{N})</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>7.28</td>
<td>14.21</td>
<td>32.80</td>
<td>40.14</td>
</tr>
<tr>
<td>Moderate</td>
<td>40.14</td>
<td>130.85</td>
<td>265.14</td>
<td>106.43</td>
</tr>
<tr>
<td>High</td>
<td>304.32</td>
<td>539.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td>230.56</td>
<td>973.47</td>
<td>973.47</td>
<td></td>
</tr>
</tbody>
</table>

We make use of company and sector level information delivered from above analysis as input for a range of actions such as targeting company engagements, the setting of portfolio decarbonization targets, stock selection, or asset allocation decisions like sectoral tilting or divestment.

\textsuperscript{10} The portfolios analyzed in this analysis are Equity, Corporate fixed income and Securitized bonds.

\textsuperscript{11} Source: World Bank, CPLC (Carbon Pricing Leadership Coalition).

\textsuperscript{12} Scenarios are based on research of IEA and Climate Action Tracker.

\textsuperscript{13} The table shows the results of 0% discount rate. Negative earning positions in the portfolio are excluded and the remaining holdings re-weighted to 100%. Note for the third metric Weighted average carbon price risk premium, it was originally calculated in USD 2016 prices, and an average USD/EUR exchange rate (1.1066) is used for the data conversion.
PHYSICAL RISK ANALYSIS

To explore climate-related risks and opportunities, we need to account for physical risk.

- Risk dimension and scoring
  We consider three dimensions of physical risks.

  Market risk
  It represents the physical risks tied to the demand side of economic activity. The market risk score includes two components: country of sales and weather sensitivity.

  Supply chain risk
  It represents the physical risks tied to the supply side of economic activity. The supply chain risk score includes two components: country of origin and resource demand.

  Operations risk
  It represents asset exposure to climate hazards, such as heat stress, water stress, extreme rainfall, sea level rise, and hurricanes & typhoons. Besides a main focus on climate hazards, the operations risk score also takes into account socioeconomic risk, which is a measure of broader operating environment at the country level, i.e. a country’s ability to withstand, prevent, or otherwise recover from climate impacts based on its political, environmental, social, and economic stability.

Excerpt of results

The higher the score, the riskier the sub-sector in the portfolio. As shown in the graph, the Allianz France corporate bond portfolio has a low exposure to physical climate-related risk overall. This is due to the concentration of our holdings in sectors with low exposure (service-oriented sectors) and geographical regions with low exposure (Europe and, to some extent, North America).
Zoom-in for specific climate hazards

Companies and facilities most exposed to market and supply chain risk as well as operations risk, are identified for each portfolio.

**FIGURE 15**
ALLIANZ FRANCE CORPORATE BONDS FACILITIES-HEAT STRESS RISK

- Follow-up approach

Only by ensuring that our investments are resilient to the physical impacts of climate change, can we as investor protect our portfolios and contribute to a more resilient and sustainable society. The insight from this analysis serves as input for our systematic incorporation of physical climate risks into investment decisions as well as engagement with companies and asset managers.
As pointed out by TCFD, some organizations will likely be more affected by transition risk (e.g., fossil fuel and energy-intensive manufacturers), others will be more affected by physical climate risk (e.g., those reliant upon agriculture or long-lived infrastructure). There is a conceptual trade-off between transition risk and physical risk, in other words, lower transition risk is likely to result in higher levels of physical risk from climate change.

To explore both transition and physical risks faced by different issuers and sectors, we consider two scenarios:

- **Low warming scenario.** It is a 2°C or lower scenario, where countries go through low-carbon transition via ways such as tightening policies and regulations to limit temperature increases. In this scenario, transition risk is major and higher.

- **High warming scenario.** It is a more than 4°C scenario, where no substantial measures are taken by state and non-state actors to limit temperature increases. In this scenario, physical risk is major and higher.

Under this High-Low warming scenario, for each issuer in our portfolio, a transition risk score is designed to be the proxy risk score in low warming scenario, and a physical risk score is designed to be the proxy risk score in high warming scenario, creating integrated transition and physical risk profile on company level.

Company proxy risk score in low warming scenario is plotted in X-axis, and company proxy risk score in high warming scenario is plotted in Y-axis. Each dot represents one utilities sector issuer in our corporate fixed income portfolio by end of 2017. The higher the score, the riskier an issuer.

We could see that these chosen companies have relatively medium to low risk in a high warming scenario, but their risk diverge significantly in a low warming scenario.
As an investor, Allianz France systematically integrates climate and sustainability criteria along its investment lifecycle and considers a multi-asset, multi-theme and multi-geography strategy as indispensable to contribute to energy and ecological transition.

**Shades of green**

Green bonds are essentially identical to normal bonds except that: those bonds are labeled as “green” by their issuers. In principle, proceeds are earmarked for new and/or existing green projects. The issuers track and report on the use of proceeds to ensure green compliance. At least until now, there have been no clear rules on what green actually means. The lack of clarity has led some environmentalists to accuse bond issuers of making misleading claims about supposed environmental benefits. The European Union has signaled that it will step in to oversee the green bond market, using a EU green bond standard to bring greater clarity to investors. However, before the regulation comes out, the concern of green washing is always there.

Inspired by CICERO second party opinion framework, drawing on available market information and internal research, Allianz France shades of green is a categorization method to assess the greenness of our currently issuer self-labeled green bond portfolio. Taking into account green bond expected impact and the likelihood of realizing its impact, green bonds are categorized as light/medium/dark green bond to indicate low/moderate/high positive impact.

Out of € 465mn green bond investment of Allianz France by end of 2017, the shades of green result (percentage as of investment amount) is shown below:

**Box 6: Allianz No.1 DJSI**

September 8, 2017 – Allianz Group has taken the leading position among all rated insurance companies in the latest Dow Jones Sustainability Index (DJSI). Allianz has been one of the most sustainable companies in the insurance industry ever since 2000. Since then, the company has been an integral part of the investment universe of the well-known Dow Jones Sustainability Index. DJSI ranks companies according to environmental, social and governance (ESG) criteria, assessing their sustainability strategy and performance.

The DJSI is the world’s best-known sustainability index. Only the most sustainable companies of the 2,500 Dow Jones Global Total Stock Market Index (DJGTSM) are included. With this methodology, the DJSI combines the approaches of classical equity indices with purely ecology-oriented indices.

![FIGURE 17](image)

**Factsheet on green bond investments**

Our green bonds portfolio primarily focuses on renewable energy, energy efficiency, green transport and green building.

The green bonds with a focus on renewable energy and efficiency generate the higher level of avoided emissions (per million invested).
• **Renewable energy**

Avoided emissions from renewable energy investment

Assuming on country level, renewable electricity generation replaces non-renewable electricity mix scenario, the underlying renewable energy projects in which Allianz France has invested contributed to 100,000 tCO2 emissions avoided\(^{18}\) in the year of 2017.

How much is **100,000 t CO2 emissions avoided** in one year? It is equivalent to 0.15% of Austria’s total CO2 emissions in 2016, 6.62% of Mali’s total CO2 emissions in 2016, 12.41% of Chad’s total CO2 emissions in 2016 and 33.1% of Central African Republic’s total CO2 emissions in 2016.

• **Green real-estate**

Shades of green

Allianz France has certified green buildings across different types, such as HQE (High Quality Environmental Standard), BREEAM (Building Research Establishment Environmental Assessment Method) and LEED (Leadership in Energy and Environmental Design).

Reflecting upon the similarities and differences of certification schemes, taking into account certification levels within one scheme, Allianz France shades of green is a method to categorize certified green building as light/medium/dark green building to indicate low/moderate/high positive impact.

Out of €2.2bn certified green building investment of Allianz France by end of 2017, the shades of green result (percentage as of investment amount) is shown below:

Some green practices

- mandatory environmental certification of any major renovation projects.
- environmental certification “In Use” (e.g. HQE Exploitation) of all main assets.
- connection of all directly managed buildings to a unique Energy Management Portal to facilitate energy consumption monitoring: 80% already completed.
- electricity bought directly by Allianz France is 100% renewable (e.g. wind, solar) since end of 2015. Focusing on corporate real estate, it means that electricity used is 100% renewable; and for real estate invested portfolio, electricity of common parts (managed directly by Allianz France) is 100% renewable.

**BOX7: ALLIANZ JOINS SBTI**

Science Based Targets is a joint initiative by CDP, the UN Global Compact, the World Resources Institute (WRI) and WWF that aims to raise corporate ambition and help businesses pursue bolder solutions to climate change. The initiative supports companies to set emission reduction targets in line with the level of decarbonization required to keep global temperature increase below 2°C compared to pre-industrial temperatures, as described in the latest Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC).

Allianz wants to be a key enabler and supporter of low-carbon transition. We therefore join and actively support the Science Based Target Initiative (SBTi).

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\(^{18}\) Avoided emissions are emission reductions that occur outside of a product's life cycle or value chain, but as a result of the use of that product. Renewable energy has a key role to play in the decarbonisation of the energy sector. To better illustrate the potential impact of renewables, we estimate the greenhouse gas emissions avoided as a result of our renewable energy investment.
With increasing sustainability awareness across our organization, with a deepening ESG approach, with more forward-looking climate change strategy, we are fulfilling our role as both a solution provider and a solution facilitator in this energy transition era. Knowing comes with caring, and caring comes with change. Allianz France is committed to developing ESG and climate know-how thereby bringing positive changes to our clients as well as our planet.
Carbon budget: the estimated amount of carbon dioxide the world can emit while still having a likely chance of limiting global temperature rise to 2 degrees Celsius above pre-industrial levels.

Carbon dioxide equivalent (CO2e): the unit used to measure the impacts of releasing the different greenhouse gases, such as, carbon dioxide, methane, nitrous oxide.

Carbon footprint: a measure of the carbon emissions that are emitted over the full life cycle of a product or service and usually expressed as grams of CO2e.

Climate stress test: the assessment of how certain climate-related factors (for example, the introduction of a carbon tax) could affect the financial performance of an asset, a company or a portfolio.

Energy efficiency: using less energy to provide the same level of energy service or more.

Intergovernmental Panel on Climate Change (IPCC): the IPCC was established in 1988 by the World Meteorological Organization and the UN Environment Programme to provide the scientific and technical foundation for the United Nations Framework Convention on Climate Change (UNFCCC), primarily through the publication of periodic assessment reports.

Mitigation and adaptation: two main policy responses to climate change. Mitigation addresses the root causes, by reducing greenhouse gas emissions, while adaptation seeks to lower the risks posed by the consequences of climatic changes.

Nationally Determined Contributions: the national climate pledges submitted by 189 countries in reaching the Paris Agreement.

Non-renewable Energy: energy derived from sources that cannot be replenished in a short period of time relative to a human life span. Non-renewable sources of energy are typically divided into two types, fossil fuels (coal, natural gas and oil) and nuclear fuels.

Renewable Energy: energy derived from generally renewable resources including hydro, solar, wind and geothermal.
For more information, your contact person Allianz is at your disposal.