Summary of Carbon reduction target & Climate risk policy

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Summary of Carbon reduction target & Climate risk policy

As a fiduciary manager for Dutch pension funds whose goal is to allow their beneficiaries to rely on a good income upon retirement and enjoy that income in a sustainable world, all our investment processes are geared towards ensuring they can deliver on this objective. Our fully integrated Responsible Investment Approach encompasses a comprehensive approach towards making a material positive social, economic and environmental contribution in the real economy by investing responsibly for the long-term.

The specific and varying characteristics of the diversified portfolio of assets we invest in on behalf of our clients require a clear overarching as well as customized approach to integrating responsible investing objectives per asset class. Thereby we can ensure that they all contribute to the fullest extent possible to the overall objective of the Responsible Investment Approach.

This document describes the APG AM Approach to carbon footprint reduction & climate risk and how it is implemented, applied[1] and maintained.

The consequences of climate change are becoming increasingly visible. APG AM belongs to a select group of asset managers which are recognized as leading in addressing climate change, including the identification of climate risks and opportunities and the potential impact on investments.

APG AM has been reporting on climate risks and opportunities for years, in line with the recommendations of the Task force on Climate-related Financial Disclosures (TCFD). In 2020 APG AM was recognized by the Leaders group of the Principles for Responsible Investment.[2] By including APG AM in its 2020 Leaders' Group, PRI specifically acknowledges APG AM's excellent disclosure and advanced efforts in climate reporting.

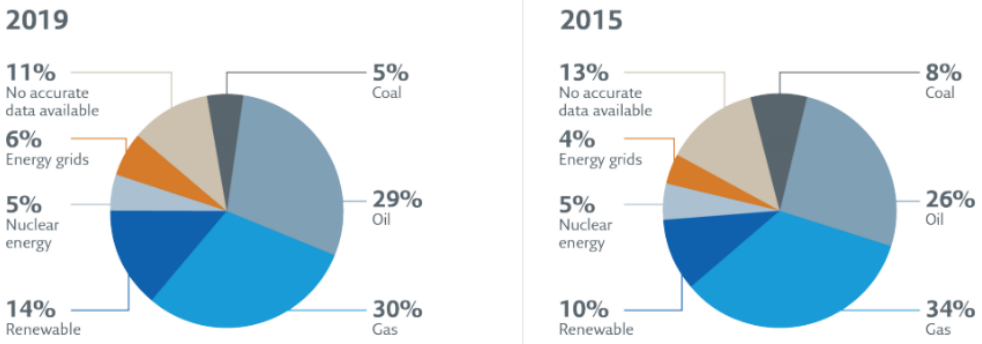
In 2020, APG AM was awarded an A rating and ranked fourth in the world's 75 largest asset managers by the Asset Owners Disclosure Project.[3] ShareAction/AODP is a social organization that assesses institutional investors on the approach they take to responsible investment, with a focus on climate change, human rights and biodiversity. The A rating was the highest assessment in 2020.

APG AM invests all over the world and is taking concrete measures to make the portfolio climate-proof, such as:

- When making investment choices, we take into account the threat to business models of companies as a result of climate change.
- We are engaging with companies about their strategy for the transition to a carbon-neutral economy.
- We are reducing the carbon emissions of our equity portfolio in line with the reduction targets set by of our pension fund clients, and are broadening the carbon assessment to other asset classes. In 2022 our clients will make new commitments under the Dutch Climate Agreement.

[1] We aim to apply the APG AM Climate Risk Policy progressively to all assets under management, methodological approaches permitting.
[2] https://www.unpri.org/download?ac=11708
[3] Asset Owners Disclosure Project (aodproject.net)

Division of energy investments (in %)



Explanation: When calculating the energy mix, we assign part of a company's value to a specific energy source.
The energy mix only relates to energy producers; green bonds or wind turbine producers, for example, are not included.

Carbon Reduction Target

As part of APG AM's commitment to the Climate Commitment of the Dutch Financial Sector, APG AM is committed to disclosing the carbon footprint of all relevant investments. We have been measuring the carbon footprint of our listed equity portfolio since 2013. Carbon footprint measurement has since then been expanded to other asset classes, including real estate, corporate bonds and private equity. We measure the carbon footprint of these asset classes on an annual basis in line with the PCAF method.

APG AM is mapping out how much carbon is emitted by companies we invest in through equities and how much of this is attributable to us (carbon footprint). All pension fund clients have a target for carbon reduction for the listed equity portfolio. This is an absolute emissions reduction target, not a relative intensity target, and implemented by allocating annually decreasing carbon budgets to investment strategies, which ensures effective integration into the investment decision-making process. Carbon footprint data is calculated on a daily basis for the purpose of carbon footprint reduction in equities and fully integrated into key portfolio management systems.

Climate Risk Policy

In 2019, APG AM adopted a formal climate risk policy and added climate risk to the risk taxonomy for investments overseen by the APG AM Risk Committee. The policy was approved by the Investment Committee of APG AM and entered into force on 1 January 2020, with the aim to support APG AM in achieving objectives such as:

- Demonstrating a formalized and integral approach of climate-related risks and opportunity management in order to manage, monitor and steer clients' portfolios as such;
- Demonstrating societal responsibility and contributing to commitments made by APG AM and its clients to, amongst others, the Task Force on Climate-related Financial Disclosures (TCFD), the Climate Commitment of the Dutch Financial Sector and the Investor Agenda.

The Climate Risk Policy describes the way in which APG AM defines, measures, manages and reports on climate-related risks and opportunities, both at the overall client portfolio level as well as for specific investment strategies.

It covers the entire investment process on behalf of our clients: From investment beliefs towards evaluation. Climate related considerations are included in the Strategic Asset Allocation, mandating process, portfolio management and in the Annual Mandate Review cycle. The implementation of the climate risk policy is dependent on the availability of tooling and measurements, and hence will evolve continuously.

Methodology and instruments

Measurement in Asset Liability Management (ALM) and Strategic Asset Allocation (SAA):

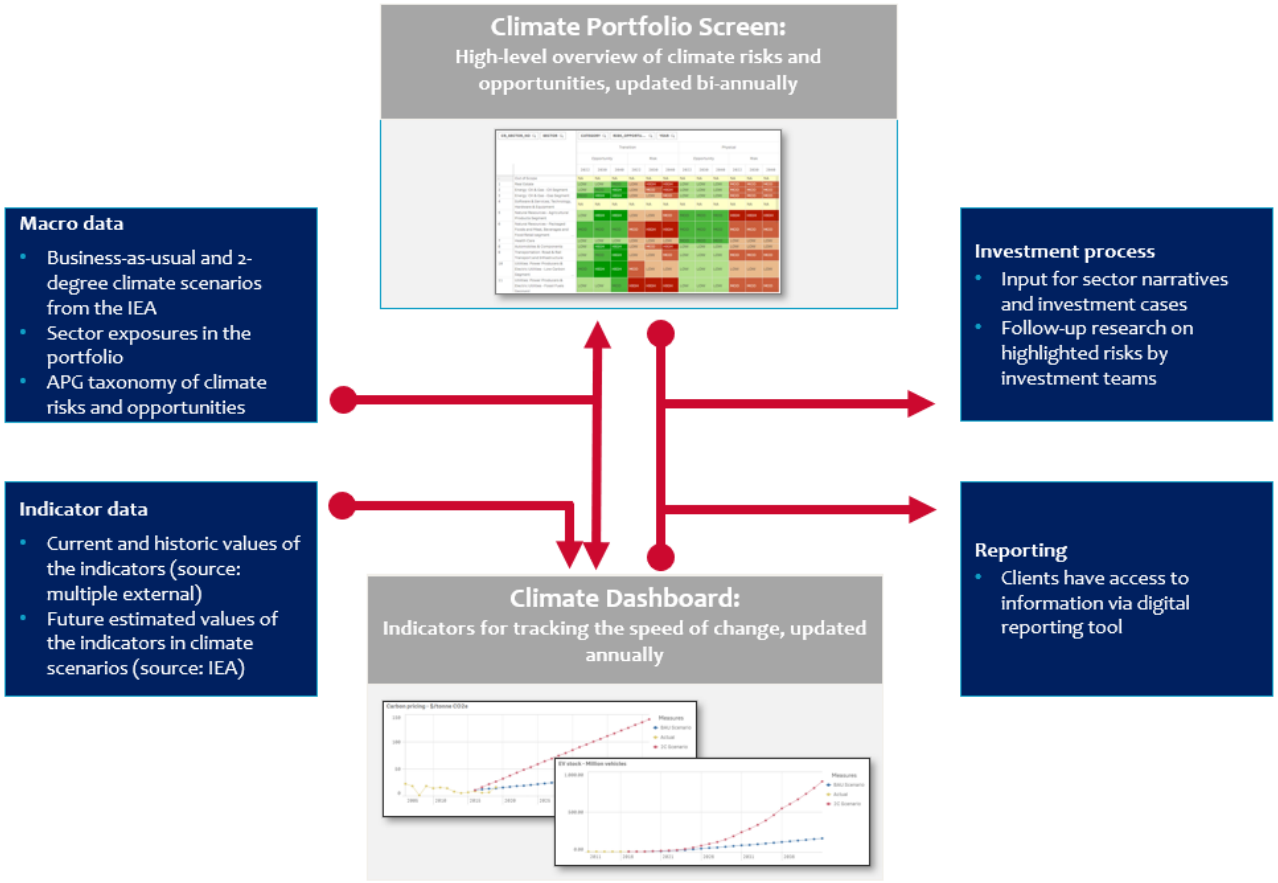
Deterministic climate scenarios are used in the periodic ALM studies performed for our clients with the aim of evaluating the sensitivity of client portfolios for these deterministic scenarios.
Climate stress tests are used to evaluate the potential effects and implications for the Strategic Asset Allocation. Due to the multi-faceted and non-linear characteristics of climate risks, we do not use a quantitative modelling approach. Instead, we use analogies based on situations in the past featuring physical destruction and heavy government intervention (e.g. natural disasters and wars). These analogous situations give us a rough sense of the range of possible impacts of climate change on asset classes.

Measurement at portfolio level:

- Climate-related risks and opportunities are measured in the portfolio using the Climate Portfolio Screen (CPS). The CPS identifies sector-level climate risks and opportunities against external expert scenarios. We used a business-as-usual scenario (IEA Current Policies Scenario, 3.7°C) and a 2-degree scenario (IEA Sustainable Development Scenario, 2°C), supplemented with specific information from the IEA Energy Technology Perspectives (ETP). We intend to use more disruptive scenarios going forward.
- The results of the climate scenario analysis have been captured in the CPS, which creates insights into the most prominent climate related risks and opportunities in 2022, 2030 and 2040. For each of the economic sectors, in each of the time horizons, the traffic light model depicts both the transition as well as the physical aspect as 'high', 'moderate' or 'low'. This score is determined by the difference in the value of the key climate factor (selected for the specific sector) between the business-as-usual and the 2-degree scenario in the specific time horizon: The larger the difference between those values, the larger the risk or opportunity.
- Vulnerabilities to physical climate impacts and opportunities for contribution to physical climate adaptation are qualitatively assessed into three categories (Low, Medium, High) with no differentiation for future timelines.
- A similar analysis has been done for sovereign bonds at country level. For each country we looked at physical risk (based on the Notre Dame GAIN database) and at transition risks (based on HSBC indicators). This resulted in a low-medium-high risk profiling of the sovereign bonds portfolios.
- Investments in areas with 'high' transition risk within the investment horizon, as indicated by the CPS, call for further investigation into the nature of the risk/opportunity and the potential financial impacts by the investment teams.

The CPS is updated every two years in order to incorporate the latest developments in climate scenarios.

On a more frequent basis, key signpost indicators and the overall speed of the low-carbon transition are tracked through the Climate Dashboard. As such, the Climate Dashboard provides an indication whether the world is leaning more towards a Business-as-Usual or a 2-degrees scenario, and it flags the areas in the portfolio where this may signal more immediate risks or opportunities.



Other related measurements include:

- Measurement of exposure to Sustainable Development Investments (SDI) which includes goals on Clean and Affordable Energy (7) and Climate Change Adaptation (13). Clients have set an ambition related to overall SDI exposure, and one client specifically in relation to SDG 7;
- Ongoing monitoring and annual report to supervisors of fuel source mix of energy-related investments.

Examples of other APG AM climate-related goals and policies

Sustainable Development Investments (SDIs)

We measure investments in products and services that contribute to the UN Sustainable Development Goals (SDGs). We call these Sustainable Development Investments (SDIs). For this purpose, we developed a taxonomy to identify the products and services that contribute to the SDGs. We apply the taxonomy in our portfolio to calculate our holdings in companies, funds and assets providing these products and services. The SDGs include relevant goals such as SDG 7 (Clean and Affordable Energy) and SDG 13 (Climate Action). Several of our clients have established targets at increasing exposure to SDIs or specific sub-goals.

Global Real Estate Sustainability Benchmark (GRESB)

APG AM is a co-founder of the Global Real Estate Sustainability benchmark (GRESB) for Real Estate and Infrastructure, which includes energy efficiency and GHG emissions, and which is integral to our investment approach. In our Real Assets portfolio, we require investments to report against the GRESB benchmark and to improve their measured performance over the years. Any investment proposal that is presented to the APG AM Committee on Investment Proposals (CIP) for approval, includes an ESG sign-off from the RI & Governance team for which any historic GRESB assessments provided by the manager will serve as an important information source. Managers that do not yet participate in the GRESB survey are required to submit responses to an ESG questionnaire based on GRESB requirements during the diligence stage. A standard condition for all new private real estate investments is that the manager commits to participating in annual GRESB surveys during the life of the investment and to achieving an above average GRESB score within three years. In addition to that we would ultimately strive for a score among the 40% highest GRESB scores (4 or 5 star rating). We consider investments with a minimum 4 star GRESB rating a Sustainable Development Investment (SDI) under the SDI Framework. The rationale is that investments that achieve a 4 or 5 star GRESB rating have an above average focus on measuring their ESG performance and have also shown to achieve above average energy savings - thereby contributing to combatting climate change. We review GRESB scores of the entire real estate portfolio on an annual basis. Poor GRESB performance can be a condition for APG AM to initiate an engagement with a company or manager.

Carbon Risk Real Estate Monitor

Transition risks are about the future costs of making a property comply with increasingly strict climate legislation. In 2019, APG AM, in collaboration with others, launched an initiative that enables real estate investors to assess the transition risks per type of building and per country: the Carbon Risk Real Estate Monitor (CRREM).[4] The major investors supporting CRREM established it with the aim to function as a global standard for developing long-term decarbonisation pathways in the real estate sector based on a transparent and scientifically rigorous methodology. CRREM covers 28 countries in Europe, North America and Asia-Pacific across the commercial real estate sector, including retail, offices, and logistics, as well as the residential sector. GRESB, the ESG benchmark for real assets, is integrating the decarbonisation pathways into its range of information resources covering ESG risks in real estate markets. CRREM functions as an important tool for APG AM to measure to what extent the global real

[4] See: Home - CRREM Global. The analysis is carried out by the Institut für Immobilienökonomie (IIÖ) with the support of GRESB.

estate portfolio is aligned with the Paris Agreement and help our clients in setting climate related targets.

Besides the pathways, CRREM also finalized the development of a tool to manage stranding risk for individual buildings. All information required is aligned with the information GRESB collects at the asset level in order to assess and benchmark the performance of real asset portfolios.

With financing from APG and PGGM, the CRREM project is being expanded to include the housing sector and important real estate markets outside the European Union.

Forward looking

In addition to the existing climate-related goals and policies, we are working on defining an approach, and supporting our clients, in steering the total assets under management to align with the goals of the Paris Agreement by 2030 and net zero portfolio by 2050:

- APG AM and its clients have signed the Climate Commitment of the Dutch Financial Sector. As part of this commitment, we will support our clients in setting updated portfolio targets to reflect alignment with the Paris Agreement. In 2022, our clients will announce updated portfolio targets;
- In order to define what it means for a portfolio to be aligned with the Paris Agreement, we have contributed to developing the Net Zero Investment Framework (NZIF). APG AM serves as the Co-Chair of the Paris Aligned Investment Initiative of the IIGCC which has been developing the NZIF.

Governance of the Climate Risk Policy

The roles and responsibilities in relation to managing and controlling climate risks and opportunities are based on the "Three Lines of Defense" model.

The APG AM Climate Risk Policy has been approved by the APG AM Investment Committee (IC). The APG AM Climate Steering Group - which is composed of six Managing Directors (from Global Responsible Investment & Governance, Risk, Portfolio Management (3) and Fiduciary Management) and chaired by the MD Global Responsible Investment & Governance (GRIG) - drafted the APG AM Climate Risk Policy. The Climate Steering Group is responsible for monitoring and ensuring coherence and continued development and oversees the implementation of APG AM's overall approach to climate-related risk management. In addition, the Climate Steering Group identifies, prioritizes and monitors research and development initiatives with respect to climate-related risk management and integration into the investment process.

The Global Responsible Investment (RI) & Governance team (part of portfolio management) is responsible for the development and maintenance of the overall APG AM RI framework at APG AM and acts as the secretariat of the APG AM Climate Steering Group. In this role, the RI team manages the implementation of the policy on a day-to-day basis and coordinates the periodic update and review of the climate risk policy. Initially the policy is reviewed on a yearly basis.

The IC, in its role as acting governing body of this policy, approves all RI related frameworks including the climate policy. In addition, the IC is also overall responsible for the monitoring and managing of the risk and opportunity factors described in the policy over the full investment process and across

the overall client portfolios. The AM Risk Committee will affirm the part of the APG AM climate risk policy related to the risk appetite when this can be explicitly defined and measured.

Portfolio Management (first line) is responsible and accountable for managing ESG risks and opportunities at the asset class level. Any applicable limits set as a result of this policy are managed by them and they report on a regular basis on climate-related risks and opportunities to the IC as governing body. Chief Financial Risk Officer/ Internal Risk Management is responsible for the second line measuring and monitoring of climate risk levels.

Fiduciary Management is responsible for advising clients on their mandates. They monitor and review the implementation of client policies and mandates in the portfolio, including climate risk.

Insight into impact on risk and return

To measure the extent to which E/S characteristics are met, in 2021, APG AM will start to develop methods to assess the likely impacts of sustainability risks on the returns for its financial products and gain further insight into the impact of the various policy instruments, such as inclusion, exclusion and Sustainable Development Investments, on the ability to meet risk and return targets. Our aim is to be able to measure and monitor any impacts on an ongoing basis, initially for liquid investments and extending it to other asset categories at a later stage.

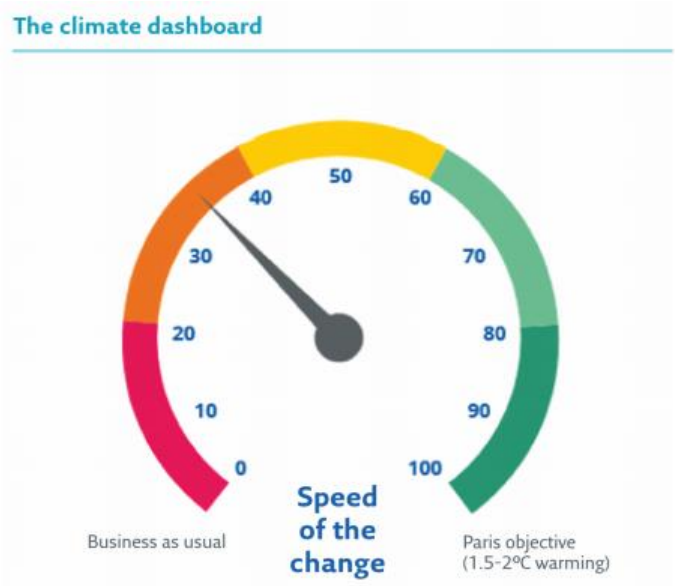
APPENDIX

Addressing climate risks and opportunities

This appendix shows what activities APG AM undertakes to identify and manage climate risks and opportunities. We follow the framework established by the Task Force on Climate-related Financial Disclosures (TCFD)

In this report, climate change and the energy transition are not only discussed in a chapter of their own but are also addressed in various chapters that focus on other themes. This appendix discusses what APG AM did in 2019, but also what we set in motion in previous years. Information about our climate approach can also be found in our report on the Principles for Responsible Investment (PRI).

APG AM has developed a climate dashboard to provide insight into how fast the energy transition is progressing. We are looking at 20 indicators, such as the global demand for fossil fuels and investments in renewable energy. The dashboard gives an indication of the extent to which the world is on track to achieve the Paris target of limiting global warming by 1.5 to 2 degrees. Measurements taken at the end of 2019 show that the speed of transition is still insufficient to achieve this objective.



1. **How have we structured governance around climate-related risks and opportunities?**

On behalf of our pension fund clients, APG AM is responsible for integrating climate change into the investment process. In 2019, APG AM adopted a formal climate risk policy and added climate risks to the risk taxonomy for investments. A climate steering group has been appointed at APG AM, whose task is to coordinate the various initiatives in this area and to set priorities for further research. The steering group consists of members from various parts of the company: portfolio management, risk management and fiduciary management.

2. What are the actual and potential impacts of climate-related risks and opportunities on our business operations, strategy and financial planning?

We classify climate factors that may impact our investments as follows:

Climate factor	Description
Policy & Legislation	The impact of tighter climate policies on companies and investors, e.g. pricing of carbon emissions, incentives for cleaner alternatives, or restrictions on carbon-intensive industries.
Technology, Market & Reputation	Effects of the availability of cleaner alternatives to carbon-intensive production methods or products (e.g. electric cars or energy efficiency). Changes in consumer, business and investor preferences for the products they buy or companies they want to invest in.
Physical Impact	The effects of changing weather patterns, including more frequent and more intense extreme weather (such as floods) and structural changes (e.g. prolonged drought).

Within these three categories we distinguish a total of 44 types of climate risks and opportunities. These factors can adversely affect our investments, such as the declining value of fossil fuel investments. But they can also create new investment opportunities in industries such as renewable energy, electric transport and water management.

In order to identify such climate risks and opportunities for our portfolio, we have used scenario analysis. This technique is suitable because little historical information is available. That is why it is better to work with constructed future scenarios and to examine what would happen to the portfolio if such a scenario were to become reality.

We used two scenarios for the climate analysis. One scenario leads to a warming of 3.7 degrees because governments take too little action and green technologies do not develop fast enough (the so-called 'business-as-usual' scenario). The second scenario describes a world in which governments are serious about meeting the Paris climate targets and the markets are responding to them (the so-called '2-degree scenario'). With these scenarios we have summarized climate risks and opportunities for 26 specific economic sectors. Together, these sectors represent more than half of the value of the investment portfolio. We looked ahead to 2022, 2030 and 2040.

The resulting picture is that the effects of climate change will be huge and all-encompassing by 2040. Leading up to 2040, the transition is gradual for a global and diversified portfolio such as that of APG AM. However, the transition may be accompanied by disruptive changes and unexpected tipping points, which we must keep a close eye on. We are already seeing major transitions in the 2-degree scenario before 2030, with associated risks and opportunities, particularly in the following sectors: power plants, real estate, cement industry, oil and gas, aircraft industry, food and consumer goods, automotive industry, semiconductors and electrical goods, agriculture, chemicals, and construction.

Sectors that are particularly vulnerable to the physical impacts of climate change, but that also have opportunities are: agriculture, forestry, real estate, water plants, oil and gas, food processing, road and rail transport, mining, power plants, healthcare and construction.

In addition to mapping sector effects, we also took climate factors into account in the macro-economic models we use for our strategic investment plan. Using two scenarios ("climate pit" and "good globalization"), we mapped out the possible consequences for growth, inflation and other economic variables.

A follow-up analysis also identified the climate risks for government bonds.[5] This shows that the exposure to countries with a high climate risk (physical and transition risks) is very limited and corresponds to the benchmark exposure.

In addition, APG AM took steps in 2019 to gain a better insight into the physical and transition risks of climate change when investing in real estate. Based on information from multiple data providers, we are developing a database of the physical climate risks of our global real estate investments. In 2019, in collaboration with other parties, APG AM launched an initiative - building on the Carbon Risk Real Estate Monitor (CRREM) - that enables real estate investors to assess the transition risks per type of building and per country.

3. What processes do we use to identify, assess and manage risks associated with climate change?

The results of our climate scenario analysis are documented in a traffic light model, giving us insight into the main climate opportunities and risks in 2022, 2030 and 2040. We repeat this analysis every two years to incorporate the latest developments and insights into the scenarios.

The portfolio managers and sector specialists of the various investment categories are primarily responsible for managing climate-related risks and seizing opportunities, as this is where the specific knowledge is on how climate change may affect investments. As part of their investment analysis and risk management, they pay attention to short, medium and long-term climate risks. The insights from the climate scenarios can point them to areas of attention and priorities for further research. This makes the portfolio managers the so-called first-line function within the risk management framework.

Here are a few examples of how our investors analyze and manage risks and opportunities:

- The portfolio managers actively follow relevant regulatory, technological and market developments.
- APG has not invested in new coal-fired power stations in its infrastructure portfolio for over ten years and will not be doing so in the future. We are asking electricity producers that rely heavily on coal in other portfolios to stop expanding coal-fired power plants and to develop a strategy to switch to sustainable energy.

[5] Approximately 1% of the countries could not be classified by portfolio value. The analysis of government bonds gives a low-medium-high risk per country. This analysis is based on datasets and methodology of ND-GAIN (physical) and HSBC (transition).

- In calculation models, we price financial risks, such as carbon prices and declining coal revenues. For example, our investors closely monitor the cost of battery technology and the relative cost of energy sources (the so-called Levelized Cost of Electricity).
- APG actively engages in dialogue with companies to reduce their carbon emissions. One of the ways we do this is within the Climate Action 100+ partnership.

With the climate scenario analysis, we have taken steps to further integrate climate change into the so-called second-line risk management function. The traffic light model and dashboard with indicators are available for management teams and the risk management department. This second-line function will be further developed in the coming years.

4. What indicators and targets do we use to assess and manage climate-related risks and opportunities?

- We follow a set of 20 indicators to gain insight into the speed of the transition. For example: demand for oil and gas, investments in renewable energy, and number of electric cars.
- We measure the carbon footprint of the equity, corporate bond, private equity and real estate portfolios. For the listed equity portfolio, our pension fund clients have set targets for carbon reduction.
- We measure how much we invest in renewable energy. Our biggest pension fund client, ABP, has a target for investments in renewable energy.
- We measure what sources our energy-related investments use to generate energy (coal, oil, gas, nuclear and renewable).
- We measure how much we invest in companies that contribute to the Sustainable Development Investments (SDIs). Two of our pension fund clients have targets for investments in SDIs.