UK-China Climate and Environmental Information Disclosure Pilot

2019 Progress Report

CHINA UK PACT

CITY OF LONDON

中国金融学会绿色金融专业委员会
Green Finance Committee, China Society for Finance and Banking

ICBC 中国工商银行

PRI Principles for Responsible Investment

Participants

Pilot Coordinators

Forward

To achieve the goals of the Paris Agreement and our wider environmental ambitions, financial institutions worldwide need to be proactive in channelling global funds to support the green economy by monitoring and evaluating the risks and opportunities brought by climate and environmental factors.

There is increasing international recognition of the importance to integrate climate and environmental factors into mainstream financial decision-making. Established in December 2015, the Task Force on Climate-Related Financial Disclosures (TCFD) is supported by Mark Carney (Chair of the Financial Stability Board) and chaired by Michael Bloomberg. The TCFD framework has gained increasing influence, being endorsed by institutions representing $120 trillion of assets globally.

Developing green finance and promoting the green economy is of major strategic significance for China. In 2016, seven ministries and commissions including the PBoC jointly issued the first national green finance policy in the world, Guidelines for Establishing China's Green Financial System, which explicitly requires gradually establishing and improving an information disclosure system. The China Securities Regulatory Commission (CSRC) also set forth uniform standards for climate and environmental information disclosure by listed companies. The country's financial authorities began working on a unified system of green finance standards and statistics and introduced a series of regulations and standards, including: the Green Credit Statistics System, issued by the China Banking and Insurance Regulatory Commission (CBIRC) in 2013 which also organised major banks to carry out green finance self-evaluation; in 2015, the Green Bond Endorsed Project Catalogue and the Green Corporate Bond Endorsed Project Catalogue issued by the People's Bank of China (PBoC) and the National Development and Reform Commission (NDRC); and the Green Industry Guiding Catalogue issued in 2019 by seven ministries and commissions including the NDRC and the PBoC. These green finance standards have laid the foundation for climate and environmental information disclosure.

In this context, the Chinese and UK governments, at the 9th UK–China Economic and Financial Dialogue held on 15 December 2017, agreed to strengthen green finance cooperation and encouraged financial institutions of the two countries to jointly pilot climate and environmental information disclosure. After that, the Green Finance Committee, China Society for Finance and Banking ("the China Green Finance Committee") and City of London's Green Finance Initiative jointly launched the UK-China Climate and Environmental Information Disclosure Pilot. Ten Chinese and UK financial institutions joined the pilot and received comprehensive guidance from the PBoC and Bank of England. Industrial and Commercial Bank of China (ICBC) and Principles for Responsible Investment (PRI), represent each side respectively, serve as co-chairs of the pilot steering committee. The pilot is a four-year initiative, including one year of preparation and three years of action. 2019 was the second year of the pilot.

In 2019, the pilot made important breakthroughs. Firstly, the pilot was expanded to include all financial sectors. The number of pilot participants increased from 10 to 13 with the joining of PICC Property and Casualty Company Limited, Ping An Insurance (Group) Company of China and AVIC Trust Co., Ltd., in addition to Huzhou National Green Finance Reform Leading Group as an observer. With this, the pilot covered all financial sectors including banking, asset management and insurance. On the UK side, the government's

Green Finance Initiative made an announcement requiring all listed companies and major asset management companies in the UK to disclose under the TCFD framework before 2022. Secondly, the Chinese and UK participants disclosed climate and environmental information in accordance with TCFD recommendations and the Climate and Environmental Information Disclosure Framework formulated by the Chinese side in light of China's actual conditions. 2019 was the first phase of the Action Plan, and most of the Chinese participating institutions disclosed environmental information by individual disclosure reports. Thirdly, the pilot has been expanding influence gradually. Huzhou National Green Finance Reform Pilot Zone made overall disclosures with reference to the UK-China pilot framework; financial institutions including ICBC, Industrial Bank, and China Emissions Exchange (CEEX), in accordance with the requirements of the PBoC, formed a task force of standards formulation that published the Guidelines for Financial Institution Environmental Information Disclosure on the basis of the pilot practices and results; the pilot participants started to take part in international standard-setting and discussion.

This report summarises the progress of the pilot in its second year, describes the current status of the participating institutions and provides an outlook for the work in the next year.

1

Progress of the Pilot in 2019

(I) Main goals and measures of the pilot

- **Raise awareness and build capacity.** Meetings and seminars were held, among other efforts, to raise the awareness of the participating institutions and other financial institutions worldwide about the importance of climate and environmental information disclosure. Progress reports, disclosure framework and quantitative tools were developed to enhance the disclosure ability of the participating institutions and provide cases studies for other financial institutions around the world.

- **Advance the disclosure plan and framework.** Efforts were continued to implement the pilot's three-year action plan and, in the light of China's national conditions and with reference to the TCDF framework, further improve the disclosure framework for the Chinese side.

- **Implement information disclosure of pilot participants.** In accordance with the action plan and the TCFD framework and in light of their actual conditions, most of the participating institutions published individual environmental disclosures reports with plans to achieve higher disclosure targets year by year.

(II) UK-China action plan and progress

In the autumn of 2018, the Chinese and UK sides jointly released the UK-China Climate and Environmental Information Disclosure Pilot Programme Working Group Action Plan, encouraging the participating institutions to make climate and environmental information disclosures.

Environmental information Disclosure Principles:

(1) Comparable indicators. The participating institutions are required to make disclosures in a comparable way in terms of the disclosure framework, calculation methods and tools.

(2) Local appropriateness. The participating institutions should formulate their disclosure frameworks and contents in line with the TCDF recommendations and in light of local regulatory requirements and actual business conditions.

(3) Progressive advancement. As information disclosure is final presentation of a series of work done, the disclosure framework is not required to be implemented immediately, but usually years. In view of this, the three-years pilot period allows participants to achieve targets progressively year by year. The participating institutions may start with qualitative indicators and gradually switch to quantitative indicators.

(III) UK Update Summary

The action plan for UK participants is a multi-year roadmap for implementing the TCFD recommendations, represented in the image below. Key developments in 2019 have included:

Figure 1: UK Side Action Plan

Year one
- Assessing the business case
- Defining the governance process, initiating risk management and risk identification
- Disclose the governance process and initial steps taken

Year two
- Incorporate into risk management
- Identify useful metrics
- Consider how climate-related scenarios may affect the organisation
- Disclosure update, early recommendations, sectoral work

Year three
- Define targets
- Incorporate into risk management
- Integrate scenario planning
- Disclose update, recommendations, finding of scenario analysis, metrics, sectoral work

1. **More quantitative disclosure** to measure and identify where exposure to climate-related issues is likely to be concentrated. Specific examples of this include: carbon footprinting (Aviva, Brunel), percentage of revenues in high carbon sectors (HSBC), global warming potential of equity & credit portfolios (Aviva), Climate Value at Risk (Aviva).
2. **Testing of climate scenario tools.** The findings of which were presented during joint workshops.
3. **Increased focus on the application** of TCFD reporting in company engagement, selection of fund managers as well as setting targets and assessing the investment or lending strategy.
4. **Developing official guidelines for the UK financial industry.** All participants have been actively involved in UK government and financial regulator supported working groups to, ahead of the potential introduction of mandatory TCFD reporting in the UK in 2022, develop official guidelines for the wider financial industry.

Specific initiative the PRA and FCA Climate Financial Risk Forum for banks, insurers and asset managers (Aviva, HSBC, Federated Hermes, PRI as secretariat support), and the Pensions Climate Risk Industry Group for UK pension fund schemes (Brunel, PRI).

(IV) Chinese Update Summary

Environmental disclosure by financial institutions can not only improve risk management, but more importantly leverage their intermediary role in driving corporate environmental measures, thus accelerating green economy transformation and development.

1.Expanded coverage of participating institutions
Through the practice and exploration of the participating Chinese and UK financial institutions over the recent two years, the pilot has gained traction with increasing influence. As the pilot continues to move forward, the participating institutions have increased from 10 to 13 with the joining — based on a strict process of assessment and selection — of PICC Property and Casualty Company Limited, Ping An Insurance (Group) Company of China and AVIC Trust Co., Ltd. The pilot covers diverse financial sectors including banking, asset management and insurance. The Chinese participating institutions represent approximately RMB50 trillion of assets. The Huzhou National Green Finance Reform Leading Group is approved to participate in the pilot as a representative of an information disclosure region.

2.Significant progress of climate and environmental information disclosure
Under the guidance of the China Green Finance Committee and the City of London Green Finance Initiative, all the participating institutions achieved important breakthroughs in climate and environmental information disclosures in 2019. Firstly, the Chinese participating institutions, in light of China's actual conditions with reference to the TCFD framework, eventually formulated the environmental-related target framework for the Chinese side (See the chart below). Secondly, all the participating institutions across different sectors achieved substantial progress. Most banking financial institutions, such as ICBC, Ping An Insurance (Group) Company of China and Bank of Huzhou, published independent disclosure reports; some banking financial institutions made related disclosures as part of their CSR reports; based on case studies of domestic and overseas financial institutions, financial institutions in sectors including asset management and insurance explored appropriate ways to disclose environmental information in light of their business characteristics and regulatory compliance requirements. Thirdly, the participating institutions made relatively comprehensive disclosures. Their disclosures included not only qualitative information such as strategies and goals, credit policy, risk control, green products, and research, but also quantitative information including the environmental impact from operating activities and investment and financing activities, which align with the TCFD framework. In the case of ICBC, the contents of the report and the TCFD framework are indexed in the appendix. Fourthly, most of the participating institutions have committed to making climate and environmental information disclosures on an annual basis.

In advancing the pilot, the Chinese participating institutions will focus on the following areas:

1) To research quantitative tools including scenario analysis and stress testing to measure the impact of climate and environmental factors on financial institutions and the impact of financial institutions' operating activities and investment and financing activities on the environment;

2) To explore jointly in data accumulation, system construction, model development, quantitative methods, and result applications;

3) To join hands with the UK side to establish a more inclusive framework with sound methods and procedures, which reflect the disclosure targets and roadmaps of financial institutions in different sectors.

Figure 2: Disclosure target framework of the Chinese participating institutions of the pilot

Target framework

Environmental qualitative information and indicators

Overview; strategy and target; governance framework; policy and system; impact of environmental risks and opportunities; green finance innovation and cases; research results; future outlook.

Environmental quantative information and indicators

1) Quantitative information: impact of institution's business activities on the environment; impact of institution's invetsment and financing activities on the environment. Impact of climate and environmental risks on institution's opportunities and risks

2) Scenario analysis: activities or plans of scenario analysis or stress testing; models and tool; conclusions; actual applications and result, etc.

Forms of environmental information disclosure

1) An independent sustainability report or environmental information report
2) An environment section in CSR report
3) Incorporated into annual report and CSR report

2

Main Problems and Challenges

The implementation of the pilot has faced several challenges, mainly including the following:

I. start measuring climate and environmental risks and opportunities particularly in markets where there is an absence of corporate disclosure.

II. Identifying useful indicators, methodologies and tools

III. building internal capacity to understand the purpose and business rationale for implementing climate and environmental disclosures.

Over the past 12 months, participating financial institutions in the pilot have held four workshops in London, Shanghai and Beijing. These have sought to address such challenges and included contributions from knowledge partners such as the TCFD Secretariat, Carbon Tracker, CDP, the Transition Pathway Initiative, Tsinghua University, SynTao, China Beijing Environmental Exchange.

3

Areas of Agreement

Through over two years of implementation, the Chinese and UK participating institutions have reached the following consensuses based on in-depth research and exploration as well as adequate discussions and communication:

(1) **The participating institutions make disclosures in light of their actual conditions without complying a uniform set of requirements.** Financial institutions in different sectors differ in their climate-related disclosure targets and contents, and even financial institutions in the same sector are in different phases of the plan. As such, the participating institutions are allowed to advance their disclosure work in light of their actual conditions. For example, ICBC issued its Green Finance Thematic Report which, in line with China's regulatory disclosure requirements and with reference to the TCFD recommendations, gave a comprehensive introduction to its green finance activities and results in 2018. The report includes strategy and governance, policy and procedures, green finance products, green operations, green finance research, and awards and recognitions. Ping An Insurance (Group) Company of China issued its sustainability report titled To Be an Active Global Influencer, which described its endeavours and achievements of climate-related disclosure from five aspects; and Bank of Huzhou, as a representative of local commercial banks, disclosed its 2018 environmental-related information for the first time on its official website.

(2) **Sharing experience among peers is of great necessity.** The pilot provides an experience-sharing platform for the participating institutions on how to make disclosures in alignment with TCFD and other frameworks. The participating institutions highly value the opportunity to work with financial institutions in other markets and sectors and jointly advance environmental disclosure work. For example, China AMC has engaged with different listed companies on ESG topics, encouraging and helping them to improve their climate-related disclosures.

(3) **Climate-related disclosures have not only helped the participants to improve their disclosure capability but also raised their preparedness for climate and environmental risks.** Participation in the pilot has enhanced the disclosure ability of the financial institutions and, more importantly, prompted the establishment of internal mechanisms including related policies, products, risk assessment, and management procedures. By preparing the disclosures under the pilot, the participating institutions have gained a clearer understanding of their investment and business models in terms of environmental risk management. For example, Ping An was the first Chinese participating institution to release its TCFD sustainability report, which incorporates climate change risks into the strategic management.

(4) **Continuously strengthen the applicability of their climate and environmental disclosures.** Climate and environmental information disclosures are mainly for the purposes of i) assessing the resilience of investment or loan strategies against climate and environmental risks (Special column 1); and ii) assessing how financial institutions should respond to related emerging risks and opportunities.

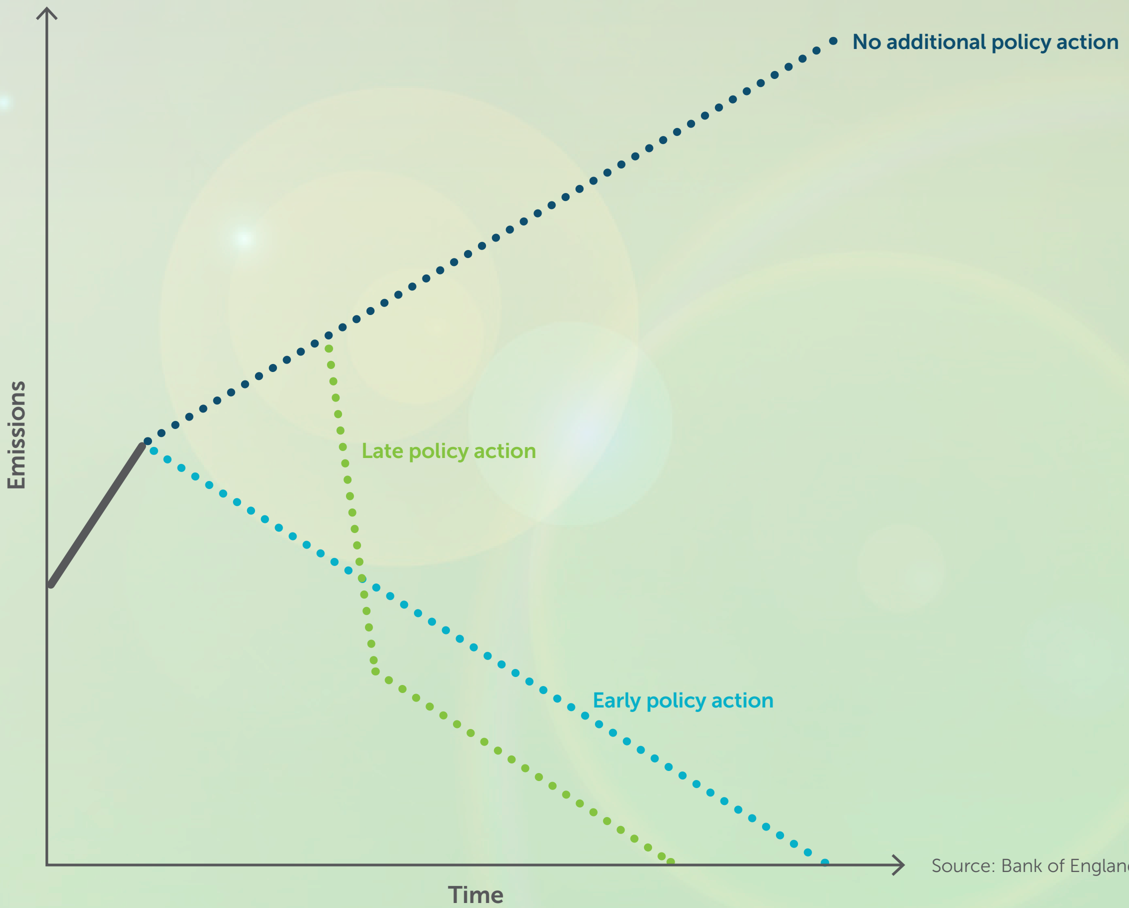
Special Column 1

The Bank of England (BoE) has identified three scenarios as climate stress testing basis in 2021 for regulated banks and insurers as well as presented the work to the Network for Greening the Financial System (NGFS), which both the BoE and the PBoC are founding members. These three scenarios are:

- **Early policy action scenario.** Immediate and decisive policy action to reduce global emissions in a gradual and orderly manner. This scenario has high, but predictable, transition risk and moderate physical risks.
- **Late policy action scenario**. Additional policy measures are delayed by 10 years, with the result that a sharper and more disruptive adjustment is required to meet climate policy goals.
- **No additional policy action scenario.** Where no new policy measures are implemented, emissions continue to rise and there is a failure to meet climate policy goals.

In each scenario, financial institutions will face a combination of physical and transition risk.

Illustrative pathway for the Bank of England's three climate reference scenarios



Source: Bank of England[1]

How financial institutions respond are illustrated by their engagement with corporates, where disclosure frameworks like TCFD can provide a benchmark, public targets for tilting toward the solutions as well as, public policy and participation in industry and stakeholder initiatives to accelerate collective action.

1 Bank of England discussion paper on "The 2021 biennial exploratory scenario on financial risks from climate change" 2019, page 10

(5) **Improving data basis of qualitative information**

(i) selecting one or two key sectors

A common challenge for financial institutions in implementing a disclosure framework is the availability of accurate disclosures from corporates on materially relevant climate or environmental information to inform financial decision making. One strategy to address this is to focus on a limited number of industries (Special Column 2).

(ii) conducting prospective analysis.

Environmental issues, notably climate change issues, are non-linear in development trend and will accelerate over time. Scenario analysis, which is already commonly used to inform investment and lending decision making, can be applied to climate and environmental problems to assist financial institutions to understand how the concentrations of risk arising from these factors could affect investment portfolios and loan books over the near to midterm. At present, various orginisations develop prospective analysis tools and methodologies for financial institutions. Each has their own features and application scenatios. Tools are classified as portfolio screening tools and industry/company analysis tools (Special Column 3).

Special Column 2

In the near term, the climate and environmental risk factors are more likely to crystalize in a select number of industry sectors. The rating agency Moody's, for example, found 11 out of 84 sectors with $2 trillion of rated debt that have high for elevated levels of climate transition risk. This is shown in the graph below.

Sectors Moody's assesses with high or elevated levels of climate transition risk[2]

Source: Moody's Investors Service

Analysis in the second year focused on a deeper dive into exposed sectors, notably coal, and variation in production costs in companies in these sectors. Research by the Carbon Tracker Initiative, of coal & utility 900 companies in 34 countries (including the UK and China) found that 42% of coal plants globally today could be operating at a loss[3].

Starting at a sector level can be an easier entry point for implementing a disclosure framework. In addition, innovation in data capture, notably through the use of physical asset or production data can help provide a new source of market information that does not depend on corporate reporting.

2 Moody's Investors Service, September 2018, Environmental Risks – Global: Heat map: 11 sectors with $2.2 trillion debt have elevated environmental risk exposure, https://www.moodys.com/research/Moodys-Eleven-sectors-with-22-trillion-of-debt-have-elevated--PR_389299

3 "Powering down coal", November 2018, page 7, https://www.carbontracker.org/wp-content/uploads/2018/12/CTI_Powering_Down_Coal_Report_Nov_2018_4-4.pdf

Special Column 3

To evaluate the features and application scenatios of a climate and environmental risk quantification tool, financial institutions would check if the tool offers:

- an alignment test of the loan book/portfolio against climate or environmental targets
- information that could be used for engagement with companies
- financial analysis on the risk and / or opportunity

A further distinction can be made between portfolio screening tools and those intended for sector/company level analysis. The image below provides an overview of free-to-use climate scenario tools that assess transition risk. More tools are available from commercial service providers[4].

Overview of free-to-use climate scenario tools

Name	Asset class	Alignment test	Company engagement	Financial analysis	China coverage
Portfolio screening tool					
PACTA	Equities, corp bonds		Under development		Autos, power, transport
IPR*	Equities, corp bonds				
Sector / company engagement tools					
TPI	Equities				
Carbon tracker	Oil & gas, coal equities				Coal equities
Science based targets	Equities, crop bonds				

* Inevitable Policy Response

Each tool has their own pluses and minuses and it is unlikely that financial institutions would rely on one tool entirely. Rather analysis of risks and opportunities is likely to be done more than once and free-to-use tools can help financial institutions get started and identify sectors where their exposure is likely to be concentrated.

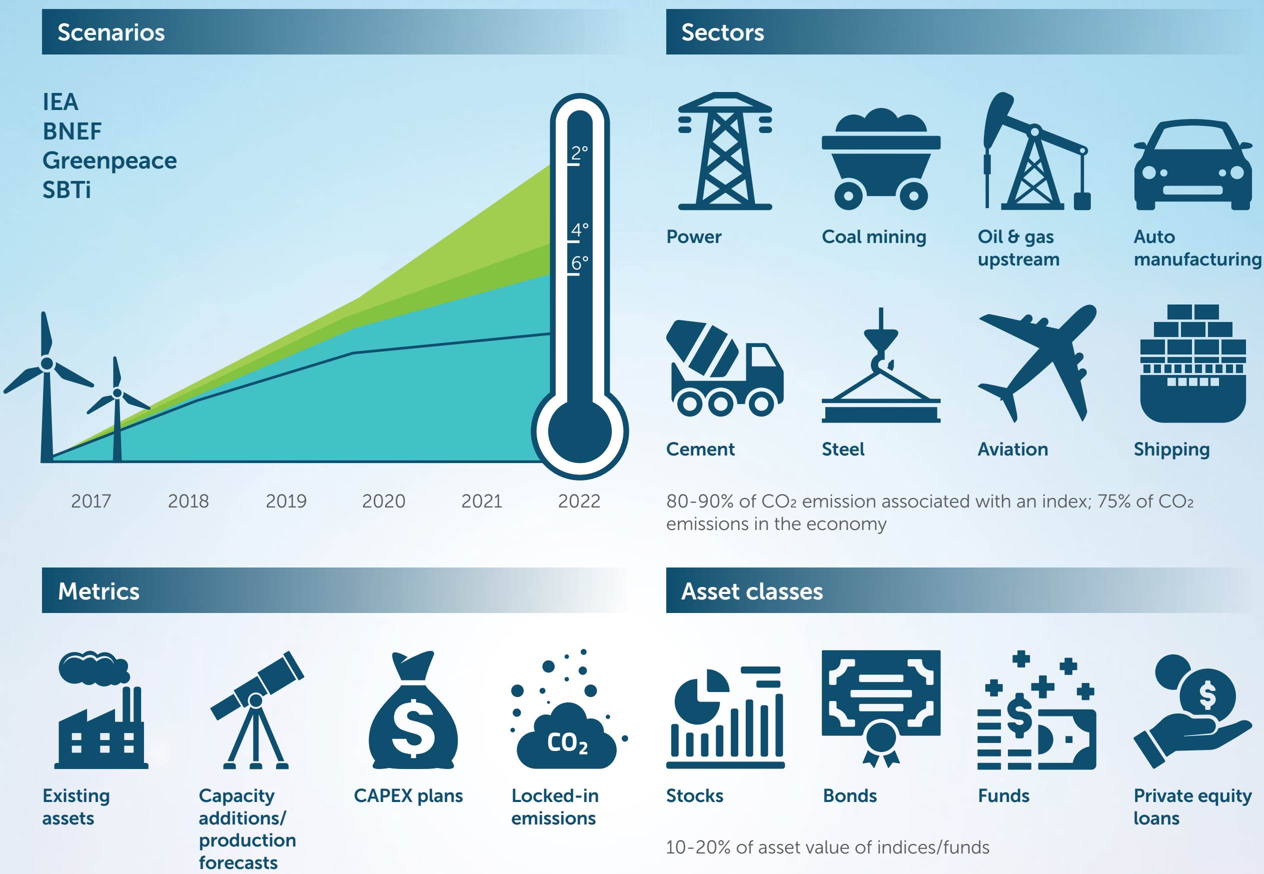
2° Degrees Investing Initiative have developed an online and free-to-use tool, available at www.transitionmonitor.com, for analyzing climate transition risk in investors portfolios[5]. The tool, PACTA, offers global coverage of most high emitting sectors and a 30-page output report on a user's portfolio. All results are confidential to the user.

Another initiative, aimed at investors is the Transition Pathway Initiative (TPI), available at www.lse.ac.uk/GranthamInstitute/tpi/. It assesses companies' preparedness for the transition to a low carbon economy. TPI allows investors to evaluate and track how the quality of companies' management of their greenhouse gas emissions and companies' planned or expected future carbon performance compares to international targets and national pledges made as part of the Paris Agreement.

4 See for example, https://www.unpri.org/climate-change/directory-of-climate-scenario-tools/3606.article

5 2° Investing Initiative is also extending the methodology to banks and corporate lending.

Overview of the Paris Agreement Capital Transition Assessment (PACTA) tool



TPI framework for assessing companies' carbon management quality

Level 0
Unaware/not acknowledging

- Company does not recognise climate change as a significant issue for the business

Level 1
Acknowledgment

- Company explicitly recognises climate change as a significant issue for the business
- Company has a policy (or equivalent) commitment to action on climate change

Level 2
Building capacity

- Company has set energy efficiency or relative or absolute GHG emission reduction targets
- Company has published info on its Scope 1 & 2 GHG emissions

Level 3
Integrated into operational decision making

- Company has nominated a board member or board committee with explicit responsibility for oversight of the climate change policy
- Company has set quantitative targets for reducing Scope 1 & 2 GHG emissions (relative or absolute
- Company reports on its Scope 3 GHG emissions
- Company has had its Scope 1 & 2 GHG emissions data verified
- Company supports domestic & international efforts to mitigate climate change

Level 4
Strategic assessment

- Company has reduced its Scope 1 & 2 GHG emissions over the past 3 years
- Company provides information on the business costs associated with climate change
- Company has set long-term quantitative targets (>5 years) for reducing its GHG emissions
- Company has incorporated ESG issues into executive remuneration

Source: TPI

(6) **Conducting in-depth quantitative research on climate and environmental risks.** Since the launch of pilots, the participating institutions have developed a series of quantitative tools and methods of climate-related risk identification and management. ICBC, the coordinator of the Chinese side, launched the "Stress Testing Research - Impact of Environmental Risks on the Credit Risk of Commercial Banks" in 2015 under the guidance of the China Green Finance Committee. The research report was officially released at the London Stock Exchange during the G20 Green Finance Summit in March 2016, which provides tools of environmental risk research for global financial institutions. After that, ICBC has conducted stress testing in multiple industries and fields in cooperation with international institutions (see the Table below). E Fund has preliminarily established its environmental indicators and analysis models and also made active efforts to push risk quantification and climate-related information disclosure by asset management institutions.

Table 1: ICBC's stress tests

Stress factor	Object	Time	Partner
Policy	Thermal power industry	March 2016	None
	Cement industry	March 2016	None
	Electrolytic aluminium industry	March 2017	Trucost
	Steel industry	September 2017	China Lianhe Equator Environmental Impact Assessment Co., Ltd.
Climate	Drought	March 2018	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Risk Management Solutions (RMS)
Price	Carbon emission trading	May 2019	China Beijing Environment Exchange

4

Plan of Future Work

In 2020, the pilot will continue to organise in-depth peer exchanges and support the pilot's third year action plan. Specifically, it will host seminars on key bilateral topics before the 26th UN Climate Change Conference of the Parties (COP26) and thematic workshops on physical risks, climate scenario analysis tools, practical indicator identification and reporting practices.

Appendix 1: TCFD Recommendation Guide

Established in December 2015, on the recommendation of the then Bank of England Governor and Chair of the Financial Stability Board (FSB) Mark Carney, the FSB's Task Force on Climate-related Financial Disclosures (TCFD) sought to develop a disclosure framework for the translation of information about climate change into financial metrics for corporates, insurers, banks and investors.

The TCFD differentiated between two different types of climate risk

- **Physical risks:** The impacts on insurance liabilities, financial assets and disruption to trade from more frequent & severe extreme weather events, stress to food, energy and resource security that arise from climate change.
- **Transition risks:** The impacts from the process of adjusting towards a low and ultimately zero carbon economy. Technological change or shifts in government policy could prompt a re-valuation of a large range of assets as costs and opportunities become apparent. Improved disclosure and information about these risks is therefore essential for achieving an efficient market response to climate change.

The eleven recommendations, listed below, are grouped under the categories of governance, strategy, risk management and metrics, and can be seen as set of questions which can help financial institutions better assess which companies will be able to transform their business in the event that countries are successful in achieving the objectives of the Paris Agreement of limiting global temperature rise to well below 2° Celsius. Under the TCFD framework, financial institutions have a dual role as both issuers and users of TCFD reports.

For further information please see the Taskforce's recommendations available in English and Chinese here https://www.fsb-tcfd.org/publications/final-recommendations-report/

Overview of the TCFD recommendations

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate- related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate- related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Appendix 2: UK-China Climate and Environmental Information Disclosure Pilot Action Plan for Participating Chinese Institutions

(1) Action Plan for Environmental Information Disclosure by Pilot Commercial Banks in China

Time	Goals	Qualitative Indicators	Quantitative Indicators
Phase I (2018-2019)	Pilot banks, based on their own situation, disclose the environmental impact of 2018 green credit (based on the approach of CBRC). On the basis of CBRC's measurement methods, basic data will be sorted out, and qualified data will be disclosed gradually	1. Governance: Describe the role of board of directors and senior management of commercial banks in green finance development 2. Strategy: Describe the development strategy of commercial banks for green credit in the strategic development planning, to significantly enhance the green development of commercial banks 3. Policy system: Describe the measures of commercial banks for improving the green credit policy and promoting the green adjustment of credit structure 4. Risk management: Describe the environmental risk management process and measures of commercial bank 5. Green finance innovation 6. Practical cases 7. Research results 8. Annual results	1. Balance of green credit 2. Proportion of green credit 3. Equivalent emission-reduction standard coal 4. Emission-reduction carbon dioxide equivalent 5. Emission-reduction chemical oxygen demand 6. Emission-reduction ammonia 7. Emission-reduction sulfur dioxide 8. Emission-reduction nitrogen oxides 9. Water saving 10. Green operation indicators: including green office, vehicle energy consumption 11. Green credit training hours/ man-time 12. Carbon emissions: direct greenhouse gas emissions, indirect greenhouse gas emissions, waste statistics, etc. (Note: Pilot banks may make differential disclosure, as the case may be)
Phase II (2020)	Pilot banks select power, cement, electrolytic aluminium and other industries to analyze and evaluate environmental impacts and risks in light of their own circumstances, and make corresponding disclosures	As mentioned above Further refine the content of the above qualitative disclosure. Analyze and evaluate environmental impacts and risks, and tentatively carry out scenario analysis and stress testing on environmental impacts and risks for high-emission industries such as power, and disclose relevant environmental conditions according to own situation. It may include: 1. Internal and external factors that may cause environmental risks to banking operations; 2. Environmental risk analysis and assessment ideas, methods and tools; 3. A bank's ability to withstand environmental factors, and environmental risk management measures adopted by the bank.	As mentioned above Add industry-specific information about environmental impact and risk scenario analysis and stress testing. It may include: 1. Structural adjustment targets for key emission industries such as power; 2. Stress testing methods, models and conclusions regarding the impact of environmental factors on credit risk of power and other industries; 3. Measurement of environmental benefits from credit structure adjustments in the power and other industries.

Time	Goals	Qualitative Indicators	Quantitative Indicators
Phase III (2021)	Pilot banks are encouraged to expand the scenario analysis and stress testing on environmental impacts and risks according to their own business characteristics, and make corresponding disclosures; further improve the analytical methods; and make efforts to increase the number of financial institutions participating in the disclosure of environmental information	As mentioned above, further improve the disclosure contents of qualitative indicators	As mentioned above, Further expand the scope of industries for environmental impact and risk analysis and stress testing, and make corresponding disclosures

(2) Action plan for Chinese asset management institutions

The first phase is the preparatory phase (details are shown as follows), to start the disclosure of some contents, and the disclosure will be gradually expanded in the second and third phases.

1) Cooperate with third-party agencies to collect basic data and establish an indicator system on the environmental impact of assets held by the asset management institutions and the analytical methods for the impact of environmental risks on the valuation of asset holdings and the probability of default (such as stress testing methods).

2) Establish and improve the system of research, investment and risk control.

3) Develop the investment strategies and fund products that include environmental factors.

4) Provide responsible investment report according to the requirements of applicable international and regional responsible investment organizations.

5) Work out and estimate the environmental disclosure indicators and disclosure format for investment portfolios.

6) Assist regulatory authorities/associations in working out and establishing the guidelines or framework for disclosure of environmental information by asset management institutions.

7) Evaluate the relationship between public disclosure of environmental information and fiduciary duty, and provide research support and advice to relevant regulators and associations.

Participant Case Study Annex

Aviva[6]

Aviva provides 33 million customers around the world with insurance, savings and investment products. We believe that unmitigated climate-related risks present a systemic threat to societal and financial stability over the coming decades. Our responsibility as leaders is to ensure we understand the fast-changing world around us and we are taking actions today to identify, measure, manage, monitor and report climate-related risks and opportunities. We are eager to help build a long-term sustainable future for our customers and investors.

Governance

Aviva's system of governance allows the Board, relevant management committees and senior management to integrate climate-related risks and opportunities into decision making and business processes. At Board level, the Board Risk Committee and Board Customer Conduct and Reputation Committee oversee the management of climate-related risks and opportunities.

Strategy

Having achieved the targets set as part of Aviva's 2015 strategic response to climate change, this year Aviva's climate strategy took another important step forward. We are widening the scope from primarily focusing on investments, to create a broader, joined-up four-pillar approach covering investments, insurance, our operations and our influence.

We commit to aligning our business to the 1.5°C Paris Agreement target. We have focused our efforts through pragmatic commercially smart actions and commit to be a net zero asset owner by 2050.

Our businesses will seek to develop and offer further climate-friendly products. We also commit to further cutting our operational carbon impact, as well as using our influence to help tackle climate change. This strategy is aligned to our Company Purpose 'With you today, for a better tomorrow' and will be implemented as part of the Group Business Strategy.

Risk Management

Aviva considers climate change to be one of the most material long-term risks to our business model, and a proximate risk[7], because its impacts are already being felt. We are therefore taking action now to mitigate and manage the impacts of climate change both today and in the future. Through these actions, Aviva continues to build resilience to climate-related transition, physical and litigation risks including the risk of assets becoming stranded.

We use a variety of metrics and tools to manage and monitor our alignment with global or national targets on climate change mitigation as well as the potential financial impact of climate-related risks and opportunities on our business. Whilst recognising the limitations of the metrics and tools used (for example the scope of coverage, data availability and extended time horizons as well as the uncertainty associated with some of the underlying assumptions), we believe they are still valuable in supporting our climate-related governance, strategy and risk management.

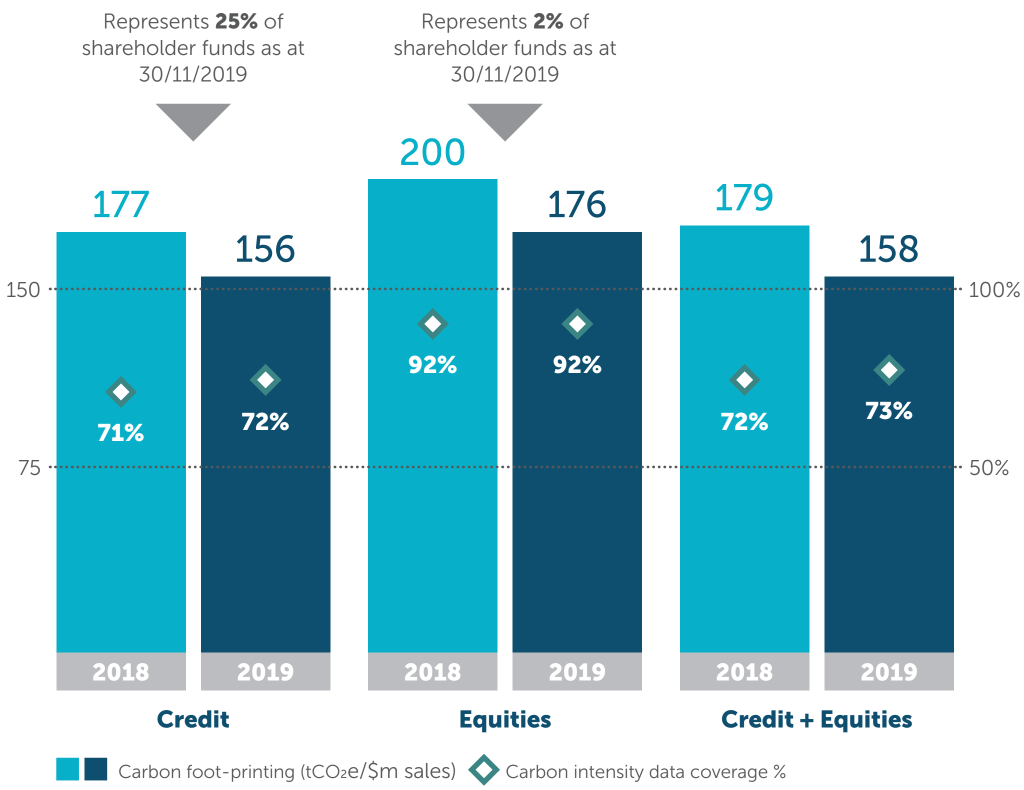
Metrics, Tools and Targets

Some of the metrics and tools used are presented here:

6 Aviva's 2019 Climate related financial disclosure

7 Climate Change is a trend. While we can already observe some early impacts (physical and transition), we expect these to increase significantly over the longer-term. The potential size and nature of the risk and the time required to fully mitigate the risk as a business and wider society mean we need to take management action now. We therefore consider Climate Change to be a proximate risk.

Figure 1: Weighted average carbon intensity (tCO2e/$m sales) of corporate credit and equities in Aviva's shareholder funds as at 30/11/2019 compared to YE18.



Source: Aviva/MSCI.

Carbon foot-printing of investments

We use carbon foot-printing and weighted average carbon intensity data ($tCO2e^8$/$m sales) to assess and manage the exposure of our assets to a potential increase in carbon prices in shareholder funds. Despite being backward looking, this measure provides a good proxy for assessing exposure of our investments to a potential increase in carbon prices. Carbon intensity measures how carbon efficient Aviva's investment portfolio is in terms of emissions. It also allows for comparison regardless of portfolio size but is very sensitive to outliers.

Generally, our carbon foot printing intensity has reduced compared to last year. We have the objective to reduce over time the carbon intensity of our investment portfolio in order to reduce its sensitivity to an increase in carbon prices. This could be achieved through reducing our exposure to the most carbon intensive sectors such as utilities, oil and gas, and building materials.

Aviva's operational carbon emissions

We have measured our operational carbon emissions since 2004 and disclosed related metrics on an annual basis in our public filings. We report on the Greenhouse gas emission sources on a carbon dioxide emissions equivalent basis. Aviva has been carbon neutral in our business operations since 2006 through the purchase and retirement of carbon offsets from the voluntary carbon market. We have already achieved our 2020 operational target set in 2010 by reducing our carbon emissions by 66% and we have a long-term reduction target of 70% by 2030 (compared to this 2010 baseline). Now, 67% of electricity used by our global operations is from renewable resources and we are committed to using 100% renewable electricity by 2025 (aligned to the RE100 commitment).

Portfolio Warming Potential

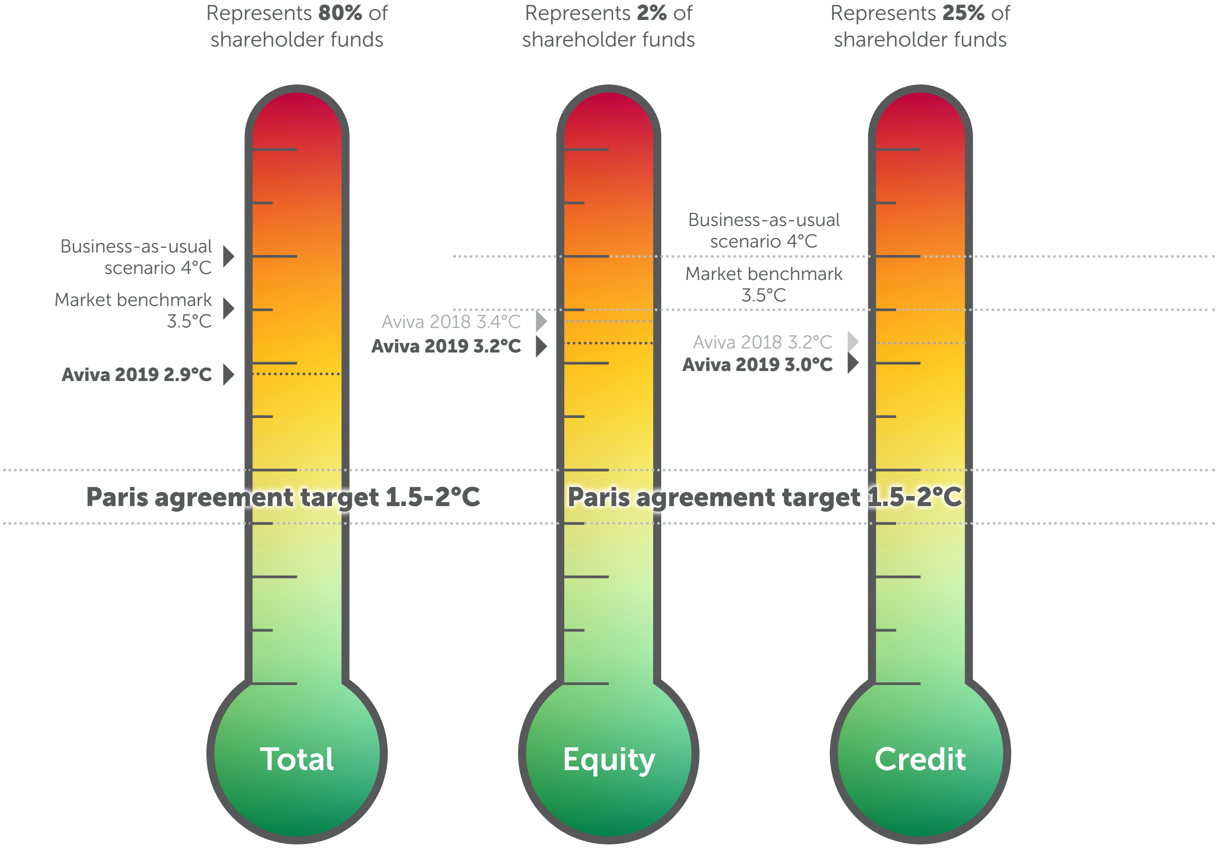
Aviva has used MSCI (Carbon Delta)'s warming potential metric to assess the alignment of our shareholder funds (credit, equities, and real estate) with the Paris Agreement. This warming potential methodology captures investments' Scope 1[9] emissions as well as investments in low-carbon technology to provide a forward-looking perspective. This year we extended this analysis to cover 80% of our shareholder funds by including real estate, sovereign bonds and green assets. We have derived portfolio warming potentials for our most material

8 Scope 1 and Scope 2 emissions.

9 Scope 1 – All direct emissions from the activities of an organisation or under their control. Including fuel combustion on site such as gas boilers, fleet vehicles and air-conditioning leaks.

sovereign exposures based on analysis of individual government's climate action and how it compares against the Paris Agreement's target, taking into account independent analysis conducted by organisations such as Climate Action Tracker[10].

Figure 2: Aviva's warming potential (in °C) for Aviva's shareholder funds as at 30/11/2019



Source: Aviva/ MSCI (Carbon Delta).

The actions we are taking to reduce our investment exposure to carbon intensive sectors over time should lead to a reduction of the warming potential of our investment portfolio. The analysis found that the warming potential of our shareholders funds' equity portfolio was at, 3.2°C, 0.2°C lower than last year's result. The shareholder's corporate credit portfolio was also 0.2°C lower at 3.0°C. Overall, this analysis estimates the total warming potential of our shareholder funds at 2.9°C. Whilst clearly still above the Paris Agreement target, this represents year on year progress, is lower than the warming potential of the market benchmark portfolio (3.5°C) and significantly lower than the portfolio warming potential of the business-as-usual scenario (4°C).

Climate VaR measure

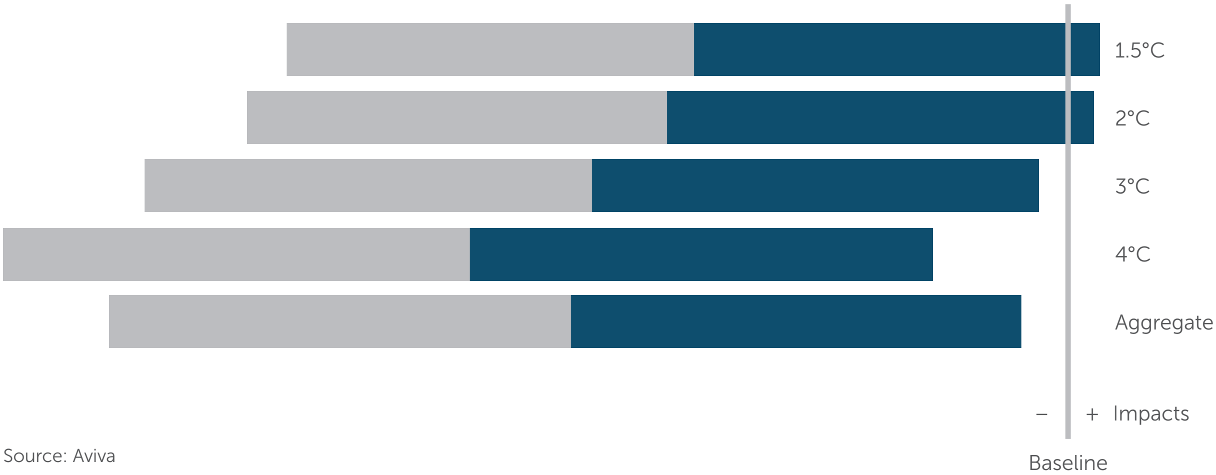
Aviva developed a Climate VaR measure, in conjunction with the United Nations Environment Programme Finance Initiative (UNEP FI) investor pilot project and Carbon Delta[11]. This measure enables the potential business impacts of future climate-related

10 The Climate Action Tracker is an independent scientific analysis tracking government climate action since 2009.

11 Carbon Delta is an environmental FinTech research firm that specialises in identifying and analysing the climate change resilience of publicly traded companies which recently became part of MSCI.

Figure 3: Initial Climate VaR output by scenario for Aviva's shareholder funds as at 31/12/2018

The grey bars represent the range of outputs between the 5th Percentile and the central estimate for each scenario and the orange bars the range between the central estimate and the 95th Percentile.



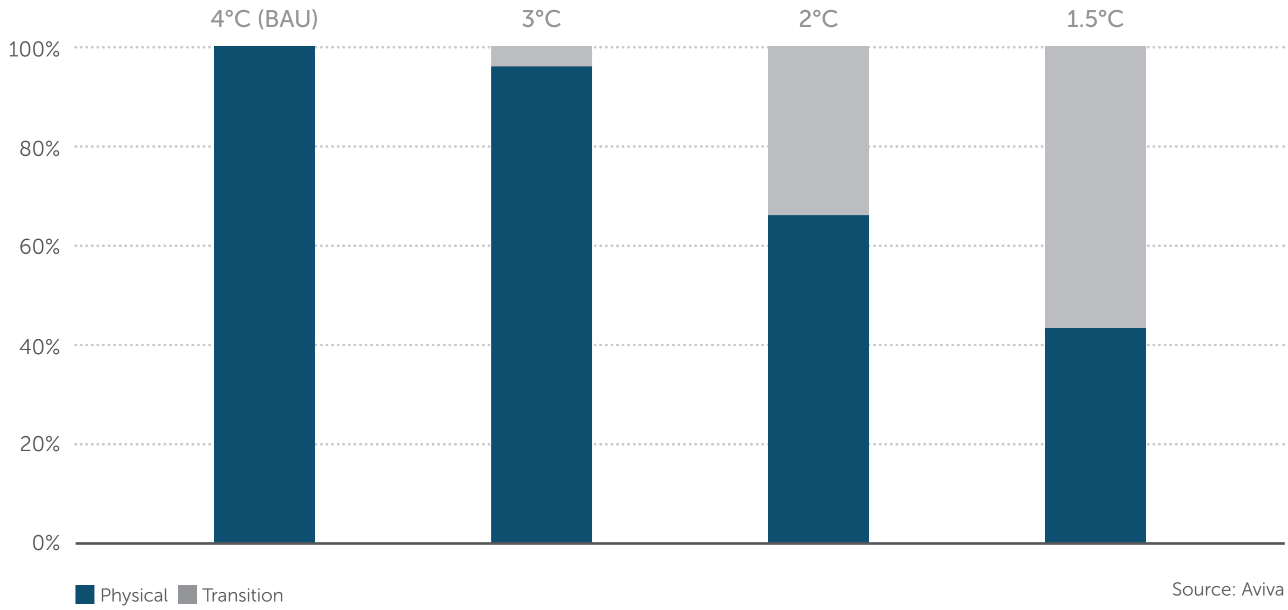
Source: Aviva

risks and opportunities to be assessed in each of the Intergovernmental Panel on Climate Change (IPCC) scenarios i.e. 1.5°C (aggressive mitigation), 2°C (strong mitigation), 3°C (some mitigation) and 4°C (business as usual) and in aggregate.

Figure 3 compares a plausible range of outcomes (5th to 95th Percentile) from our initial Climate VaR analysis for the different scenarios considered. As shown, Aviva is most exposed to the BAU 4°C scenario where physical risk dominates, negatively affecting long-term investment returns on equities, corporate bonds, real estate, real estate loans and sovereign exposures. The aggressive mitigation 1.5°C and the 2°C scenarios are the only scenarios with potential upside.

When aggregated together to determine an overall impact of climate-related risks and opportunities across all scenarios, the plausible range is dominated by the results of the 3°C and 4°C scenarios, reflecting that neither existing nor planned policy actions are sufficiently ambitious to meet the 1.5°C Paris Agreement target.

Figure 4: Physical versus transition risks by scenario for Aviva's shareholder funds as at 30/11/2019



Source: Aviva

In the 1.5°C scenario transition risk is larger than physical risk, see Figure 4, even after taking into account mitigating technology opportunities. In the 2°C scenario, transition and physical risks are somewhat balanced, whereas in the 3°C and 4°C scenarios physical risk dominates.

Similar to last year, in all scenarios, the impact on insurance liabilities is more limited than on investment returns. However, there is potential for some impact on life and pensions business as a result of changes in mortality rates in different scenarios either from physical effects such as more extreme hot and cold weather or transition effects related to changes in pollution levels. The impact on general insurance liabilities is relatively limited because of the short-term nature of the business and the ability to re-price annually and mitigation provided by our reinsurance programme. However, the physical effects of climate change will result in more risks and perils becoming either uninsurable or unaffordable over the longer term.

The analysis is just the beginning of our journey to further develop metrics and targets supporting our TCFD response. In parallel, work is on-going to update our strategic response to climate change and accelerate our ambition to be aligned to the Paris Agreement's goal of a transition to 2°C or lower.

Aviva Group's latest TCFD report is available, in full, here: https://www.aviva.com/social-purpose/climate-related-financial-disclosure/

Brunel Pension Partnership
(Brunel)

Addressing Climate Change

Taskforce for Climate-related Financial Disclosure

Climate change presents a systemic and material risk to the ecological, societal and financial stability of every economy and country on the planet, and therefore will impact our Clients, their beneficiaries and all portfolios holdings.

As such, climate change has been identified as a strategic and investment priority. Brunel advocates strongly for improved transparency and will disclose in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We have summarised our approach below, more extensive information, alongside our policy will be available on our website, in a dedicated area to climate change.

Brunel was formed in July 2017 and will manage the investment of the pension assets (around £30bn/$40bn) of ten Local Government Pension Scheme funds in the UK. We use the name 'Brunel' to refer to the FCA-authorised and regulated company.

Client partner funds (as administering authorities) retain responsibility for Strategic Asset Allocation (SAA) and setting their investment strategies.

Brunel's investment team takes a long-term view on investment decisions. This view is aligned to our clients' liability profiles and investment objectives. As such, environmental and social risk considerations, along with good governance and stewardship, are integrated into our decision-making processes.

Investment Principles

Brunel aims to deliver stronger investment returns over the long term, protecting our clients' interests through contributing to a more sustainable and resilient financial system, which supports sustainable economic growth and a thriving society.

The Brunel Pension Partnership Investment Principles clearly articulate the commitment of each Fund in the Partnership and the pool company Brunel Pension Partnership Ltd to be responsible investors. As such, the Partnership recognises that social, environment and corporate governance (ESG) considerations, including climate change, are part of the processes in the selection, non-selection, retention and realisation of assets.

Managing the risks of Climate Change

Governance

Brunel published a Climate Change position statement in May 2019 and a full Climate Change Policy in December 2019. Our commitment is also communicated in our Responsible Investment and Stewardship Policies, all of which are approved by the Brunel Board. The Board is collectively accountable for all our RI related policies, but operational accountability on a day-to-day basis is held by the Chief Responsible Investment Officer.

This year we have focused on embedding climate change into the all our policies and processes. This starts from the top with Climate change being explicitly referenced in the Board and its subcommittee terms of reference, job descriptions and regularly part of board and committee agendas and training. This is linked to our implementation of the Senior Managers and Certification Regime (SM&CR).

The Board, in developing a comprehensive climate policy, engaged extensively with clients and has sought to take account of the views of the beneficiaries of our client funds. Our climate change policy, like all Brunel's external policy's include contact details to enable direct dialogue.

Brunel's Board, Executive and Investment team all strongly advocate for effective management of climate change through speaking at events, sharing expertise and ensuring it is integrated into all our own investment and operation practices.

Our governance framework is shaped by the policy and regulatory requirements. Policy advocacy, to influence this backdrop, is a core component of Brunel's approach to managing climate change. We support one to one meeting, events, consultations and are members of working groups and advisory panels for a wide range of policy leads. Our formal dialogue through consultations and letters are all published on our website. We have explicitly advocated for climate change related recommendations in consultations relating to the work and operations of Prudential Regulation Authority (PRA), Financial Conduct Authority (FCA) and the Financial Reporting Council (Stewardship Code and Kingman Review). We also raised the issue of explicitly needing climate change to be recognised in terms of the regulations, guidance, skills and knowledge in undertaking audits as part of the Brydon review.

Our focus for 2020 is to follow the public policy engagement work and support policy makers in promulgating best practice in managing climate change.

Strategy

As with our approach to responsible investment (RI) more broadly, we recognise that climate change will have impacts across our portfolios and is fully embedded into our manager selection process. We strive to make all our portfolios, across all asset classes, are carbon and climate aware. This means we look to all our asset managers to identify and manage climate-related financial risks as part of the day-to-day fund management. The way those risks and opportunities present themselves varies across asset classes and when in evaluating how the portfolios are position in different climate scenarios.

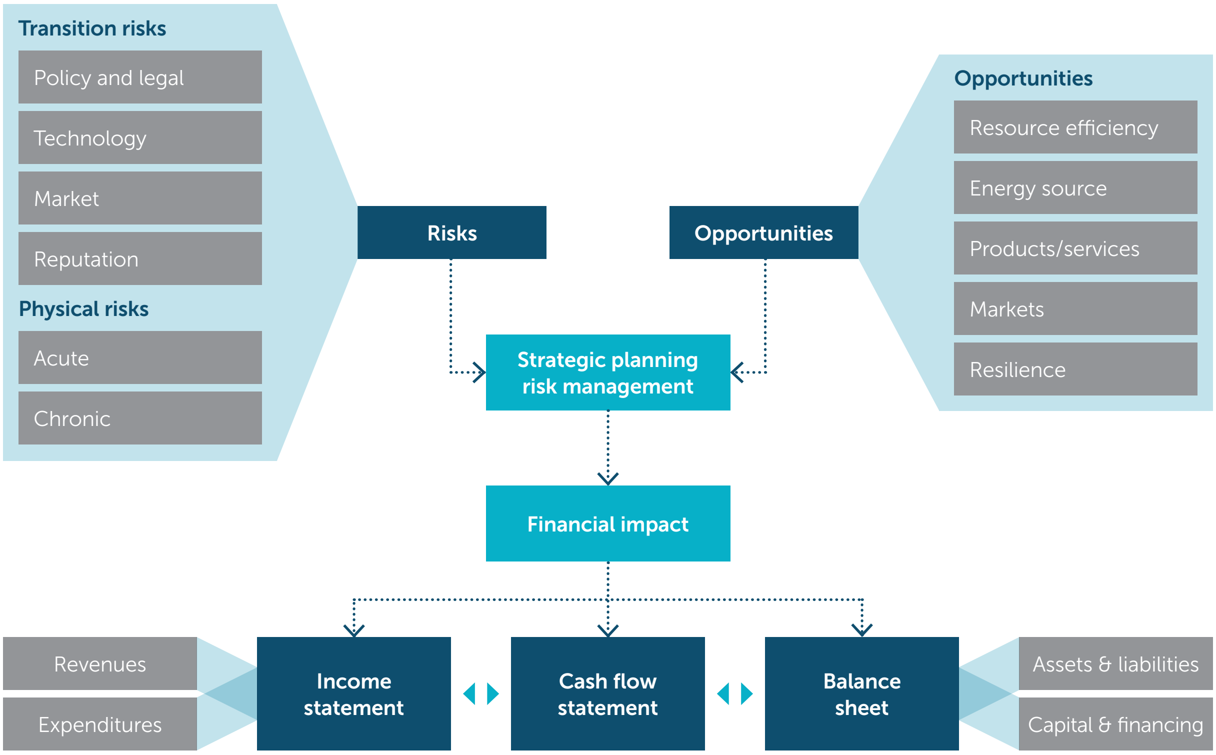
We have already taken steps to address climate risk and opportunities in our governance, strategy, portfolio construction and monitoring but recognise there are gaps, particularly in asset classes where data is not widely available or where tools are still being developed.

Brunel does not consider a top-down approach to disinvestment to be an appropriate strategy for its clients. By integrating climate change into our risk management process, using carbon footprinting, assessing fossil fuel exposure and challenging managers on physical risks, we seek to reduce unrewarded climate and carbon risk. This results in selective disinvestment based on investment risk, supporting our commitment to decarbonising our listed portfolios.

A core component of strategic approach to transition risk is the Transition Pathway Initiative, which allows to evaluate carbon intense corporates against both current disclosure but future carbon transition risk.

Our focus in 2020 are the projects with the Institutional Investors Group on Climate Change (IIGCC), which will enable us to progress the practical implications of integrating climate risk assessment across asset classes and evaluate what a 'Paris Aligned' portfolio looks like.

Figure 1: Climate-related risks, opportunities and financial impact



Reproduced with permission from the TCFD Final Report, Figure 1, page 8, 2017.

Risks

Our framework for assessing the impacts of climate change encompasses adaptation and physical risks (the risks posed by the consequences of climatic change) as well as those risks and opportunities arising from the transition to a low carbon economy (risks from addressing the root causes of climate change).

Decarbonisation is achieved by being selective in the allocation of capital, particularly to carbon intense companies. This process is informed by using the tools identified above in combination with industry and corporate engagement. We are committed to being transparent about the carbon intensity of Brunel Portfolios through the publication of annual carbon footprints and fossil fuel exposure, alongside the development of other carbon metrics.

Climate risks are thoroughly embedded into our fund selection and due diligence process for our private markets' portfolios. We use tools such as the Global Real Estate Sustainability Benchmark to assist in monitoring real estate managers. Sustainable and clean technologies are core themes of our infrastructure investment (see charts below) and are one way that Brunel is providing clients with access to positive climate impact investment opportunities.

Brunel private markets strategy is to commit 35% of the Infrastructure portfolio and 30% of Secured Income to renewable energy funds. This complements broader sustainable exposure in both these and private equity portfolios.

The focus for 2020 is to further develop the climate risks analytics in the quarterly and annual monitoring of portfolios and communicate climate positive case studies from private market portfolios.

Metrics and Targets

The investments that Brunel manages will form the most significant climate impact for the Partnership. However, we are also committed to capturing emissions arising from our own operations, for example we source 100% of our electricity via a renewable tariff.

In 2019 we undertook carbon footprints and fossil fuel exposure of all our listed equity portfolios.

Figure 2: Fossil fuels & extractive industrie revenue exposure 28 March 2019

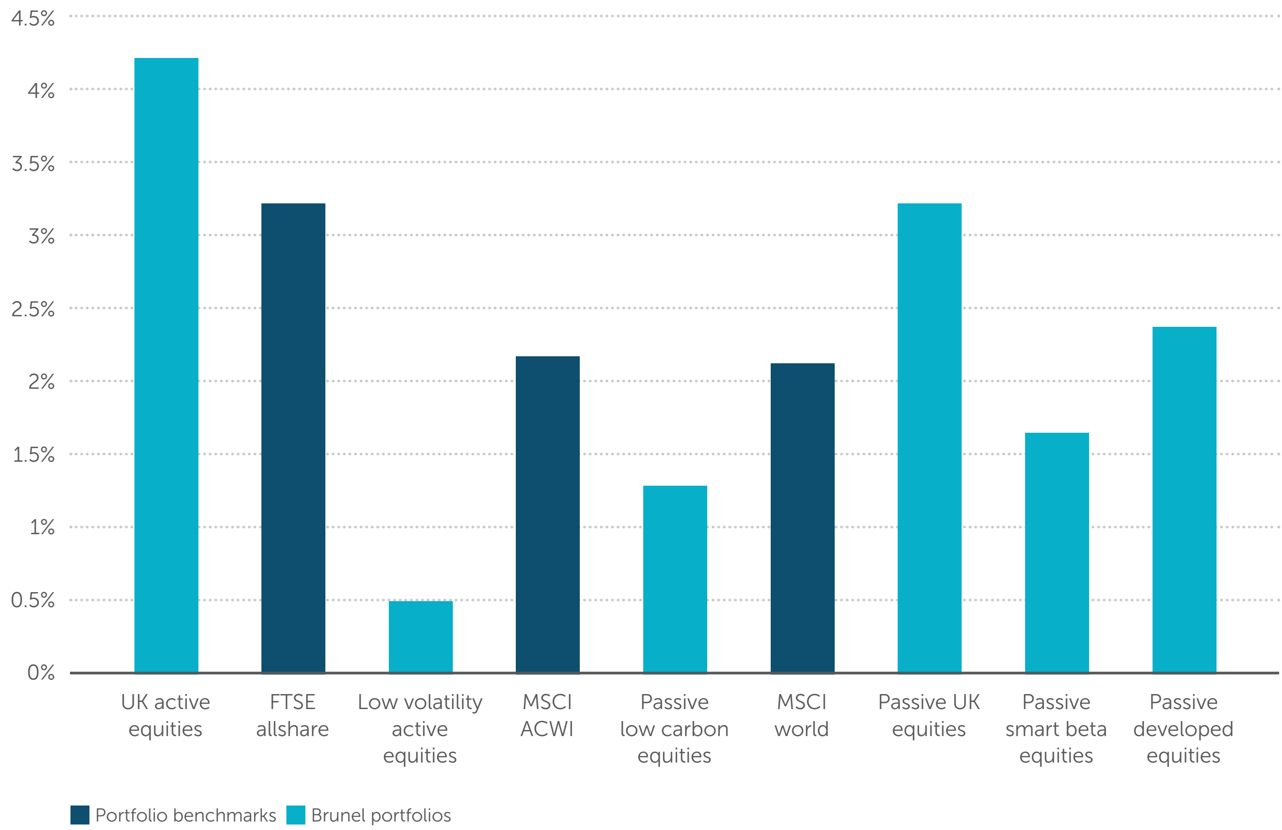
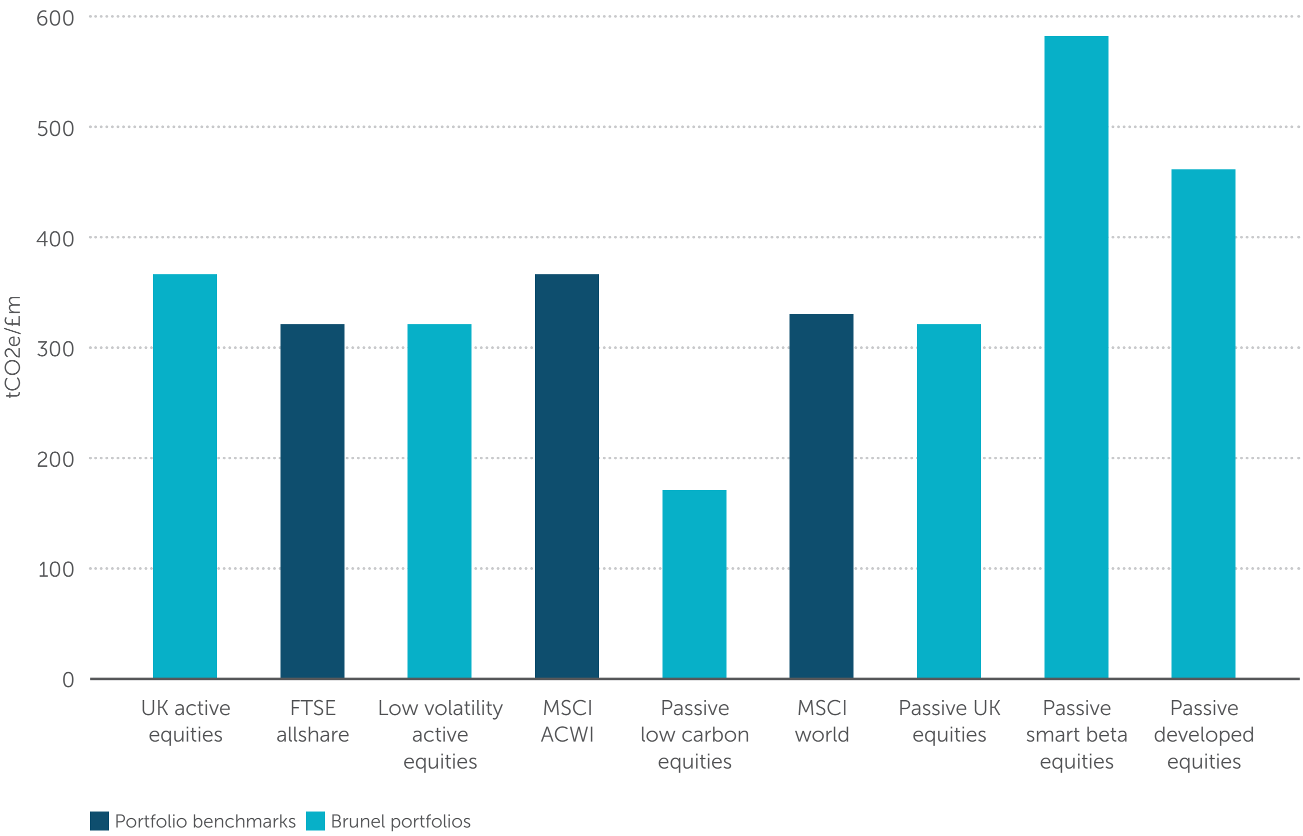


Figure 3: Tonnes of carbon dioxide £m invested

Weighted average carbon intensity (tCO2e/mGBP) **28 March 2019**



We have used carbon footprint and fossil fuel exposure data to inform our portfolio monitoring and product governance review. We have had very positive engagement with the managers managing these portfolios to identify areas for improvements in carbon intensity. We target all our equity portfolios to be less carbon intense than their investment benchmark.

A broader set of carbon and climate metrics and targets will be published on our website as part evidencing our approach to climate change.

The focus for 2020 is client focused carbon metrics and developing the positive contribution case studies and metrics.

Getting in touch

If you have any questions or comments about this policy, please email Faith Ward, Chief Responsible Investment Officer at **RI.Brunel@brunelpp.org.**

Federated Hermes[12]

Case Study: International business of Federated Hermes Climate Risks and Opportunities

At the international business of Federated Hermes, we have US$49.1 billion under management[13], thanks largely to our reputation as a socially responsible investment firm. Our stewardship and engagement service, EOS at Federated Hermes, has $877.3 billion under advice[14].

Market and societal signals are now crystal clear: sustainable finance and climate change are at the heart of European and UK financial policy. Financing a just and ecological transition represents the future of our industry. Action taken in the next decade will be key to determining whether we are able to deliver the Paris Climate Agreement objectives, and both mitigate and adapt to the extreme weather changes scientists have forecast. As an industry we need to be ready for a steep learning curve. Investment management practices will have to adjust to this new political, regulatory and market reality.

At the international business of Federated Hermes, we are focusing on the long-term and structuring ourselves to ensure that our culture enables action. We are preparing by assessing our exposure to climate related, transition and physical risks, and are engaging all parts of our business to be able to identify mitigation measures and understand how to increase the resilience of our investment activities.

We are engaging with corporates to understand how exposed to and prepared for climate risks they are and are integrating this knowledge into our investment processes. We are also engaging with the UK Government to ensure there is an effective policy framework in place that will encourage and enable the financial sector to act in limiting the financial stability risk associated with climate change as well as the physical risks it poses to society and its infrastructure.

Our compliance processes are aligned with the Taskforce for Climate-Related Financial Disclosures (TCFD) recommendations. Our approach covers our public equities and credit, private real estate and infrastructure assets. See Graph 1.

Every year we review our own management approaches and disclosures, aiming to deepen our compliance with the TCFD recommendations over time. Our methodology is evolving as we increase the sophistication of our approach through an iterative process learning from our own experience with inhouse research, analysis, tools and through engagements activities. We are also testing the climate risk tools now available in the marketplace to understand not only their potential in providing useful information, but their limitations in relation to data availability and the assumptions.

The key climate investment activities we focused on through 2019 include:

Our Climate Working Group

- We have strengthened representation within the working group to include investment managers in public and private markets, engagement specialists, risk specialists and product development. The group works together to deepen our understanding and analysis of climate-related risks, going beyond our current carbon-focused management practices.

12 Contributors: Ingrid Holmes - Head of Policy and Advocacy, Dr. Christine Chow – EOS Engagement Professional

13 Source: Federated Hermes as at 31 December 2019

14 Source: Federated Hermes as at 31 December 2019

- The aim of the group is to ensure all analysts, portfolio managers and engagers understand the key drivers of the transition, and can challenge assumptions, whether those made by companies or by third parties.

Climate Advocacy

- Following the announcement by the FCA that TCFD disclosure will be mandatory by 2022, we have undertaken a range of climate advocacy actions this year. Under the leadership of our CEO we are working with the UK Climate Financial Risk Forum (CFRF), leading the disclosure working group to develop guidance for UK financial institutions climate related financial disclosure, to be published in 2020.

Developing our Portfolio Climate Management Process for Listed Assets

- We are developing a comprehensive portfolio climate risk and opportunity management process that covers carbon modelling tools, climate risk assessment, making sense of the 2°C scenario analysis, assessing potential impact to value. It also includes a dynamic element to measuring carbon footprints throughout the investment and engagement process in ways that are meaningful within different asset classes and investment time frames (See Graph 2).

Active Corporate Engagement

- Our engagement and investment practices overlap, acting as a continuous positive feedback loop.
- Stewardship and corporate engagement are a crucial element of our climate change risk management process as they enable us to raise awareness of risks with respective boards and encourage action to address them, as well as to capturing intelligence on the dynamic process at play in the development of company strategies and business plans.
- We have been early supporters and are active contributors to Climate Action 100+ and also undertake our own climate-related corporate engagement.

Strengthening Climate Management Process for Real Estate

- We have had an extensive climate management programme in our Real Estate strategy since 2008, including targets for carbon emissions and energy consumption as well as an active engagement programme to deliver them at every step of the building's investment life cycle. For the last 11 years, we have been able to reduce carbon emissions year on year by an average of 9%. See Graph 3.
- Since 2016, we have deepened our climate strategy by focusing on improving both energy efficiency and the well-being of occupiers.
- We have committed to publishing a road map to net zero carbon in our real estate assets in 2020.

Climate engagement in Infrastructure

- Given the nature and long-term perspective of infrastructure assets, climate change is one of the key macro factors to consider in investment. A significant opportunity in infrastructure globally remains within renewable energy and the change to networks that the switch to renewables requires. Almost 20% of our portfolio is composed of renewable investments.
- We respond to infrastructure sustainability benchmarks, GRESB and report carbon emissions in portfolio for Scope 1 and 2 as well as emissions avoided by investing in areas such as renewable assets. We measure our weighted average carbon intensity, and, on a net basis, our portfolio avoids more emissions than it makes thanks to our renewable assets.
- We typically hold a place on the board or strategic board and as such are well positioned to engage with the underlying assets in order to encourage a review of business plans to address mitigation and adaption to climate change.

Developing Climate Investment Tools

- **Federated Hermes "Carbon Tool"** enables our analysts, fund managers and engagers alike to have accessible information on carbon risk in portfolios and in companies. The tool neatly incorporates our stewardship intelligence. It can also calculate the potential financial impact of climate impacts, such as the profit at risk in an investment fund under different carbon pricing and policy scenarios.

- **Federated Hermes Atlas tool,** a new proprietary development which enables us to asses climate resilience at asset level across our investment strategies, covering risks from extreme weather events and physical impacts of a changing climate

Testing Climate Scenarios and Climate Value at Risk Tools

- Integrating Transition Pathway Initiative Benchmarks into our Carbon tool and using them as an important element of our engagement process
- Testing PACTA 2DII -PRI scenario analysis tool. The report and the tool have been useful in our analysis for certain sectors, particularly to inform the time frames over which these effects are considered. However, further work is required to examine both individual companies and how companies are responding to the changing market dynamics. The tool works well as a method to identify gaps and potential areas for greater analysis and/or engagement. It also ensures that the scenarios used are standardised which has benefits for interpretation.
- Road testing Science Based Targets for investors (SBT): We volunteered to road test the new Science Based Targets for Investment Assessment across our Listed and Real Estate Assets. Given our engagement history, we strongly welcome SBT's proposal to call on investors to engage with underlying corporates to address their carbon emissions. Requiring an engagement target of 30% of AUM seems reasonable for those sectors with a Sectoral Decarbonisation Approach (SDA) methodology. We raised the issue of small cap investors which will be at a disadvantage as engaging with smaller assets is not current practice and there will be difficulties in implementing such requirements.
- While these tools are both useful and important in supporting the development of the emerging value at risk tools, we recognise at this early stage of climate risk assessment they also have limitations. We are critical of their current suitability given the degree of uncertainty baked-in, and we question the tool's outcomes relevance to deduct impact on financial performance and to inform investment decisions. In practice, limitations of the data, including timeliness and coverage, have hindered our ability to effectively use this type of report. Rather, we analyse them and incorporate them into our broader analysis, complemented by a deep analysis of trends and scenarios aiming to paint the full story of companies and underlying progress.
- Our key finding is that deep engagement in the climate scenario analysis process is indeed fundamental in order to best understand the low-carbon transition and apply it to both engagement and investment decision-making.

Annexes: Graphs

Graph 1: Federated Hermes' Climate risks and opportunity strategy, 2019

Engagement

We act as engaged stewards of the investments we manage or represent on behalf of our clients. Where we hold assets with significant climate-related risk exposure, we will manage directly-owned assets, and engage with public and private companies, to mitigate the climate-related risk

Awareness

Portfolio managers are aware of the climate-related risks in their portfolios, which investments are the largest contributors, what are the associated risks and mitigation strategies

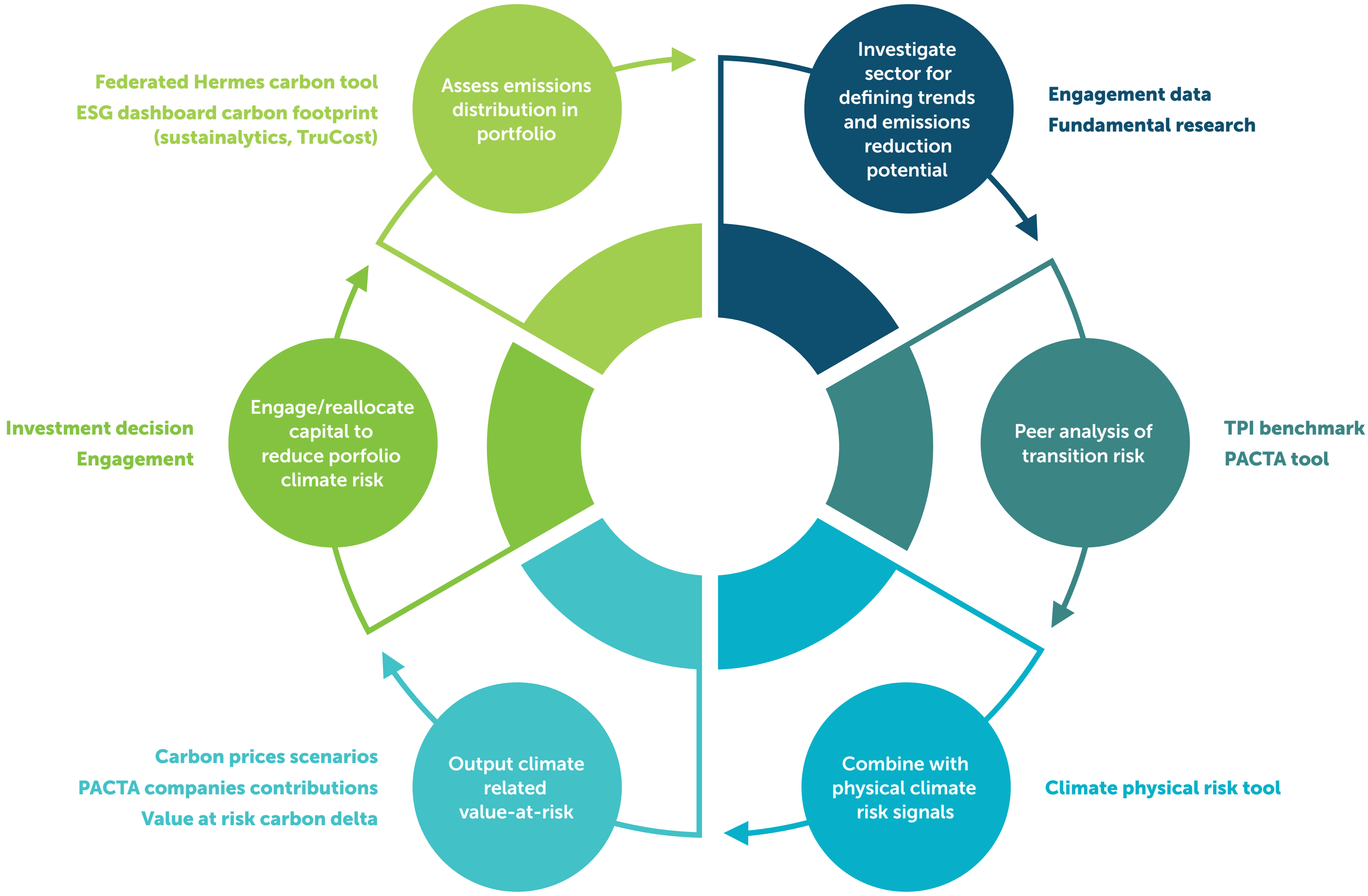
Awareness

Portfolio managers integrate climate-related risk considerations alongside other value and risk considerations, exploiting green investment opportunities or divesting where climate-related risk impacts value

Advocacy

We engage with public policymakers and sector organisations, nationally and internationally, to encourage policy or best practice that facilitates the transition to a low carbon economy

Graph 2: Developing Federated Hermes' portfolio carbon management process, 2019



- Identify the key drivers for future trends relevant to the sector, particularly focusing on those which are material to the low-carbon transition.
- Allow for side-by-side comparison of third party providers (e.g. IEA vs. BNEF vs. IRENA).
- Supportive analysis of interconnectivity between factors (e.g. EV penetration and declining cost curves of batteries/next generation battery technology).

- Sector benchmarking to assess performance across all key drivers.
- Utilisation of output to identify companies for engagement and highlight potential investment opportunities through bes tin class exposure.

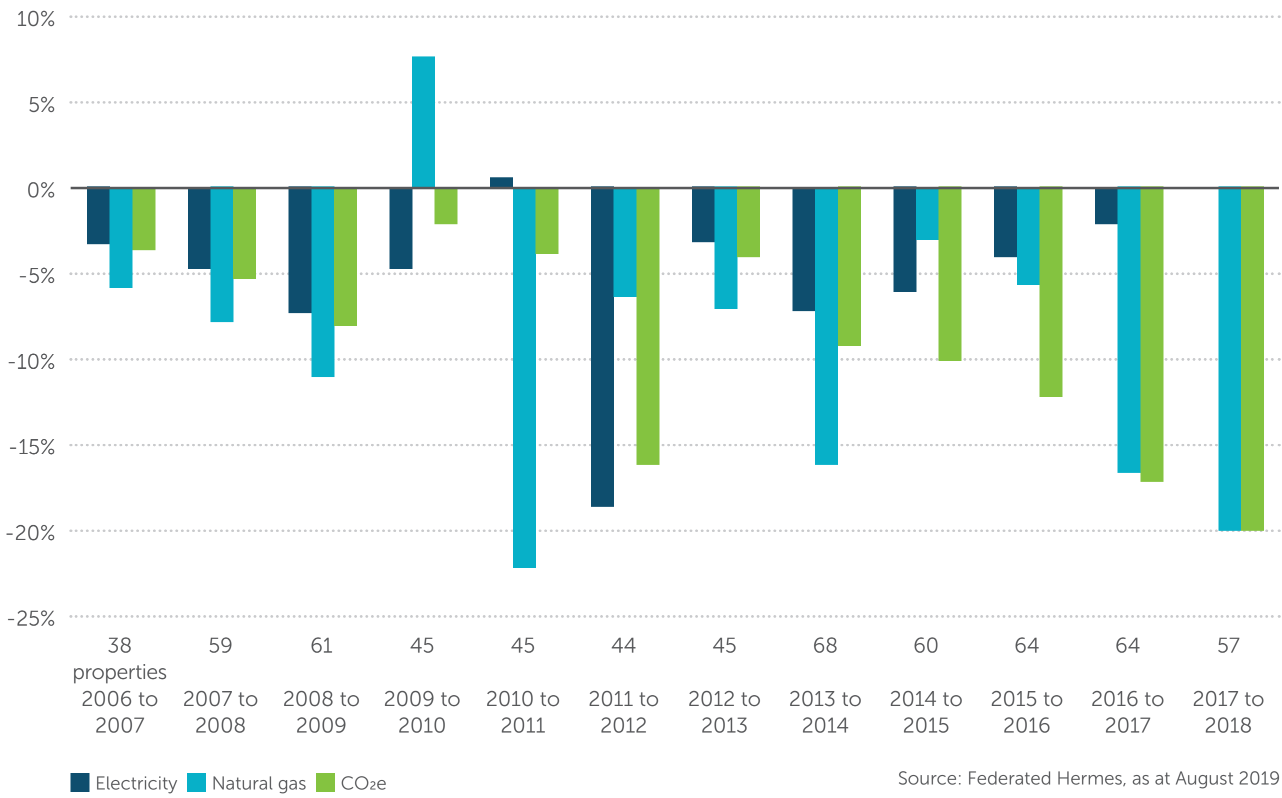
- Overlay physical risk such as flooding, drought and extreme weather events.
- Identification of both current and future exposure to physical risk under multiple climate scenarios.

- Estimate potential impact to the company of this model across all factors (Do not focus on an aggregated value to avoid false sense of accuracy.
- Sectoral weighting to identify leaders and laggards on a transition-risk exposure basis.

- Apply learning process from the scenario analysis to investment decision-making.
- Engage with those companies which are misaligned with a low-carbon transition.

- Use data visualisation to demonstrate concentrations of emissions per asset, scope and sector (an example of this might be a Sankey diagram.
- Absolute figures and representation of the direction of travel of emissions.

Graph 3: Federated Hermes Real Estate carbon reduction performance since 2006



Source: Federated Hermes, as at August 2019

HSBC[15]

HSBC is one of the world's largest banking and financial services organisations, with access to the fastest growing markets and robust balance sheet strength. Our success over 154 years has been founded on our ability to build strong and trusted relationships not just with our customers, but with the communities and other stakeholders we serve all over the world.

HSBC believes that we all have a role to play in limiting climate change and supporting the transition to a low-carbon economy. A key objective for HSBC is to provide financing and to facilitate, in an advisory capacity, the flow of capital to enable the transition to a low-carbon economy, whilst helping clients manage transition risk and enabling activities needed to support the Paris Agreement and the UN SDGs.

Governance

We have an established governance framework to help ensure that risks associated with climate change are considered at the most senior levels of our business. At each Board meeting, the Directors are presented with a risk profile report that includes key risks for the business, which may include climate risk where appropriate. Independent non-executive Directors make up the majority of the Board. Both the Group Chief Executive and the Group Chief Financial Officer are required to be members of the Board. In 2019, the Group Chief Risk Officer was also a member of the Board. With effect from 1 January 2020, this role ceased to be a Board member but the Group Chief Risk Officer will still attend Board meetings. In this role, the Group Chief Risk Officer raises any concerns directly by providing verbal or written updates on a regular basis to the Board and Group Management Board. The Board and regional executive committees provide oversight of our strategic commitments and are advised by our climate business councils. The Risk Management Meeting of the Group Management Board ('RMM') provides oversight of climate risk through the 'top and emerging risk' report, which is reviewed on a monthly basis. A dedicated climate risk forum and an ESG Steering Committee also provides executive oversight of climate commitments. We have formally designated responsibility for managing the financial risks from climate change through the Senior Managers Regime for the relevant entities. In 2019, the Board held a one-day sustainable finance and climate change 'master class'; the Group Risk Committee carried out a thematic review of sustainability and climate change risk management; and the Group Audit Committee discussed ESG at four separate meetings. Our people have also completed more than 5,300 sustainability training modules in 2019, a 41% increase since the previous year. The 2020 annual incentive scorecards of the Group Chief Executive, Group Chief Financial Officer and members of the Group Management Board have 30% weightings for measures linked to outcomes that underpin the ESG metrics below.

Strategy

As part of our priority to support the transition to a low-carbon economy, we pledged to provide $100bn of sustainable finance, facilitation and investment by 2025. At the end of 2019, we reached $52.4bn of that goal, of which $43.6bn relates to green or sustainable products. In 2019, HSBC was named the World's Best Bank for Sustainable Finance by Euromoney. We recognise that many customers are making shifts towards the low-carbon economy and that our industry needs to work together to find new ways to measure these activities. In 2019, HSBC participated in the CDP (formerly the Carbon Disclosure Project) working group to develop financial sector disclosure. We also partnered with climate change experts at MIT to produce exploratory transition scenarios. These scenarios were used to raise internal awareness of the different speeds with which transition could

15 HSBC, Environmental, Social and Governance Update 2019

occur, the resulting investment requirements, the implications for energy system configuration and the broad macroeconomic costs.

Risk management

We are in the process of incorporating climate-related risk, both physical and transition, into how we manage and oversee risk. The Board-approved risk appetite statement contains a qualitative statement on our approach to climate risk. We intend to further enhance the climate risk statement in 2020. In 2019, we also trained over 800 employees on climate risk to strengthen engagement with customers.

We report on the emissions of our own operations via CDP and achieved a leadership score of A- for our 2019 CDP disclosure. Since the revision of the energy policy, we have not agreed any project financing for any new coal-fired power plants anywhere.

We have started to develop and publish new transition metrics to help us gain a deeper understanding of the complexities of this topic. Transition risk is the possibility that a customer will be unable to meet its financial obligations due to the global movement from a high-carbon to a low-carbon economy. We are considering transition risk from three perspectives: understanding our exposure to transition risk; understanding how our clients are managing transition risk; and measuring our clients' progress in reducing carbon emissions. To better understand our exposure to transition risk, we identified six higher transition risk sectors in 2018, based on their contribution to global carbon dioxide emissions and other factors. These transition risk sectors and our exposure to them are disclosed in table 1. Figures in this table capture all lending activity to customers within these sectors, including those that are environmentally responsible as well as sustainable financing activities. This means that green financing for large companies that work in higher transition sectors is included. For further information on how we designate counterparties as 'higher transition risk', 2019, to better understand how our clients are managing transition risk, we had more than 3,000 engagements with customers through meetings or phone calls, across all sectors to discuss their approach to climate change.

Table 1: Wholesale loan exposure to transition risk sectors

	Oil and gas	Building and construction	Chemicals	Automotive	Power and Utilities	Metals and mining	Total
% of total wholesale loans and advances to customers and banks in 2019[1,2,3]	**≤3.8%**	**≤3.9%**	**≤3.9%**	**≤3.2%**	**≤3.2%**	**≤2.7%**	**≤20.6%**
% of total wholesale loans and advances to customers and banks in 2018[1,2,3]	≤3.9%	≤3.8%	≤3.9%	≤3.4%	≤3.0%	≤2.8%	≤20.8%

1 Amounts shown in the table include green and other sustainable finance loans, which support the transition to the low-carbon economy. The methodology for quantifying our exposure to higher transition risk sectors and the transition risk metrics will evolve over time as more data becomes available and is incorporated in our risk management systems and processes.

2 Counterparties are allocated to the higher transition risk sectors via a tw-step approach. Firstly, where the main business of a group of connected counterparties is in a higher risk sector, all lending to the group is included irrespective of the sector of each individual obligor within the group. Secondly, where the main business of a group of connected counterparties is not in a higher transition risk sector, only lending to individual obligors in the higher transition risk sectors is included.

3 Total wholesale loans and advances to customers and banks amount to $680bn (2018: $668bn).

We also developed a questionnaire to improve our understanding of our customers' climate transition strategies. We received responses from over 750 customers within the six higher risk transition sectors, which represented 34% of our exposure. We are using this information to inform our decision making and strategy. For instance, this information is helping us to understand which customers need to adapt their readiness to change and identify potential business opportunities to support the transition. This information is also being used to supplement the management of transition risk in our credit risk management processes. To improve our understanding of the progress our clients are making in reducing carbon emissions, in 2019 we launched a pilot scheme to develop a series of new transition metrics to help disclose our customers' progress towards a low-carbon economy. As part of the pilot, we calculated a weighted carbon-intensity ratio for over 900 customers within the six high risk transition sectors. We first obtained a client's total revenue carbon intensity from a third-party provider, CDP. The revenue carbon intensity ratio is effectively the carbon that is emitted per million dollars of revenue. It was calculated as emissions from both direct and indirect emissions, known as scope 1 and 2 emissions, divided by total revenue. We then weighted the revenue-carbon intensity ratio by our exposure to that client within the sector.

Next steps

In 2020, we intend to continue to explore what data is available to provide us with greater insight of our clients' portfolio emissions. We also aim to continue to review our retail exposures on a geographical basis in respect of natural hazard risk, for example considering flood risk for properties that we have provided financing on. These reviews are designed to help us identify key areas of vulnerability to climate change, the associated impact on property portfolios and economic activity. We also aim to review our policies and procedures with respect to physical risks associated with climate change for our own buildings and branches. These reviews will help us to understand any gaps in policies and procedures and will also improve our understanding of our physical risk exposure and how this might change over time. In next year's TCFD disclosure, we also expect to disclose more qualitative information on our approach to climate stress testing.

Table 2: Customer's questionnaire responses and pilot carbon intensity metrics

	Oil and gas	Building and construction	Chemicals	Automotive	Power and Utilities	Metals and mining	Total
Proportion of sector for which questionnaires were completed[4]	33%	37%	27%	39%	30%	44%	34%
Proportion of questionnaire responses that reported either having a board policy or a management plan[4]	84%	51%	85%	64%	94%	62%	72%
Sector weight as proportion of high transition risk sector[4]	18%	19%	19%	15%	15%	13%	100%
Pilot as % of total sector[4]	38%	41%	30%	52%	42%	46%	41%
Proportion of pilot that report carbon intensity metric through CDP[4]	49%	53%	38%	48%	38%	30%	44%
Weighted average carbon emissions per million dollars of revenue (total client emissions/revenue weighted by exposure)[4,5]	688	408	517	301	7,235	787	

4 All percentages are weighted by exposure.

5 Customer responses to CDP have been used to formulate the carbon intensity metrics in table 2. If a client does not complete the CDP questionnaire, information is not included in the metrics. The CDP questionnaire is voluntarily completed by clients between April and July of a given year and may not all be from a single point in time. Figures obtained from CDP have not been separately validated. The carbon intensity ratio is calculated by CDP using both reported figures and estimated data. Carbon emissions are measured in tonnes of carbon dioxide equivalent (tCO_2e) and revenue is measured in millions of US dollars.

AVIC Trust

AVIC Trust Co., Ltd. is a non-bank financial institution approved by the China Banking and Insurance Regulatory Commission (CBIRC). The company was reregistered and started business in December 2009 and has since grown into an industry leader with close to RMB 700 billion in AUM and more than RMB10 billion in net assets. In 2014, the company introduced the first systematically developed "green trust" strategy in the trust industry by making green trust an integral part of its business strategy. In order to build a "green industry + finance ecosystem," it has been refining its green trust conceptualisation and system design and advancing sustainable green investment and financing. As of September 2019, AVIC Trust had RMB 10.169 billion in current green trust assets with the cumulative amount of green trust investment and financing exceeding RMB 30 billion.

AVIC Trust's Climate and Environmental Information Disclosure Goals and Plan

Under the centralised leadership of the Chinese steering group and the basic framework of the UK-China Climate and Environmental Information Disclosure Pilot, AVIC Trust has formulated its phased plan. **Phase 1:** the company will re-examine its industrial taxonomy of existing green trust projects in line with the latest Green Industry Guiding Catalogue (2019) issued by the National Development and Reform Commission (NDRC), integrate basic data of green trust assets with the focus on economic performance indicators, and make corresponding disclosures. **Phase 2:** the company will improve basic data of green projects at the industry level and at the segment level with a view to improving evaluation and environmental risk identification for green projects towards gradual disclosure of environmental indicators and release of green trust self-evaluation report. **Phase 3:** the company will refine its green project benchmarks in light of its strategic plan and business development and put in place a comprehensive green trust indicator system.

Climate and Environmental Information Disclosure for 2019

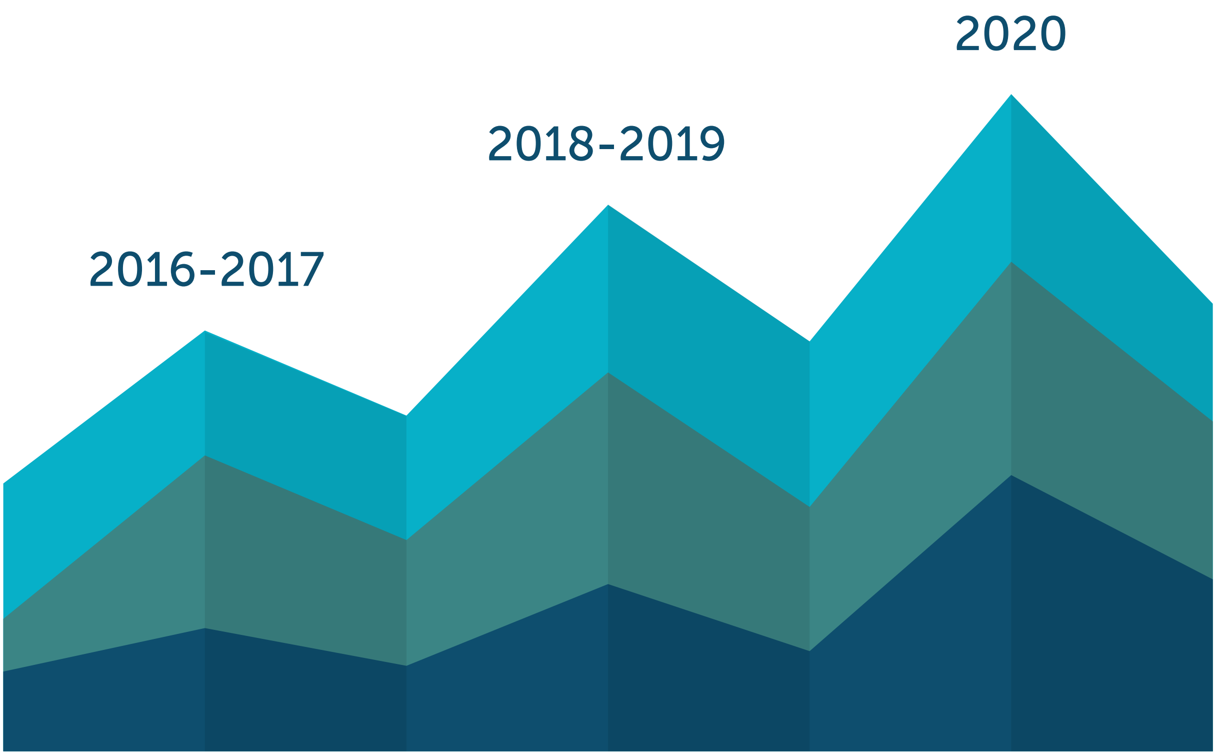
1. Corporate Governance

AVIC Trust strictly adhered to green development in accordance with the green trust development strategy formulated by the Board of Directors which was also responsible for the supervision and evaluation of the strategy implementation. The company gradually introduced green trust indicators to its business processes, established a green project evaluation system in conjuction with third parties, and made effective use of fintech including big data to optimise its green trust IT infrastructure. It also set up an external green development expert panel to provide advisory support for improving its green trust services and expertise.

2. Green Trust Strategy

According to its five-year strategic plan formulated in line with China's 13th Five-Year Plan for National Economic and Social Development and its existing conditions, AVIC Trust has focused on brand-building from 2016 to 2020 with its strategic goals being 1) to establish an organisational and operational system that matches its strategic positioning, 2) to become a leading integrated financial service provider with core competitiveness in China, and 3) to achieve value creation and growth for clients, shareholders, employees and the society. The company's green trust strategic plan has been not only geared to advancing the company's strategic vision, but also aligned with the relevant requirements in China's 13th Five-Year Plan for the Protection of Ecological Environment by setting forth phased strategic goals of green trust oriented to innovative, coordinated, green, open and shared development.

Figure 1: Green Trust Strategy of AVIC Trust



Governance infrastructure:

To improve the existing product system, client system, organisational system and management system

Advancement:

To implement, evaluate and improve the strategy roadmap

Brand upgrade:

To establish and implement the company's evaluation system that matches its overall strategy

3. Business Development

AVIC Trust is committed to building a "green industry + finance ecosystem" which facilitates collaboration with technologically advanced premier enterprises and institutions and enables integrated financial services. In 2019, the company entered into long-term strategic cooperation with financial institutions, green enterprises, environmental exchanges and governmental departments including Nuoke Environmental, Lanzhou Environment Energy Exchange, SinoCarbon, China Beijing Environment Exchange, Bank of Tangshan, and Ganjiang New District in concerted efforts to build a green finance ecosystem. Up to the present time, AVIC Trust has over RMB 30 billion AUM in wide-ranging areas of the green industry including renewable energy (natural gas, PV, etc.), pollution control (garbage and solid waste treatment, etc.) and energy efficiency (lithium-ion battery, replacement of coal-fired heating with electric heating, etc.).

4. Corporate Culture

Deeming a green development corporate culture as an inner driving force of green trust, AVIC Trust promoted the "Green AVIC Action" across the company, which inculcated green development into the company's corporate culture by putting the concept into action through specific measures, for example, carbon footprint calculation and low-carbon mini-program. In addition, the company promoted paperless office practices and organised employees to participate in relevant low-carbon activities such as tree planting, Earth Hour, and anti-food waste, encouraging them to embrace a green low-carbon lifestyle.

5. Green Trust Research

AVIC Trust released green trust development reports for three consecutive years in reflection of its up-to-date understanding of green trust theory, standards, the green industry and its segments (2016 AVIC Trust Report on Green Trust Development: Enabling Industry Transformation and Social Innovation, 2017 AVIC Trust Green Trust Indicators and Selected Cases, and 2018 AVIC Trust Report on Selected Trust Industry Segments). These reports covered themes including green trust standards, cases studies of green trust innovation, and green industries as well as selected green industry segments. AVIC Trust's 2019 report will focus on carbon trust and present its carbon trust theoretical and business innovation insights based on its collaborative research on carbon pricing mechanism with leading Chinese universities in the energy sector.

Figure 2: AVIC Trust reports on green trust development

6. Quantitative Environmental Indicators

To further optimise internal operations and management, enhance corporate social responsibility performance, reduce operating costs, and raise the awareness of energy conservation and emission reduction at the company level, AVIC Trust commissioned a third party to conduct a carbon footprint audit with a view to determining the amount and composition of its carbon footprint. As a result, the company could take targeted measures to reduce carbon emissions, facilitate public scrutiny, and achieve positive interaction between self-inspection and public supervision.

Table 1: AVIC Trust's total carbon dioxide emissions within its organisational boundary

Indicator	2017 Data
1. Carbon dioxide emissions from electricity consumption (tCO_2)	708.53
2. Carbon dioxide emissions from heating by branch offices in North China (tCO_2)	318.33
3. Carbon dioxide emissions from fuel consumption of business vehicles (tCO_2)	116.99
4. Carbon dioxide emissions from natural gas consumption of canteens (tCO_2)	6.97
Total carbon dioxide emissions (tCO_2)	**1150.82**

Bank of Huzhou

In 2017, Bank of Huzhou, Industrial and Commercial Bank of China, Industrial Bank of China and Bank of Jiangsu became the first batch of banking institutions joined the Pilot Programme of UK-China Climate and Environmental Information Disclosure. As a representative of China's small and medium-sized city commercial banks, Bank of Huzhou tried to explore and build its own environmental information disclosure framework and social risk management capability.

This year, Bank of Huzhou completed the establishment and implementation of its green credit management system and introduced the management concept of Equator Principles. It enforced the full-process environmental and social risk management and automatic calculation of environmental benefits for all corporate credits. The bank officially announced the adoption of Equator Principles on 24 July 2019, becoming the third Equator Bank in China.

Objectives and plans

Under the unified leadership and within the fundamental framework of the Chinese Task Force of the pilot, Bank of Huzhou formulated a phased disclosure plan: in 2018-2019, the Bank focused on disclosing qualitative indicators (bank-level green credit mechanism), qualitative indicators (environmental benefit data of key green industries), and the environmental impact of its owns operation. Supported by the green credit management system, Bank of Huzhou will gradually utilise environmental stress testing and scenario analysis of environmental risks in specific sectors. It continuously improves the analysis methods and the sector scope of environmental risk analysis.

Climate and Environmental Information Disclosure in 2019

In 2018, the Bank disclosed the development plan of green credit, the organizational structure of green finance, relevant risk control process, innovative projects and practices in its social responsibility report. In 2019, the Bank completed the phase I disclosure report according to the unified progress requirements of climate and environmental information disclosure. The disclosure contents mainly include environment-related qualitative indicators, investment and financing activities and the impact of its own operations on the environment.

1. Overall environmental objectives, strategies and governance structure

Bank of Huzhou bears in mind that "lucid waters and lush mountains are invaluable assets" and strives to compromise economic benefits and social values. It formulated and issued the Three-Year Strategic Plan for Green Finance, also carried out medium- and long-term planning for green finance from a strategic perspective. With the long-term development vision of "finance + green + science and technology + cooperation + risk control" as its strategy, it aims for an IPO in three years. The bank's long-term vision features in-depth development in China by embracing science and technology, at the same time seeking open cooperation and sustainable development. It clarified the responsibilities of "three committees and one management" and set up locally the Green Finance Committee, the Green Finance Department, and the Green SME Service Sub-branch. Meanwhile, it achieved an increase in both green credit balance and proportion in the current reporting period, as well as reducing its own environmental impact of operation (green office, energy conservation and emission reduction).

2. Environmental risk management

Bank of Huzhou published more than ten official guidelines, such as Marketing Guidelines on Green Credit Industry and Bank of Huzhou - Measures for Green Categorization of Corporate Customers, to incorporate "green credit" into credit "three checks" procedure and implement the "environmental protection veto power". It established a green credit management system and introduced the concept of Equator Principles, while embedding environmental and social risk assessment into the entire credit management procedure. By using the big data technology, the bank realised spontaneous guidance on loan operations, automatic identification of green classification, calculation of loan benefits, and alarms on environmental and social risks. To strengthen the identification, assessment and overall process management of environmental risks, the bank has set up positions including green finance specialist and manager in branches and sub-branches, as well as professional support positions and environmental risk management position in the headquarters.

3. Research and innovation in green finance

During the green finance development process, Bank of Huzhou explored and studied environmental and social risk management systems suitable for small and medium-sized banks, created a set of regulations and responsibilities related to Equator Principles, and completed the transformation to an Equator Bank. It established a green credit management system, solved the problem of environmental benefits calculation, and utilized big data and artificial intelligence to spontaneously identify green corporate credit customers and classify sectoral environmental risks, thus breaking the bottleneck of traditional manual judgement. The Bank innovatively launched a new series of vibrant green finance products, such as "whole-domain ecological loans", "green financial growth loans for private enterprises" and "green industry supply chain". The bank has promoted a total of 28 small and micro Industrial Park green projects, involving loans of about RMB 1.9 billion, while issued and delivered green finance bonds of RMB 1 billion.

4. Environment-related quantitative information

Bank of Huzhou upholds the culture of frugality, actively implements energy conservation and emission reduction practices, promotes green office, and earnestly fulfils its corporate social responsibility.

Table 1: Environmental Impact of Business Activities in 2018

Environmental Indicators	Detailed Item	Unit	Statistics
Direct Greenhouse Gas Emissions	Business Vehicles Fuel Consumption	Litre	352772.75
	Office Water Consumption	Ton	65901.96
Indirect Greenhouse Gas Emissions	Office Power Consumption	KWH	5617809.73
Environmental Protection Measures	Online Banking Coverage Rate – Corporate Clients	%	72.07
	Electronic Channel Transactions Substitution Rate	%	95.34
	ATM Replacement Rate	%	88.08
	Annual Spending on Green Finance and Environmental Protection Training	RMB 10,000	42
	Number of People Received Green Finance and Environmental Protection Training	Number of People	2000

To increase the environmental benefits from investment and financing activities, the bank has continuously increased its spending on green credit. In 2018, these activities reduced emissions in equivalent of 141,700 tons of standard coal and saved 369,900 tons of water.

Table 2: Environmental Impact of Invesment and Finance Activities in 2018

Green Credit-related Greenhouse Gas Emission Reduction Indicators	Detailed Item	Unit	Statistics
Balance and Proportion of Green Credit	Balance of Green Credit	RMB 100 Million	37.17
	Proportion of Green Credit	%	13.23
Changes in Green Credit Amount Equivalent to Emission Reductions	Equivalent to Reduction of Standard Coal	10,000 tonnes	14.17
	Equivalent to Reduction of Carbon Dioxide	10,000 tonnes	3.07
	Equivalent to Reduction of Chemical Oxygen Demand	10,000 tonnes	0.36
	Equivalent to Reduction of Ammonia Nitrogen	tonne	165.25
	Equivalent to Reduction of Sulphur Dioxide	tonne	22.8
	Equivalent to Reduction of Nitrogen Oxide	tonne	51.93
	Equivalent to Water Saving	10,000 tonnes	36.69

Bank of Jiangsu

Since joining the Pilot Programme of UK-China Climate and Environmental Information Disclosure in early 2018, the Bank of Jiangsu has actively participated in relevant meetings of the working group and improved its own environmental information disclosure system in line with the pilot plans and schedules. Moreover, it has been actively researching environmental stress testing methods and improving the quality of disclosed information. According to the short-term work objectives, we have compiled the bank's energy-saving and carbon emission reduction data, while sorting out the missing and difficult-to-quantify data.

Overall environmental objectives, strategies and governance structure

(1) Strategy and objectives

The bank has formulated the Bank of Jiangsu 2014-2018 Development Plan, proposing to promote green credit from a strategic level. It aims to expand support for green economy, low-carbon economy and circular economy, at the same time the bank could achieve a healthy and sustainable development. The Plan also promotes a coordinative and sustainable way of development, accomplishing a harmony between the economy and resources/environment. To fulfil the social responsibilities, the bank advocates the concept of green finance and green office and carries out environmental and social activities.

(2) Governance structure

The bank's senior management approved the implementation of green credit policies/procedures and designated an executive officer to implement the green credit strategy. The branch leaders are in charge of the green credit business line. The Corporate Banking Department of the Headquarters, as the management department for green credit across the bank, includes the Green Finance Division and the Public-Private Partnership (PPP) Division. These two divisions are mainly responsible for: directly running green finance and PPP projects; assessing various project plans; formulating the bank-wide green finance and PPP strategic plans; promoting bank-wide green finance and PPP business; taking the lead in environmental risk management and adopting Equator Principles; innovating new green finance and PPP products; and formulating green finance and PPP service plans. The branch Corporate Business Department is designated to lead regional green credit management and promote the implementation of green finance marketing.

Environmental risk management

In June 2013, the Bank formulated the Measures of Bank of Jiangsu on Environmental and Social Risks Management, which established the general principles of environmental and social risk management. It also developed a negative list of business activities involving social and environmental risks, determined the classification criteria and assessment procedure of the risks, and defined the division of responsibilities among departments. By doing so, the bank is committed to implementing environmental and social risk management measures in credit activities, products and services.

The Bank of Jiangsu adopted the Equator Principles in January 2017 and issued the Bank of Jiangsu Measures of Equator Principles Projects Management in June 2017. It also developed an online management function of the Equator Principles to further strengthen environmental and social risk management for project loan business. According to the above-mentioned two management methods, the bank divided risks into category A, B or C based on factors including the potential environmental or social impact of the project. The bank made a dynamic assessment on the environmental and social risk control progress for Category A and some Category B customers, took the results as an important basis for credit access, management and withdrawal, and adopted differentiated risk management measures in the "three checks" process of loans.

Research and innovation in green finance

The Bank of Jiangsu actively innovates green finance products and successively developed products including "Green Innovative Investment Business" and "Green Loan" in 2018. The "Green Innovative Investment Business" was jointly initiated by the China Clean Development Mechanism Fund Management Centre under the Ministry of Finance, the Department of Finance of Jiangsu Province and the Bank of Jiangsu. It uses a collective trust plan financing model to support environmental protection projects in Jiangsu Province that address climate change, such as green and low-carbon development, energy conservation and emission reduction. The "Green Loan" is a credit product jointly initiated by the Department of Finance of Jiangsu Province and the Department of Ecology and Environment of Jiangsu Province. Its main feature is that the Department of Finance has set up a green loan risk compensation fund pool to provide additional credit for the "Green Loan". The bank issues loans to energy-saving and environmental protection infrastructure construction and industrial projects within the scope designated by the Department of Ecology and Environment of Jiangsu Province, thus meeting the capital requirements in the process of enterprise project construction and industrial development.

Internal system and incentive arrangements

The bank gives prioritised support to the development of green credit products and services through effective means including rational allocation of economic capital and credit resources:

(1) Formulating and implementing differentiated green credit resource allocation policies, implementing differentiated FTP pricing, allocating special quotas for green credit, and giving prioritised support to green credit. (2) Setting green finance as a strategic indicator in the branch's performance appraisal, highlighting the bank's strategic orientation in developing green finance.

Awards

Table 1: Awards for Green Finance Received by the Institution

Awarding Organisation	Awards
China Banking Association	China Banking Industry's Best Green Finance Award for Social Responsibility in 2016
AsiaMoney	Best Green Finance Award for Regional Commercial Banks
National Business Daily	China's 2018 List of Pioneering Small and Medium-sized Commercial Banks - Green Finance List
China Banking Association	Outstanding Contribution Award of Green Credit Business Committee
Modern Express	2018 Green Finance Model Award
China Environment Service Industry Association	China's Top10 Listed Companies of Environmental Responsibility, China's Top10 Leading Enterprises of Environmental Responsibility

Environment-related quantitative information

The Bank of Jiangsu always practices frugality, actively carries out energy conservation and emission reduction work, promotes green office, and earnestly fulfils its corporate social responsibility.

Table 2: Greenhouse Gas Emissions and Natural Resources Consumption from Operating Activities

Environmental Indicators	Detailed Item	Unit	September 2019	2018	2017
Direct Greenhouse Gas Emissions	Business Vehicles Fuel Consumption (Headquarters)	Litre	-	34065	28630
	Office water consumption (Headquarters)	Tonne	-	74744	73472
Indirect Greenhouse Gas Emissions	Office electricity consumption (Headquarters)	KWH	-	7434400	7278900
Environmental Protection Measures	Personal Online Banking Transaction	RMB 100 million	4545.77	7632.37	8116.4
	Mobile Banking	RMB 100 million	15112.94	14908.39	7349.8
	Corporate Online Banking	RMB 100 million	32252.93	42869.2	53141.9
	Public Welfare Activities	Number of participants	-	1421	1001
	Video Conference	Time	-	-	398

By the end of September 2019, the Bank's green credit balance was RMB 83.283 billion, which is a RMB 3,707 million increase over the beginning of the year and 12.57% of the bank's business loans. According to the 12 green credit indicators of CBRC, projects with the highest green credit balance are: garbage disposal and pollution control projects: RMB 17,358 million; green forestry development projects: RMB 16,161 million; and energy conservation building and green construction projects: RMB 12,553 million. These three accounted for 55.33% of the bank's total green credit balance. Since the first green credit statistics conducted in 2013, the bank's green credit balance and proportion in the business loans have maintained the momentum of growth while generating good environmental benefits.

Table 3: Environmental Impact from the Investment and Financing Activities

Index for Reduction of Green Credit Greenhouse Gas Emission	Item	Unit	September 2019	2018	2017
Balance and Proportion of Green Credit	Balance of Green Credit	RMB 100 million	832.83	795.76	669.7
	Proportion of Green Credit	%	12.57	12.86	12.20
Changes in Green Credit Amount Equivalent to Reduction of Emissions	Equivalent to Reduction of Carbon Dioxide Emissions	10,000 Tonnes	115.22	98.29	120.6
	Equivalent to Reduction of Standard Coal Emissions	10,000 Tonnes	148.85	189.62	137.2
	Equivalent to Reduction of Chemical Oxygen Demand Emissions	Tonnes	108603	12.43	5847
	Equivalent to Reduction of Ammonia Nitrogen Emissions	10,000 Tonnes	0.04	0.84	0.08
	Equivalent to Reduction of Sulphur Dioxide Emissions	Tonnes	27142	16.66	3686
	Equivalent to Reduction of Nitrogen Oxide Emissions	Tonnes	37175	3.12	9395
	Equivalent to Water Saving	10,000 Tonnes	10078	10286	10237

China Asset Management Co., Ltd

China Asset Management Co., Ltd. (China AMC) is an asset management company registered with the China Securities Regulatory Commission. Founded in 1998 and headquartered in Beijing, it is one of the largest asset management companies in China, one of the seven Chinese financial institutions in the UK-China Climate and Environmental Information Disclosure Pilot Programme Working Group, and a member of the Green Finance Committee of the China Society for Finance and Banking. As a participant in domestic and global capital markets, it is committed to providing investors with sustainable investment returns. China AMC believes that environmental factors have certain effects on the long-term performance of securities and companies.

In March 2017, China AMC became the first large asset manager to sign on UN Principles for Responsible Investment (UNPRI). Since then, it has been advocating the non-financial information disclosure by listed companies. Besides, it has begun to incorporate environmental, social and governance (ESG) analysis into its investment procedure.

In September 2018, China AMC became the first Chinese asset manager to sign the Task Force on Climate-Related Financial Disclosures (TCFD) and the Climate Action 100+ (CA100+) initiative. It is committed to improving enterprises performance in environment-related information disclosure, developmental strategy to climate change, and emission reduction targets.

In April 2019, China AMC participated in the review and revision of the asset management section in the draft Guide to Financial Institutions Environmental Information Disclosure, and provided, together with other pilot financial institutions, professional advice for setting the sectoral standards of climate and environmental information disclosure.

As a participant of the UK-China Climate and Environmental Information Disclosure Pilot Programme Working Group, China AMC has assessed various aspects of climate and environmental information disclosure in China, including regulatory compliance, data quality, operational feasibility and market impact. The assessment referred to the practice of sustainable investment in the global market and took into account the specific situation of the domestic market. For asset managers, many external factors, including data quality, are still challenges. China AMC strives to push progress in this regard, and keeps calling for better information disclosure by enterprises.

Objectives and plans

China AMC is building an internal ESG assessment system, and the framework will be completed soon. Based on this framework, ESG team has set up corresponding ESG (including environment) information data points according to actual investment needs and domestic capital market environment, and it plans to finish the internal ESG sector database in the near future. In the long run, China AMC will incorporate the ESG disclosure and assessment system into the entire investment process at the company level, so that ESG information will truly become a factor influencing and guiding investment decisions.

Climate and environmental information disclosure in 2019

1. Environmental objectives, strategies and governance structure

Since 2019, China AMC has set up a special ESG research team under the investment group to conduct various special investment analysis from the perspective of ESG. The ESG research group reports to investment managers and the Investment

Committee. In its day-to-day work, the ESG team conducts quantitative and qualitative analysis on the Company's shareholding, investment portfolio and ESG risk events, in addition to preparing ESG-related reports required by regulators or clients.

Strategically, China AMC has started to integrate ESG resources, including product R&D, fixed income investment, quantitative investment, risk control and marketing, from various departments this year. So far, it has established a more efficient internal synergy system to coordinate the resources and strengths of the front, middle and back offices, thus laying the foundation for achieving the overall goal of "internalising ESG as an integral part of the investment process and integrating it into day-to-day business activities".

2. Environmental risk management

In addition to improving investment returns, environmental factors could help identify and reduce investment risks. China AMC has studied the environmental risk management system and its potential impact on business operations and strategies. At the current stage, challenges remain in standardisation, verifiability and company-level climate and environmental information disclosure. China AMC uses various investment research tools, internal analysis and third-party data to improve its understanding of environment-related issues. It is aware that global and domestic environmental risks, such as climate change and water shortage, might affect economic development and the capital market, so that the identification of risks and opportunities is important in investment management.

China AMC carries out environmental risk management at three levels:

1. Negative information screening at the company level. The Company's Risk Control Department has set up an internal negative information screening system covering the whole company. Through keywords capture and filtering, the system can identify ESG risks of investment targets and give early warnings.

2. ESG risk exposure at the portfolio level. Under the Investment Department, the ESG research team monitors ESG score and prompts risk points on all investment portfolios on a quarterly basis, and it then informs investment managers and relevant industry researchers.

3. ESG risk exposure at the individual stock level. To identify the ESG risks, China AMC conducts ESG fundamentals research and risk assessment of key holding companies.

3. Research and innovation of green finance

In 2017, China AMC launched two theme funds in China: Huaxia Energy Conservation and Environmental Protection Securities Investment Fund and Huaxia Energy Innovation Securities Investment Fund. These funds are committed to providing investment opportunities for Chinese investors amid China's long-term sustainable ecological progress.

In April 2018, China AMC and NN Investment Partners (NNIP) established a strategic partnership to leverage the Chinese and international investment experience. The two companies have formulated sustainable investment strategies together for various markets.

In 2019, China AMC put the ESG team under its Investment Department, which was unprecedented in the sector. China AMC includes ESG considerations into its strategy designation, fundamentals research, portfolio management, risk control, corporate communication and supervision reports. In this way, fund managers and industry researchers have to incorporate ESG factor in their work. Based on MSCI's ESG framework system, the internal assessment system developed by China AMC is more in line with the national conditions and the A-share market. The said system is now being applied for industry analysis.

E Fund Management Co., Ltd

E Fund Management Co., Ltd. (E Fund), one of the two asset management pilot institutions in the UK-China Climate and Environmental Information Disclosure Pilot Programme Working Group, has been actively attending relevant meetings and fulfilling due responsibilities after joining the group. While integrating environmental factors into its internal investment decision-making process, the institution earnestly promotes the group agenda and participates in drafting and implementing the environmental information disclosure plans of asset management institutions.

As early as March 2018, E Fund, as the representative of China's asset management industry, attended the UK-China Green Finance Working Group Meeting in London and discussed green investment in China with UK asset managers and international organisations. Specifically, they exchanged opinions on the current status, existing challenges and the pilot scheme of green investment in the fund sector of China. Based on the previous group discussion, its own situation, and the industry characteristics, the institution advised and commented on the Guideline to Climate and Environmental Information Disclosure of Financial Institutions in April 2019. In June 2019, the institution reported its disclosure-related progress at the sixth meeting of the working group. Meanwhile, it continues to promote the internal implementation of risk identification, assessment, and disclosure.

Objectives and plans

As the first fund manager joined the UN Principles for Responsible Investment (UNPRI) in China and a standing council member of the Green Finance Committee of China Society for Finance and Banking, E Fund is committed to 1) promote institution-level environmental information disclosure, 2) raise awareness of asset owners and investment managers on green finance and responsible investment, and 3) adopt quantitative and systematic approaches to manage its environmental risks.

E Fund believes that effective climate and environmental information disclosure by financial institutions requires long-term progressive efforts. To advance the work, it is necessary to make feasible plans and complete them step by step. So far, the institution has gradually built a management framework for green finance and responsible investment, established a systematic platform for collecting ESG information, and started disclosing relevant information after thorough preparations. Going forward, it will further improve the disclosure framework by taking the TCFD recommendations, regulatory requirements and its own conditions into consideration. It will conduct in-depth research on disclosure approaches suitable for asset managers and refine disclosure indicators with strong correlations. In the longer term, E Fund will further streamline the collection system of company environmental information and help its investees in environmental information disclosure. If sufficient information is available, the institution will conduct scenario analysis and stress testing to explore the environmental impact and refine the approaches.

Climate and environmental information disclosure in 2019

1. Overall environmental objectives, strategies and governance structure

To promote sustainable and responsible investment in the long run, E Fund is dedicated to pushing investees and asset managers to disclose environmental information and manage environmental risks by quantitative and systematic methods.

In terms of strategy implementation, the institution attaches great importance to research and innovation. It monitors and manages the environmental risks of investees through data accumulation, system construction, model development, quantitative methods and result application. In response to its own environmental risks, E Fund is exploring feasible ways to control and disclose environmental risks based on the characteristics and realities of asset managers.

In terms of governance structure, as a member of UNPRI, E Fund has set up a dedicated ESG task force to promote internal environmental information and ESG investment. The task force gathers full support from the senior management level and creates synergy across all teams.

2. Environmental risk management
One of the major environmental risks faced by an asset manager is caused by its investees, which is due to environmental changes or the significant impacts they bring to the environment. The senior-level and the investment committee of E Fund value environmental information and risks, as they are well aware that environmental problems have a tremendous impact on its business and related funds. In a top-down manner, it has incorporated environmental risk identification, assessment and management into its day-to-day investment and operating decision-making process.

More specifically on data detection and processing, E Fund has developed an information processing system with AI and big data technologies. The system can automatically capture, collect, analyse, and display environmental information of investees from the open market. To enhance the institution's ability to manage environmental risks, the technology team constantly communicates and cooperates with the research team on how to collect and utilise publicly disclosed environmental information. For example, capturing effective information points by screening, as well as categorizing, integrating and analysing the captured information in a more productive way.

As regulators gradually determine the specific indicators related to the identification and assessment of financial institutions' environmental risks, E Fund will further refine internal risk control rules and approaches to better manage its environmental risks.

3. Research and innovation in green finance

- Green products Innovations: E Fund launched its ESG responsible investment public offering products, which incorporate negative screening, ESG integration, shareholder engagement and other strategies to the research process. Also, in order to implement green finance into the investment process, it incorporates various approaches including environmental risk assessment, environmental management capability analysis, and negative environmental records into its ESG concept.

- Green investment research capability building: E Fund internally promotes ESG-based research methods, studies indicators and methods for financial institutions' environmental information disclosure, and formulates guidelines for green investment and green assessment standards together with the sectoral associations. It provides training for research staff, so that they could develop a more environment-friendly decision-making mechanism and rationally avoid environmental risks.

- ESG database establishment: To improve its research database, the Financial Technology Department of E Fund developed an ESG database containing environment regulation information. The ESG database gathers the environmental records of listed companies into its platform by monitoring public news, regulatory information and voluntary environmental information disclosure.

Industrial and Commercial Bank of China

As a large listed bank with wide international influence, Industrial and Commercial Bank of China (ICBC) is deeply aware of the far-reaching influence of resources and environment on economic and social development. It is ICBC's strategic goal to "build an internationally leading green bank with a high international reputation." Since 2007, ICBC has been publishing social responsibility reports for 13 consecutive years. The reports are based on international standards and follow the guidelines and requirements of China Banking and Insurance Regulatory Commission, China Banking Association, Shanghai Stock Exchange and Hong Kong Stock Exchange. ICBC discloses high-quality responsibility information building on six dimensions (value excellence, adherence to origin, customer preference, innovation leadership, safety and stability, and people orientation), while highlighting the environmental, social and governance (ESG) factors. Since 2019, ICBC made good progress by carrying out effective exploration of climate and environmental information disclosure, while taking the leading role of the UK-China Climate and Environmental Information Disclosure Pilot Programme.

Preparation and Release of Special Report on Green Finance

ICBC actively promotes international standards integration and advocates the concept of sustainable development globally. In 2017, it became a member of the Task Force on Climate-Related Financial Disclosures (TCFD) of the Financial Stability Board, the first Chinese financial institution in China to join the TCFD. In 2019, based on its actual conditions and in accordance with the requirements of the Action Plan for Climate and Environmental Information Disclosure by Chinese Commercial Banks and the Target Framework of Chinese Pilot Institutions for Climate and Environmental Information Disclosure by UK and Chinese Financial Institutions, ICBC compiled and released the **Special Report on Green Finance** for the first time. This report comprehensively introduces ICBC's green finance practice and achievements in 2018 from the perspectives of strategy and governance, policies and processes, green products, green operations, green research, awards and honours in accordance with China's regulatory disclosure requirements and the TCFD framework, with the aim of achieving the following three objectives:

1. comply with the regulatory requirements and increase transparency in operation and management.
2. play an exemplary and leading role in accelerating the process of greening the economy and finance.
3. Improve the brand reputation and show the image of a large responsible bank.

Solid Progress in Green Credit

ICBC actively develops green finance to support the real economy, guides the green real economy transformation through green credit, and supports the development of green industry with green credit and other financial products. By the end of 2019, ICBC had invested RMB 1350.84 billion (an increase of RMB 113.08 billion or 9.1% over the beginning of the year) in energy-saving and environmental protection projects and services such as ecological conservation, clean energy, energy conservation and environmental protection, and resource circulation.

1. Issuing the Opinions on Comprehensively Strengthening the Development of Green Finance to clarify the future key tasks of ICBC in this regard. The Opinions includes the following: further recognises the importance of green finance development; proclaims the objectives and basic principles; sorts out the main targets and specific measures to strengthen green finance development. There are seven main targets: continuous promotion of green restructuring on investment and financing; practical improvement of investment and financing environment and social risk management; active development of green finance innovation; overall improvement of self-performance; through implementation of regulatory requirements; protection of green finance organisations and enhancement of their day-to-day management. Seven main targets and 25 specific measures lay a solid foundation on overall strengthening of green finance development, building an international leading green bank and achieving the sustainable development of investment and financing businesses. In order to promote green capital integration and serve China's three major strategies (the Belt and Road Initiative, the Beijing-Tianjin-Hebei Integration Plan, and the Yangtze River Economic Belt), ICBC has also formulated and issued regional credit guidelines accordingly. These guidelines will guide ICBC branches to seize strategic opportunities, cultivate new credit growth drivers in various ways, and achieve healthy and sustainable development of credit business.

2. Strengthening the whole process management of green credit. According to the environmental impact of loans, ICBC's domestic corporate loan customers and projects are classified into twelve categories and four classes. The mechanism is embedded into the bank's asset management system, thus managing customers' environmental and social risks in a scientific and quantitative way. ICBC fully implements the "green credit one vote veto system", applies specific requirements for monitoring, identification, control and slow release of environmental and social risks, and eventually embeds them into the whole process of credit.

3. Improving the Informationisation level of green credit management. Since 2014, ICBC has added the "energy conservation and environmental protection projects and services" indicator to the credit management system, including 8 sub-indicators such as the categorization of energy conservation and environmental protection projects and services, the effectiveness of energy conservation and emission reduction projects. The indicator has sorted out and verified the green credit categorisation and the statistical data quality for ICBC corporate customer loans, thus ensuring the timeliness and accuracy of green credit statistical data and disclosure information.

Strengthening and Improving Environmental Risk Management

1. Clarifying main responsibilities of risk prevention and control. To layout the objectives and tasks of future risk management work, ICBC has formulated and compiled the Group's Regulations on Comprehensive Risk Management, Measures for Management of Risk Appetite, 2018-2020 Risk Management Plan.

2. Strengthening capacity building of risk quantification. ICBC constantly optimises its internal risk measurement model and applies it further. It strengthens the continuous monitoring, optimization, verification and management of credit, market and operational risk measurement systems, and in the meantime, promotes the construction of the enterprise-level data application system.

3. Reinforcing green credit assessment and resources allocation. ICBC regularly carries out self-assessment of green credit implementation, puts forward relevant improvement measures. In 2019, ICBC completed the self-assessment of green credit implementation for 2018 and won the title of "Outstanding Green Bank Organisation" in the 2018 Green Bank Assessment organized by the China Banking Association.

Active Promotion of Green Bond Market

Since 2017, ICBC has successfully issued five green bonds overseas, totalling nearly USD 10 billion. In 2018, ICBC underwrote six green bonds for various domestic institutions, raising a total of RMB 65.51 billion. In 2018, ICBC issued two Belt and Road Initiative green thematic bonds to facilitate the development of China's green bond market.

On 5 June 2018, ICBC issued a Belt and Road Initiative green bond denominated in USD and EUR through its London branch, with the final issue amount equivalent to USD 1.6 billion. This bond was officially listed on the London Stock Exchange, and has become the largest green bond floating on the LSE. On 14 June 2018, ICBC (Asia) issued a Belt and Road Initiative green bond denominated in USD and HKD. and the bond was officially listed on the Stock Exchange of Hong Kong, totalling USD 730 million. This bond compiles with the latest Chinese and international standards of green bonds and obtained the Pre-issuance Stage Certificate issued by the Hong Kong Quality Assurance Agency (HKQAA). It was the first green bond issued by a financial institution under the Hong Kong SAR government and the first one issued by a licensed bank registered in Hong Kong.

In April 2019, ICBC Singapore Branch issued the world's first Belt and Road Initiative inter-bank regular cooperation green bond, denominated in RMB, USD and EUR, totalling USD 2.2 billion. In September 2019, ICBC Hong Kong Branch issued the first global financial institution "Guangdong-Hong Kong-Macao Greater Bay Area" themed green bond, totalling USD 3.15 billion, which was the largest green bond issuance by a global commercial bank.

In November 2019, ICBC Leasing successfully issued an off shore green bond worth USD 600 million, which was the first Chinese-funded green leasing bond in the international capital market.

Innovation in Green Research

1. Stress testing leads the world. In 2018, ICBC and China Beijing Environment Exchange launched a stress test research on credit risk of commercial banks and carbon trading. The research results were officially released in June 2019. The research expanded the scope of stress testing with innovative research methods.

2. Launching ICBC ESG Green Index. Jointly developed by ICBC and China Securities Index, "CSI 180 ESG Index" was officially launched In December 2018. The index is based on ICBC's ESG green rating, which effectively improves the accuracy and effectiveness of ESG rating by utilising the bank's accumulated data over a long time.

3. In-depth participation in drafting the Principles for Responsible Banking. As a member of the core working group of the Principles for Responsible Banking and the only Chinese financial institution among the founding banks, ICBC has engaged in drafting the Principles, which was officially released in New York in September 2019.

4. Leading research and preparation of Financial Institutions Environmental Information Disclosure Standards of the People's Bank of China. According to the working arrangements of the People's Bank of China, ICBC led the preparation of the Financial Institutions Environmental Information Disclosure Guidelines. Based on the relevant progress of the Pilot Programme of UK-China Climate and Environmental Information Disclosure and the existing recommended standards in the financial industry, ICBC, after consultation with working group members and experts from the Financial Standards Committee, drafted the Guideline on Financial Institutions Environmental Information Disclosure, which is currently in the project eastablishment process.

5. Closely monitoring domestic and international practices on climate and environmental information disclosure. ICBC has been monitoring and studying the latest progress of the TCFD framework, by interpreting and analysing the 2019 Status Report: Task Force on Climate-related Financial Disclosures. Meanwhile, in order to advance the climate and environmental information disclosure work, the bank has made an in-depth analysis of the HKEX ESG Reporting Guide in terms of changes and suggestions.

Gradual Disclosure of Quantitative Indicators

ICBC publicly disclosed 2018 carbon footprint measurement indicators, which cover the environmental impact of its business activities (Table 1) and its investment and financing activities (Table 2).

The statistical data comply with the regulatory reporting statistics rules and the energy conservation and emission reduction calculation requirement from CBRC's Notice on Submission of Green Credit Statistics Form. Green credit project numbers were extracted from project approval documents, feasibility study reports, and environmental impact assessment reports. Statistics suggest that ICBC has achieved remarkable green credit-related environmental performance in 2018, with total emission reduction of 89,859,600 tonnes of Carbon Dioxide Equivalent (an increase of 271700 tonnes.

Going forward, ICBC will continue to make great efforts in its own environmental information disclosure, as well as in leading the pilot working group. ICBC will also join hands with pilot participants to actively explore and demonstrate the climate and environmental information disclosure development, which will become practical case studies for domestic and international financial institutions.

Table 1: Greenhouse Gas Emissions and Natural Resources Consumption from ICBC's Operating Activities

(Equivalent to Scope1, Scope2)

Environmental Indicators	Detailed Item	Unit	2018	2017	2016
Direct Greenhouse Gas Emissions	Business Vehicles Fuel Consumption (Headquarters)	Litre	76,699	86,109	86,532
	Office Water Consumption (Headquarters)	Tonne	172,377	170,196	156,324
Indirect Greenhouse Gas Emissions	Office Electricity Consumption (Headquarters)	KWH	18,394,080	19,408,280	19,867,300
	Office Paper Consumption (Headquarters)	Million Pieces	8.72	8.73	7.71
Environmental Protection Measures	Proportion of Domestic E-Banking Business	%	97.7	94.86	92
	Spending of in Voluntary Afforestation (Headquarters)	RMB 10,000	6.6	6.6	——
	Number of Green Food Enterprises on RongeGou Platform	Number of Enterprises	——	943	——
	Electronic Management of Procurement Files	——	——	21 out of 28 types of centralized procurement files are in online digital format	——
	Other Environmental Protection Measures	——	Innovative Energy Saving and Emission Reduction Mode	Innovative Energy Saving and Emission Reduction Mode	——
		——	Paperless Counter Operation	Paperless Counter Operation	——
		——	Promoting Responsible Procurement	Promoting Responsible Procurement	——
		——	Transmitting Green Ideas	——	——

Figure 1 Greenhouse Gas Emissions of the Bank's Institutions in Beijing (Unit: Tons)

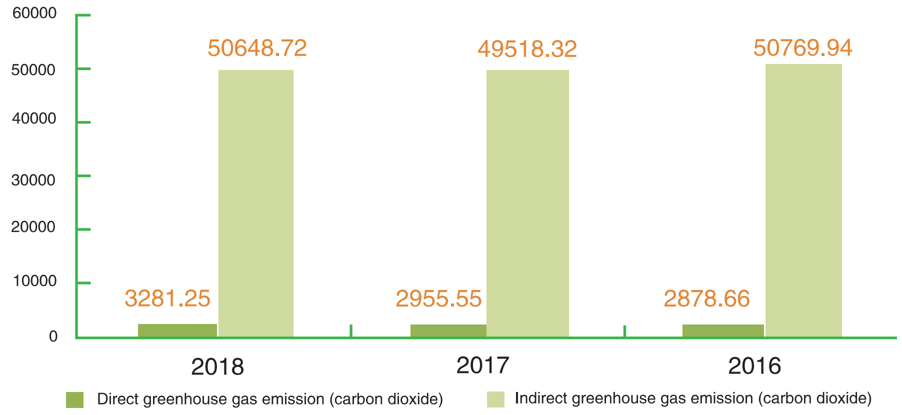


Figure 2 Environment Impact of ICBC's Investment and Financing Activities

Industrial Bank Co., Ltd.

2018 marked 30 years of Industrial Bank Co., Ltd. (Industrial Bank) and 10 years of its adoption of the Equator Principles. After 12 years of unremitting efforts in the green finance sector, Industrial Bank established a service system that includes various green finance products covering enterprises and individuals. Echoing the Equator Principles, it developed a combination of concepts, methods and instruments, in addition to a comprehensive environmental and social risks management system, thus transforming itself from a green bank to a green finance group. Industrial Bank's environment-related performance from investment and financing activities are shown in Table 1.

Participation in the Pilot Programme of UK-China Climate and Environmental Information Disclosure

In 2018-2019, under the guidance of the Action Plan of the UK-China Climate and Environmental Information Disclosure Pilot Programme Working Group, Industrial Bank studied, on multiple occasions and from different perspectives, the ways for financial institutions to identify and quantify financial risks related to climate and environment. The action plan aimed to help financial institutions avoid such risks and improve their financial stability. It also further explored the pilot work plan. The bank, as the co-chairman of the Green Investment Principles for the Belt and Road Initiative, is undertaking relevant tasks from the climate and environmental information disclosure working group.

In line with the Action Plan for the Climate and Environmental Information Disclosure by Pilot Commercial Banks in China, Industrial Bank made disclosures in qualitative and quantitative indicators accordingly. Qualitative indicators: the guidance of corporate governance on green finance business, the announcement of strategies and practices of sustainable development, the establishment and improvement of green credit system, the improvement of environmental and social risk management process, green finance research and innovation, as well as relevant case studies. Quantitative indicators: green credit balance, relevant environmental benefits, relevant operating indicators and carbon emissions (Table 2), and green credit training. The disclosed information basically covers the indicators for the first phase (2018-2019).

Climate and Environmental Information Disclosure Work

(I) Objectives and plans

As China's first "Equator Bank", Industrial Bank is an advocate and practitioner of green finance. It supports social, economic and environmental sustainability by providing high-quality green finance products and services. It draws on experience from international climate investment and financing initiatives as well as global information disclosure practices. It has made significant progresses in: releasing the first sustainability report in China's banking sector; publishing books on green finance and the management of social and environmental impact; continuously enhancing capacity building; and promoting its practical experience. Going forward, the bank will expand its climate and environmental information disclosure capability to become a "first-class provider of integrated green finance services". Moreover, it will further improve relevant information disclosure approaches in line with the pilot programme of UK-China Climate and Environmental Information Disclosure and the Green Investment Principles of the Belt and Road Initiative.

(II) Climate and environmental information disclosure in 2019

In 2018, Industrial Bank prepared an annual corporate social responsibility (CSR) report and disclosed environmental information in accordance with the requirements of Chinese regulators and international consensuses such as the United Nations Sustainable Development Goals (SDGs), the Equator Principles III, and the GRI Standards of the Global Sustainability Standards Board (GSSB). The report not only demonstrated the environmental benefits brought by green finance businesses, but also objectively disclosed the ratio of business loans to high-polluting, energy-intensive sectors and sectors with overcapacity (the Targeting Industries, for short)[16] as well as outstanding balance wherein (see Table 3). One highlight of the CSR report is the new section "interaction between stakeholders". According to the SDGs, internationally accepted social responsibility standards, and typical features and practices of the financial sector, Industrial Bank identified six major stakeholders and 32 topics in corporate governance, employee rights, as well as economic, environmental and social performance. Then it conducted a questionnaire to find out how important these topics are, organized an expert panel to review the findings, and presented the outcomes and implications in the CSR report. It also disclosed information on its official and related websites in forms of annual report, annual Equator Principles performance report, special issues on social responsibility, report on the use of funds in green finance bonds (domestic and abroad), and report on third-party assessment in the duration.

In 2018, Industrial Bank enhanced its capacity building in green finance and climate and environmental information disclosure. It made the following improvements in environment-related strategy, governance framework, risk management, and product innovation.

1. Further improving the governance framework for green finance. It established Green Finance committee (GFC), which leads the bank's green finance business, deliberated over the strategic planning and institutional mechanism for the green finance business, and coordinated major matters related to green finance. Chaired by the bank's president, the GFC includes 10department heads at the Headquarters.

2. Optimising risk management methods. Industrial Bank issued the Comprehensive Risk Management System of Industrial Bank, which requires environmental stress testing to further enhance its ability to manage environmental and social risks. The document was followed by the Notice of Industrial Bank on Further Strengthening Equator Principles Project Management and Improving the Quality and Effectiveness of Environmental and Social Risk Management, which provides instructions for branches to strictly implement whole process control according to the Equator Principles and the regulations.

3. Furthering professional research and product innovation. Firstly, the bank played an important role in formulating standards for green finance, climate investment and financing and information disclosure under the leadership of the PBoC and the CBIRC. Secondly, it issued the first overseas dual-currency green finance bond, becoming the world's largest commercial financial institution in this regard. Its bond issuance framework was rated as "dark green" by the Centre for International Climate and Environmental Research (CICERO) and obtained green certification from the Climate Bonds Initiative (CBI) and the Hong Kong Quality Assurance Agency (HKQAA). Thirdly, it worked with China Clean Development Mechanism Fund to launch "Green Innovative Investment Business" for energy-saving projects that meet certain requirements, and it also provided low-cost policy-based funding for green enterprises through entrusted loans and financing guarantees. Fourthly, it published Shouldering Social Responsibility—Exploration and Practices of Commercial Banks in Green Finance, and Green to Gold: An Empirical Study on the Sustainable Development of Banks Based on Equator Principles, expounding Industrial Bank's experience in green finance. Fifthly, it became the participator and sponsor of Kigali Cooling Efficiency Program and will launch special research, product design and market development in the cooling field.

4. Environment-related quantitative information

16 For details of the Targeting Industries, please refer to CBRC's Notice on Implementation of Key Assessment Indicators for Green Credit (YJBF [2014] No.186).

Table 1: Environment-related Results from Investment and Financing Activities

Environmental Indicators	Detailed Item		Unit	2016	2017	2018
Economic Performance	Total Assets		RMB 100 million	60858.95	64168.42	**67116.57**
	Social Contribution Value per Share[17]		RMB	12.12	13.10	**13.82**
Social Performance	Number of Current Employees		Number of people	54208	58997	**59659**
	Bank-wide Donation		RMB 10,000	3244	2100	**3700**
Environmental Performance	Cumulative Amount of Green Finance Products		RMB 100 million	10761	14562	**17624**
	Green Financing Balance		RMB 100 million	4944	6806	**8449**
	Annual reductions from Green Finance Projects	Standard Coal Saving	10,000 tonnes	2646.80	2912.23	**2979**
		Reduction of Carbon Dioxide Equivalent	10,000 tonnes	7408.31	8378.23	**8416.87**
		Reduction of COD Emissions	10,000 tonnes	168.04	385.43	**398.34**
		Utilisation of Solid Wastes	10,000 tonnes	1877.87	4479.48	**4543.75**
		Water Saving	10,000 tonnes	30390.06	40842.37	**40978.19**

Source: the 2018 Sustainable Development Report of Industrial Bank Co., Ltd.

17 The "social contribution value per share" herein is calculated according to the Notice on Urging Listed Companies to Take More Social Responsibility and the Issuance of the "Guidelines on Climate and Environmental Information Disclosure of Companies Listed on the Shanghai Stock Exchange" issued on 14 May 2008. Specifically, the contribution value per share = income per share + (tax payment + employee expenses + interest expenses + total public welfare investment - social cost)/total share capital at the end of the period.

Table 2: Energy Consumption and Greenhouse Gas Emissions from Operating Activities

The Headquarters' Total Office Water Consumption (tonne)	136672.07
The Headquarters' Total Office Electricity Consumption (10,000 KWH)	2493.94
The Headquarters' Total Office Paper Consumption (tonne)	9.36
The Headquarters' Business Vehicles Fuel Consumption (litre)	1615409.7
Proportion of the Headquarters' Video Conferences to the Total Conferences (%)	22.51
Bank-wide Video Conference Equipment Coverage Rate (%)	100
The Headquarters' Carbon Dioxide Emissions in 2018 (tonne) *	24868.13

*Note: The carbon dioxide emissions are calculated using the Instrument for Calculating Greenhouse Gas Emissions from Fixed Sources (Version 4.1) by the World Resources Institute.

Source: the 2018 Annual Sustainability Report of Industrial Bank Co., Ltd.

Table 3: Investment and Financing Activities Related to the Targeting Industries

The Targeting Industries	Balance in 2016 (RMB 100 million)	Ratio of business loans in 2016	Balance in 2017 (RMB 100 million)	Ratio of business loans in 2017	Balance in 2018 (RMB 100 million)	Ratio of business loans in 2018
Textile, Leather Processing, Paper Making	25.86	0.20%	24.21	0.17%	26.61	0.16%
Chemical Raw Materials and Chemicals Manufacturing*	124.40	0.98%	143.65	0.99%	228.87	1.37%
Rubber and Plastic Products*	10.48	0.08%	15.46	0.11%	12.06	0.07%
Coking	16.71	0.13%	15.44	0.11%	25.37	0.15%
Steel	180.95	1.42%	152.39	1.05%	158.48	0.95%
Cement	73.22	0.58%	60.78	0.42%	68.59	0.41%
Plate Glass	7.13	0.06%	6.00	0.04%	5.00	0.03%
Polycrystalline Silicon*	7.82	0.06%	9.74	0.07%	11.32	0.07%
Electrolytic Aluminium	37.92	0.30%	58.63	0.40%	114.59	0.68%
Shipbuilding	20.88	0.16%	2.22	0.02%	1.93	0.01%
Subtotal	505.37	3.98%	503.99	3.47%	652.82	3.90%

*Note: For details of the Targeting Industries, please refer to the CBRC's Notice on Implementation of Key Assessment Indicators for Green Credit (YJBF [2014] No.186). The data of those marked with * were defined by Industrial Bank.

Source: the 2018 Annual Sustainability Report of Industrial Bank Co., Ltd.

PICC Property and Casualty Company Limited

Since the 18th National Congress of the Communist Party of China, building an ecological civilization and pursuing green development has been elevated by the central government as its national strategy, with promoting green finance as a major part of the plan. Corporate environmental information disclosure is the key to laying a solid foundation for green finance development, including green insurance.

PICC Property and Casualty Company Limited (PICC P&C), a large state-owned property insurance company, boasts a vast business scale and strong overall strengths with a long history. With measures to implement the green development concept, lead prospective studies on green insurance, design various green insurance products as well as a diversified business model, PICC P&C is committed to promoting ecological civilization with green insurance and contributing to the Beautiful China Initiative, in which ecological conservation is put in a prominent place. After joined the Task Force of the Pilot Programme of UK-China Climate and Climate and Environmental Information Disclosure in 2019, the company has been exploring ways to press ahead with environmental information disclosure.

Objectives and plans for climate and environmental information disclosure

PICC P&C will continue to prepare and publish reports on environment-related information. In the meantime, it will also study and draw on the practice of climate and environmental information disclosure by its global counterparts. To establish the basis for future environmental information disclosure, it will reinforce the analysis of and research on environmental impacts on corporate operation and management. PICC P&C stands ready to work with all stakeholders to advance the pilot programme of climate and environmental information disclosure, in an effort to provide practical experience and reference for more domestic and international insurers in the future.

Climate and Environmental Information Disclosure in 2019

1. Overall environmental objectives, strategies and governance structures

PICC P&C upheld the concept of green, low-carbon, circular and sustainable development, while giving full play to the advantages of the insurance industry. The company practiced green operation, engaged in green public welfare undertakings, developed green finance, and actively implemented the national plan to build a green finance system.

In 2018, a steering group on green insurance, headed by the president of PICC P&C, was formed. It was supported by an administrative office responsible for the day-to-day coordination and planning as well as a working group composed of representatives from relevant departments. Guidance documents were released to speed up the development and innovation of its green insurance business and catalogues of green insurance products were compiled in a systematic way. Meanwhile, to practice green insurance, it carried out green insurance activities by overseeing the establishment of steering groups in its subsidiaries, setting up green insurance product innovation laboratories and business organisations in various regions, especially in the green finance reform and innovation pilot zones.

2. Environmental risk management

(1) Social responsibility report. Starting from 2016, PICC P&C has been compiling corporate social responsibility reports and disclosing environment-related information from the perspective of energy conservation, environmental protection and green development in accordance with the Environmental, Social and Governance (ESG) Reporting Guide of HKEX and standards of the Global Reporting Initiative (GRI), etc.

(2) Climate change-related catastrophic risk management. With the catastrophic model, PICC P&C conducted a statistical calculation of the insurance risk accumulation in all regions across China, and it managed to spread the risks by regional dispersion and reinsurance arrangements.

(3) Environmental risk management. PICC P&C collaborated with the School of Environment, Tsinghua University and released the Report on the Environmental Risks of Chinese Enterprises: From the Perspective of Environmental Pollution Liability Insurance in 2015 and 2018. It was the first time that a Chinese insurance institution had utilised insurance data to issue corporate environmental risk reports and analyse the risks facing by Chinese enterprises. The company helps enterprises to enhance their risk management capabilities and provide governments with decision-making basis in environmental governance.

(4) Green operation. PICC P&C conserved resources and reduced pollutants through establishing a management system for energy efficiency, water conservation and solid waste classification. It advocated paperless offices and promoted e-office platform. It was committed to optimising green supply chain management to minimise energy consumption and environmental footprints from logistics and operation.

(5) Green investment. Through green bonds, debt plans, green projects equity investment plans, private equity and other forms, the company continuously made investments in environmental governance, infrastructure construction, wind power, hydropower and other clean energies.

3. Green finance research and innovation

(1) Solidify the foundation of green development with basic research. As a standing council member of the Green Finance Committee, China Society for Finance and Banking (GFC), PICC P&C has stayed at the forefront of the industry in forward-looking research on green insurance. In 2018, PICC P&C 1) completed research projects "Green Finance for Building Energy Efficiency and Green Building Development" led by the Ministry of Housing and Urban-Rural Development as well as the mechanism of insurance supporting green building development part of "Mechanism and Policy Research on the Insurance Sector in Supporting Green Finance Development in Beijing", a Global Environment Facility (GEF) project approved by the Beijing Municipal Commission of Housing and Urban-Rural Development; 2) wrote green insurance sections in Green Finance Terminology Guide and China Green Finance Development Report led by PBoC and GFC; 3) completed a research report on green insurance at the commissioning of the China Banking and Securities Commission; 4) established the Joint Lab for Environmental Insurance and Risk Research with the Tsinghua University Research Institute for Environmental Innovation (Suzhou); and 5) established the Center for Renewable Energy Risk and Insurance Research with China General Certification Center. Through a large amount of in-depth research, PICC P&C has solidified the foundation of its green insurance theory, product R&D and business model development.

(2) Explore innovative mechanisms of green development. PICC P&C has put in place a comprehensive green insurance product lineup and a diversified green insurance business model geared to promoting pollution control, protecting green resources and the ecological environment, safeguarding the development of green industries, strengthening climate resilience, and encouraging pro-environmental behaviour.

PICC P&C has pioneered in environmental risk governance innovation and introduced multiple innovative environmental pollution liability insurance models: 1) the "Wuxi Model" features environmental risk evaluation and hazard identification services for insured enterprises; 2) the "Huzhou Model" integrates "insurance + service + supervision + credit" with a view to strengthening information sharing, mechanism linkage and combination of reward and punishment; and 3) the "Quzhou Model" of safety and environmental insurance provides insured enterprises with comprehensive coverage and risk control services against environmental pollution and work safety risks. PICC P&C has provided support for the protection of green resources and the ecological environment by 1) insuring natural forest resources; 2) insuring wildlife resources against liability risk and alleviating the human–wildlife conflict; and 3) improving the linkage mechanism between livestock insurance and bio-safety disposal, and promoting the "Longyou Model" of hog insurance. PICC P&C has given strong support to the development of green industries by 1) providing clean energy equipment and environmental equipment manufacturers with insurance for their first piece (set) of crucial high-tech equipment; 2) piloting the first green building performance insurance in Chaoyang District, Beijing and the first ultra-low-energy building performance insurance in Qingdao; 3) providing surety bond for the wind power industry against quality risk and the

PV industry against quality and power risk; and 4) exploring NEV insurance. PICC P&C also introduced catastrophic insurance in cooperation with governments in regions such as Shenzhen, Ningbo and Guangdong to increase regional preapredness for climate change-related catastrophes. In order to encourage pro-environmental behaviors, PICC P&C piloted the "innovative drug replacement liability insurance" in Huadu District, Guangzhou in an effort to explore a market mechanism of recovering expired drugs.

In addition, PICC P&C has provided inclusive finance support for the green industries by improving its funding business system with a special marking of green industry projects for direct funding support, representing a pioneering business innovation in the insurance industry.

4. Quantitative environmental indicators

Figure 1: PICC P&C's environmental pollution liability insurance business

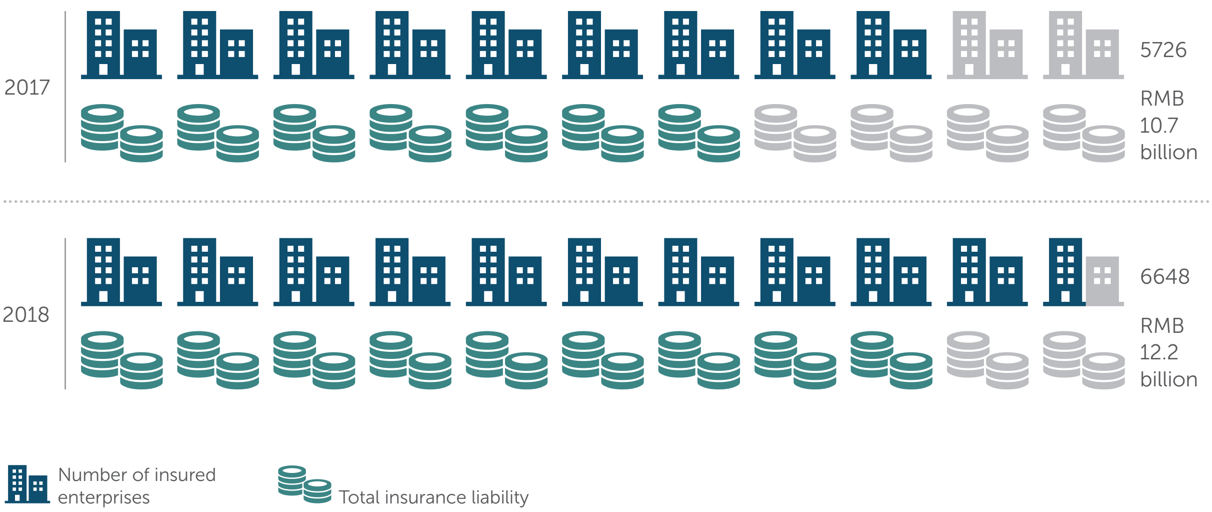


Table 1: Energy conservation targets of the head office of PICC P&C for the 13th Five-Year Plan period

Five-Year Plan period					
Energy Efficiency Targets of Head Office	**2016**	**2017**	**2018**	**2019**	**2020**
Total energy consumption (tonnes of standard coal)	**4008**	3810	3858	3908	3958
Energy consumption per RMB10,000 of output value (tonnes of standard coal/RMB10,000)	**11.3%**	2.4%	2.4%	2.4%	2.4%

Table 2: Electricity and natural gas consumption and greenhouse gas emissions of the headquarters building of PICC P&C (Beijing)

Electricity and natural gas consumption and greenhouse gas emissions of the headquarters building of PICC P&C (Beijing)			
	2016	2017	2018
Total electricity consumption (kWh)	541649	5765499	5128340
Total natural gas consumption (m^3)	61289	49158	63036
Electricity consumption per person (kWh)	4448.50	4898.47	4231.30
Natural gas consumption per person (m^3)	27.9	22.86	23.47
Greenhouse gas emissions from natural gas (tCO_2e)	134	107.5	137.8
Greenhouse gas emissions from electricity (tCO_2e)	3338.25	3517.53	3128.8
Greenhouse gas (tCO_2e)	3472.24	3625	3266.61
Greenhouse gas emissions intensity (tCO_2e)	2.78	3.04	2.63

Note:

1. Total natural gas consumption includes the consumption by tendants in the building (natural gas per person for 2018 calculated on a base of 2,686 persons with regular work at the building); PICC P&C's total electricity consumption refers to electricity consumption by all equipment in its headquarters building other than those areas leased to tenants (Electricity per person for 2018 calculated on a base of 1,212 permanent employees at the building);
2. PICC P&C's average electricity consumption per person for 2017 was amended as 4,898.5 kWh;
3. Greenhouse gas emissions calculated in accordance with the NDRC Greenhouse Gas Emissions Calculation Methodology and Reporting Guideline for Public Building Operators (Enterrpises) (For Trial Implementation) and the coefficients released by IPCC in 2006, with the greenhouse gases covered including CO2, CH4 and N2O.
4. The average emission factor of the national grid for 2015 (0.6101tCO2) is adopted as the electricity emission factor. Source: http://www.ndrc.gov.cn/zcfb/zcfbtz/201712/t20171215_870543.html

Table 3: Water consumption of the headquarters building of PICC P&C (Beijing)

Water consumption of the headquarters building of PICC P&C (Beijing)			
	2016	2017	2018
Tap water consumption (tonne)	39762	21288	**22371**
Water consumption per person (tonne/person)	18.1	9.9	**8.33**
Reclaimed watrer/recycled water (tonne)		9836	**20306**

Note:

Including water consumption in areas of the building leased to tenants (calculated on a base of 2,686 persons with regular work at the building)

Figure 2: Electronic business operations of PICC P&C

Launched by 34 subsidiaries on telephone/online sales platforms

Commercial vehicle insurance e-policy

More than 560 varieties actually used nationwide

Commercial non-vehicle insurance e-policy

E-policy issuance in 2016-2018			
	2016	2017	2018
Number of e-policies issued	189.7	1405.1	**3801.1**

Note:

Calculated as the sum of the number of downloads via the company's elife e-policy system and the number of policies generated by its electronic document management system, i.e. 1897443 (1866791+30652) for 2016, 14050866 (3040974+11009892) for 2017, and 38011097 (4683966+33327131) for 2018.

Value-added tax invoice issuance in 2017-2018		
	2017	2018
Number of invoices issued across channels (10,000)	1251.4	**1816.7**

Ping An Insurance (Group) Company of China

Ping An Insurance (Group) Company of China, Ltd. ("Ping An" or "the Group") is a world-leading financial services group committed to advancing business transformation towards sustainability. Under the leadership of its Board of Directors and Senior Management, the Group has proactively responded to evolving risks and opportunities of climate change for its insurance and investment businesses based on comprehensive assessment of the implications of climate change in order to achieve long-term stable growth and value creation. As of the end of 2018, the Group had RMB 818 billion in insurance policies held; as an asset owner, it had RMB 7,143 billion in holding assets; and as an asset manager, it had approximately RMB 2,795 billion in assets under management.

The Group joined the UK-China Climate and Environmental Information Disclosure Pilot Programme in April 2019 in response to the call of the G20's Financial Stability Board (FSB). The group has since proactively attended its various meetings and absorbed advanced practices and experience of other participants. Ping An issues its first TCFD report in November 2019 to detail its climate change governance and strategies, analyse significant risks and opportunities of climate change for its business, and set forth relevant targets. As the first asset owner in China to sign the United Nations Principles for Responsible Investment (UNPRI), Ping An will avail itself of the opportunity of developing a rigorous responsible investment system. It will build itself into a benchmark of responsible investment in China's financial and insurance sectors and an exemplary sustainable enterprise in China and in the world at large by continuously enhancing and refining its sustainable business model.

Objectives and plans for climate and environmental information disclosure

Ping An has always included environmental factors in its development plans and has been committed to promoting the low-carbon economy and society, thus becoming a green finance benchmark.

The Group has established an overall strategic plan of climate change response and the corresponding risk management methods. In light of the requirements of TCFD framework, the Group has selected a number of indicators of climate change-related risks and opportunities, including low-carbon potential, greenhouse gas emissions, low-carbon target, risk evaluation process, and climate resolution. Besides its first TCFD report, the Group discloses relevant information through other channels including its sustainability reports and annual reports, which are publicly available on its official website. Looking forward, the Group will not only continue to make disclosures of wider quantitative data within the TCFD framework, but also establish intelligent digital information disclosure processes, drawing upon its AI-ESG platform of environmental information collection and data analysis.

Climate and Environmental Information Disclosure in 2019

1. Overall environmental objectives, strategies and governance structures

Ping An is committed to achieving sustainable business growth. By formulating a sustainable business strategy geared to reducing all kinds of risks and capturing opportunities of low-carbon development, it strives to achieve win-win cooperation with stakeholders. The Group's member companies in insurance, banking, investment and other sectors have effectively implemented its relevant green finance strategies including Sustainable Insurance Policy of Ping An Group, Responsible Investment Policy of Ping An Group, and Policy of Ping An Group for Low-Carbon Related Industries.

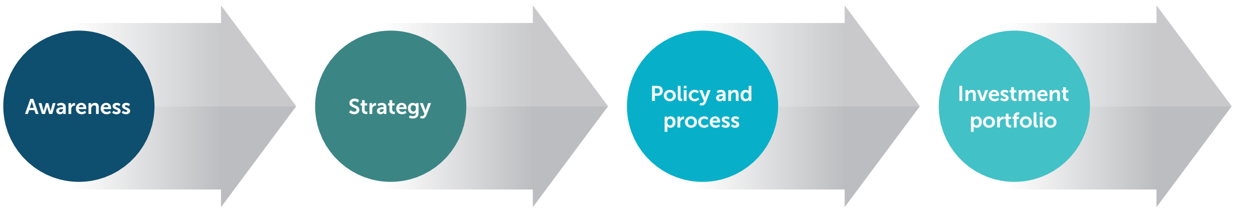
1.1 Goals and strategies

1.1.1 The group's sustainable insurance strategy

Ping An endeavours to embed ESG concepts into its insurance business. On the one hand, from the perspectives of insurance product pricing and underwriting risk management, Ping An fully considers climate change and social factors in the life cycle of insurance products in order to achieve effective risk pricing and manage impacts. On the other hand, it is committed to developing a commercially successful system of sustainable insurance products that can achieve social and economic benefits at the same time.

1.1.2 The group's responsible investment strategy

As a responsible investment company, Ping An hopes to bring positive environmental and social values with every investment decision. Meanwhile, Ping An believes that responsible investment can effectively avoid risks, achieve stable and long-term returns, and ultimately realise the unity of economic, social and environmental benefits. Therefore, Ping An has proactively incorporated ESG factors into its investment decision-making process in four steps.



- Board of Directors
- Chief Information Officer
- Business Line

- Position and commitment
- Management structure

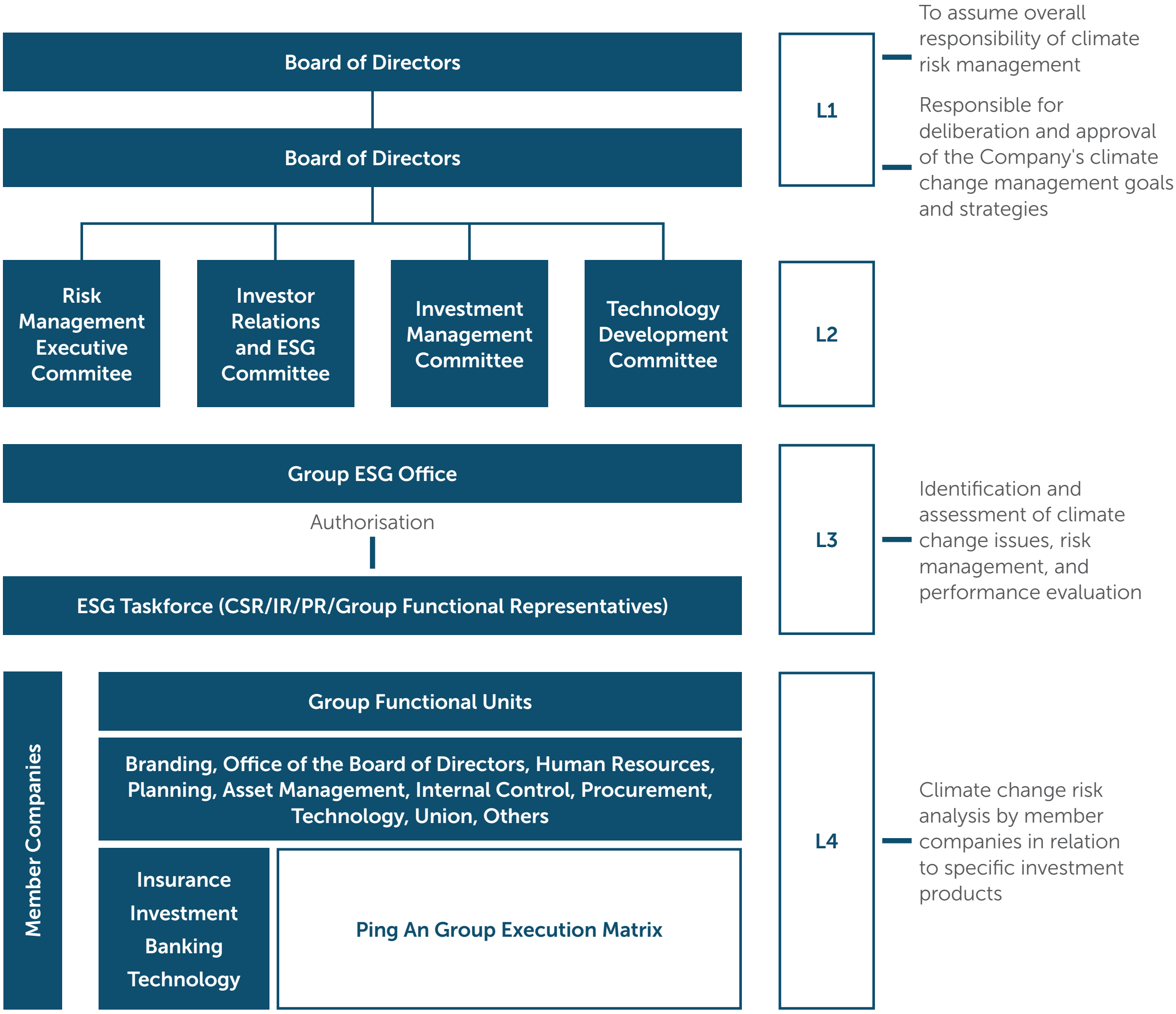
- Policies and principles
- Systems and responsibilities

- Integration
- Products
- Reports

1.2 Governance structure

Ping An is deeply aware of the impact of climate change on its business. It has adopted a unified ESG management structure which clearly defines the responsibilities of the Board of Directors and Senior Management in relation to the supervision and management of ESG-related risks and opportunities.

The Company's environmental, social and governance (ESG) structure



2. Environmental risk management

Ping An has always regarded risk management as an integral part of its operations and business activities. It has taken steady steps to build a risk management system aligned with its strategies and the nature of its business. On this basis, Ping An continuously optimises its risk management framework and standardises its risk management procedures to identify, evaluate, and mitigate risks. Keeping risks under control, it promotes sustainable business growth.

2.1 Collaborative management of environmental risks

The Group ESG Office and other relevant functional centres of the Group have worked together to put in place a well-defined pool of ESG-related risks of the Group by drawing upon domestic and international ESG studies in light of its own conditions. The pool is used as the foundation of ESG-related risk management of the Group's investment and insurance businesses and serves as a guide for member companies in ESG integration, product development, product design, and preparation of work reports.

Pool of ESG-related Risks of the Group			
Group Risk Control Centre	Group Asset Management Centre	Actuarial Office of Group Planning Centre	Group ESG Office
Business Lines			
Investment		Insurance	
Business Units			
Matrix of Investment ESG Risks and Opportunities		ESG Risk Map of Insurance Products	
Applications			
Integration	Products	Reports	

2.2 Investment risk management

In terms of investment risk management, under the supervision and guidance of the ESG Committee, the Group's ESG Office and Asset Management Centre, together with the major businesses investment team have established a responsible investment panel. It provides support and guidance on strategy formulation and investment application for different investment businesses across the Group. The Group has gradually integrated ESG risks into its investment risk management system. It subdivides environmental (including climate change) and social risks into two-level thematic risk categories and sets forth the corresponding risk definitions and criteria. In addition, the ESG Office organises seminars with subsidiaries on a regular basis to help them understand the basic elements of ESG and share industry best practices. The office brings about continuous advancement and effective guidance for implementing ESG strategies and project planning.

2.3 Insurance risk management

Ping An makes sure that all member companies implement a comprehensive management plan of insurance risks, keep improving their capacity of insurance risk prevention and operating performance, and maintain business stability and continuity. It has put in place an effective insurance risk management system to manage the risk of adverse deviation of the actual mortality rate, morbidity rate, loss ratio, expense ratio, and surrender rate from expectations, which result from factors such as climate change, change in natural environmental conditions, demographic structure and health trends and those may cause losses to the Group. In accordance with the system, all the insurance subsidiaries of the Group have established insurance risk management procedures (all relevant links including product development, underwriting, claims, product management, reserve evaluation, and reinsurance management) for all insurance products including ESG products. Meanwhile, the subsidiaries have implemented specific ESG-related risk management measures regarding various links of directly or indirectly related products in light of their business characteristics and different ESG exposures.

2.4 Climate change risk management

Climate change presents risks and opportunities, encouraging Ping An to transform the sustainability strategy and incorporating climate change mitigation measures into the daily operations and long-term strategies. While developing business opportunities such as sustainable insurance and responsible investment, climate change also brings risks to Ping An. As such, Ping An has developed a risk identification framework concerning climate-related transition and physical risks. The result will be used for insurance and investment screening. Assets that fail the investment screening will be excluded to reduce risks associated with climate change to Ping An.

Transition Risk

Transition risks have profound influence on long-term investment. Factors such as changes in policies and laws, technological improvements or innovations and expectations of the market for investment institutions under the low-carbon economy transition trend will affect return of investment business in the long run. We are fully aware of the potential impact of transition risks. Ping An Life was selected as a pilot to conduct a transition risk assessment for its investment business, and the evaluation coverage will be gradually extended.

Result of Transition Risks Analysis

The investment categories of Ping An Life are mapped in matrix consists of three levels of climate-related policy risks and climate-related policy opportunities. The results are as follows:

Risk Classification of Six Major Industries (By Investment Amount)

12.2%

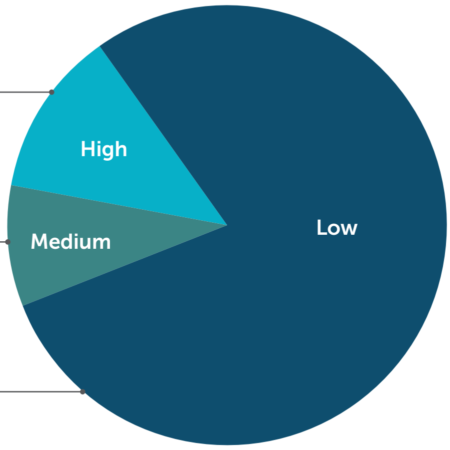
Including Building Construction and Power Generation

8.7%

Including Real Estate

79.1%

Including Transportation (mainly railway transport), Banks, and Nonbank Financial Services



Risk Classification of Six Major Industries (By Investment Amount)

22.4%

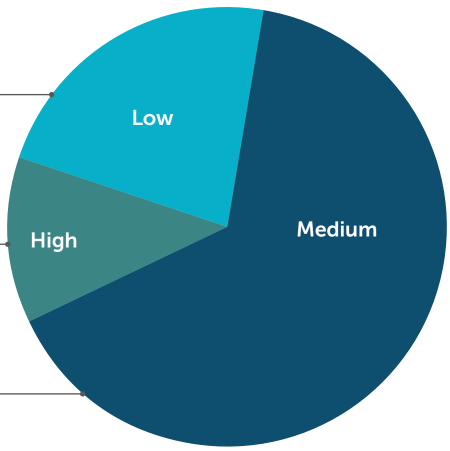
Including Transportation (mainly railway transport)

12.2%

Including Building Construction and Power Generation

65.4%

Including Real Estate, Banks, and Non-bank Financial Services



Regarding Ping An Life's current investment portfolio, more than 51% of the investment is allocated to the financial sector, including banking, securities and diversified financial services, which facing lower climate risks than those of other non-financial industries in public policy aspect. Financial sector, driven by policies, is being provided more opportunities on green finance and new investment opportunities while facing climate risks. On the other hand, utilities, real estate and building construction sectors are involving in higher climate policy risks, owing to nationwide carbon emissions trading scheme regulating carbon emissions in eight target industries. The trading scheme will put pressure on the operating expenses of the invested companies in the medium term (2030) and long-term (2050).

Power generation industry may bear the brunt of policy risks. The Chinese government is gradually tightening the requirements of coal-fired power plant operational efficiency and promoting "coal-to-gas" policy planning. Meanwhile, under the 2DS and B2DS scenarios, governments are also likely to further limit corporates' carbon footprint. Therefore, coalfired power plants may need to phase out generation equipment earlier than its planned useful life, leading to an increase in capital expenditures. The Paris Agreement proposed the target of keeping a global temperature rise this century well below 2°C. Countries are working towards the target through public policy and technology. Ping An understands the importance and urgency of achieving this target. Apart from using investment as a tool to encourage decarbonisation in various industries, Ping An also analyses the gap against the 2°C scenario. Power generation is one of the most carbon intensive industries among Ping An's investment portfolio. Different power generation corporates may have different carbon emission pathway based on technology, asset and business strategy, resulting in different level of transition risks.

Ping An analyses Ping An Life's investment in power generation industry against the 2°C scenario using the PACTA tool. The PACTA tool is dedicated to determining the gap between industrial trend of the three carbon-intensive industries in investment portfolio and IEA's 2°C Scenario over the next five years. This year Ping An focused on investment in power generation industry in the open market (comprising of about 53% of the total power generation investment in Ping An's Life), and integrated the results into review work of Ping An's investment strategy to optimise future investment decision-making.

In addition to ongoing climate risks analysis, the Group continues to revise the investment restriction of fossil fuel and related industry to minimise the portfolio risk. For example, Ping An utilises different means such as in-depth research and continued policy development on responsible investment and low-carbon investment, adjust the investment portfolio by resource allocation. Ping An strives to move forward to the global goal of keeping temperature increase below 2°C. At the same time, Ping An is also committed to encouraging investee companies and insurance clients to manage and disclose relevant climate-related financial information. Ping An is planning to participate Climate Action 100+ to actively communicate the need for greater disclosure around climate risk to investee companies.

Ping An will collaborate with top universities to establish Ping An's own Climate VaR and scenario analysis tool, which will highly applicable in Chinese market.

Physcial risk

In these years, extreme weather events occur more frequently and poses increasing climate risks to the underwritten assets. Extreme weather events pose a higher potential risk to claims and liabilities of the insurance business. Insurance institutions usually ignore this type of risks, which may cause serious consequences to compensation. Ping An attaches due importance to minimise physical risks under our sustainable transition strategy.

To manage risks using technologies, Ping An Property & Casualty conducts climate risk assessment focusing on extreme weather events such as typhoon, heavy rain, flood and so on by adopting a variety of advanced technologies, including satellite remote sensing, drone, Internet of Things, LBS positioning. The technologies build a robust base for sound risk assessment and management to prevent property owners from suffering financial losses. Furthermore, Ping An internally developed DRS, a system for physical risk identification, analysis and management.

Applying its disaster warning and control system, Ping An Property & Casualty has arranged flood risk investigations for over 5,000 underwritten enterprises and provided risk surveillance and on-site management services for over 400 focused construction projects in 2018. For instance, before Typhoon Mangkhut landed, Ping An Property & Casualty swiftly used DRS to identify over 8,000 customers in the landing area, issued over 13,000 disaster warning SMS messages, provided free disaster and loss prevention materials, and conducted on-site risk investigations for around 400 enterprises and construction projects. During this period, our typhoon and flood prevention guideline, issued on WeChat, was viewed more than 27,000 times. Our actions provided strong support for our client to reduce their losses from the typhoon. By incorporating climate risk factors into pricing process, Ping An comprehensively considers the impact of climate change on client's assets and insurance claims based on the historical data and analysis of DRS.

3. Green finance research and innovation

In line with the United Nations Principles for Responsible Investment (UNPRI) and relevant guidelines of domestic regulators (Green Credit Guidelines of the former China Banking Regulatory Commission, Green Investment Guidelines of the Asset Management Association of China, Green Bond Guidelines of the National Development and Reform Commission, and so on), Ping An has introduced innovative practices in different aspects including organisational structure and policy (see Governance structure sector for details), responsible investment policy management and product applications, which have advanced ESG investment integration and development at Ping An.

3.1 Innovation in responsible investment management

In positive response to the call of national regulators and in light of international best practices and UNPRI recommendations, Ping An has integrated responsible investment into various investment activities.

Asset Class / Strategy	Equity Class	Fixed Income Class	Other Equity Assets
Exclusion	√	√	√
ESG integration	√	√	√
Active ownership			√
Norm-based screening	√	√	√
Positive screening	√	√	√
Sustainability-themed investing	√	√	√
Impact/community investing			√

3.2 Innovation in product applications

In respect of investment products, Ping An has preliminarily put in place a Group-level system of ESG investment products within the framework of ESG investment strategies, as shown below:

30 June 2019					
(In RMB 1 million)	Equities	Bonds	Financial Products	Mutual Funds	Lease Receivables
Green investment(1)	13,578	14,263	10,191	262	508
Social and inclusive investment(2)	25,031	554,198	495,485	1,378	120,328

Notes:

(1) Responsible investments refer to green and social and inclusive financial products. Green investment includes projects recommended by the Guidelines of the National Development and Reform Commission (NDRC) for Green Bonds and the Guidelines of the Asset Management Association of China (AMAC) for Green Investment.

(2) Social and inclusive investment includes infrastructure, small and micro-business support, old-age care and health care, education and culture, poverty alleviation for agriculture, farmers and rural areas, shanty area reconstruction and so on.

(3) The investment data covers all financial products of the Group as a fund provider and product issuer.

4. Quantitative environmental indicators

In 2018, the total greenhouse gas emissions of Ping An were 197,904 tCO2e.

At this stage, Ping An has developed the following targets in relation to climate change:

- Operational emissions carbon intensity targets: Using 2018 as the base year, to reduce by 5% by 2020, 10% by 2025 and ultimately 20% by 2030;
- Paper use intensity: Using 2016 as the base year, to reduce by 50% within three years, 60% within five years, and 80% within ten years;
- Carbon emission reduction potential: Using 2016 as the base year, to increase by 60% within three years and 80% within five years, and eventually achieve regular electronic operations.
- Green building: Ping An pledges that all new buildings of Ping An Group will reach China's Green Building Label (2-star) or equivalent LEED certification. Ping An will renovate its existing headquarters buildings and obtain green building certificates for them by 2020.

Credits

Contributors:
AVIC Trust
Aviva
Bank of Huzhou
Bank of Jiangsu
Brunel Pension Partnership
China Asset Management Co., Ltd
E Fund Management Co., Ltd
Federated Hermes
HSBC
Industrial and Commercial Bank of China
Industrial Bank Co., Ltd.
PICC Property and Casualty Company Limited
Ping An Insurance (Group) Company of China
Principles for Responsible Investment

Editor:
Aiwen Zhou, PRI

Design:
Court Three Graphic Design Consultants Ltd

Translator:
Ubica Translation Center Beijing
Beijing JiuDing TianXia Culture Co., Ltd
Aiwen Zhou, PRI