Responsible Investment Report

2021

Disclaimer
This annual report contains outlooks and other views on future performance and results, which are based on current expectations and assumptions regarding developments and other factors which affect APG. The actual future performance and results may differ materially. This disclaimer fully applies to all future-oriented statements included in this report. The original financial statements were drafted in Dutch. This document is an English translation of the original. In case of any discrepancies between the English and the Dutch text, the latter will prevail.

Preface

“Building a good, sustainable income for today, tomorrow and beyond,” that’s what APG stands for. We are doing this for the 4.8 million participants in our clients’ pension funds. Why? Because we want current and future generations to enjoy their pensions in a sustainable, livable, and inclusive world.

Our investors can make a difference with the assets they manage for our pension fund clients; assets that amounted to €636 billion at the end of 2021. As a responsible, long-term investor, APG exerts influence on the companies and projects in which it invests. If a company is performing poorly – it does not treat people responsibly, respect the environment, or observe good governance – we will only invest if we believe we can encourage it to improve.

We are constantly raising the bar when it comes to evaluating companies. In 2021, in response to our pension fund clients’ growing ambitions, we introduced stricter criteria for companies’ climate efforts, for example. We talk to companies about a wide range of issues, from the climate to biodiversity and from human rights to executive remuneration. And as shareholders, of course, we consistently reflect our views in the way we vote on behalf of our pension fund clients.

In October 2021, ABP decided to stop investing in producers of fossil fuels and started to tighten its policy for sustainable and responsible investment. BpfBOUW, SPW, and PPF APG renewed their responsible investment policies in 2021. Of course, we support our pension fund clients in their sustainability ambitions.

What sustainable impact do pension funds and their asset managers actually have? For APG and our fund clients, it is becoming more important to be transparent about this question. Not only because national and international laws and regulations increasingly demand this, but also because our fund clients, their participants, and society as a whole expect it of us. This is why we are transparent about our approach, the dilemmas we face, and the results we achieve. As is the case in this report.

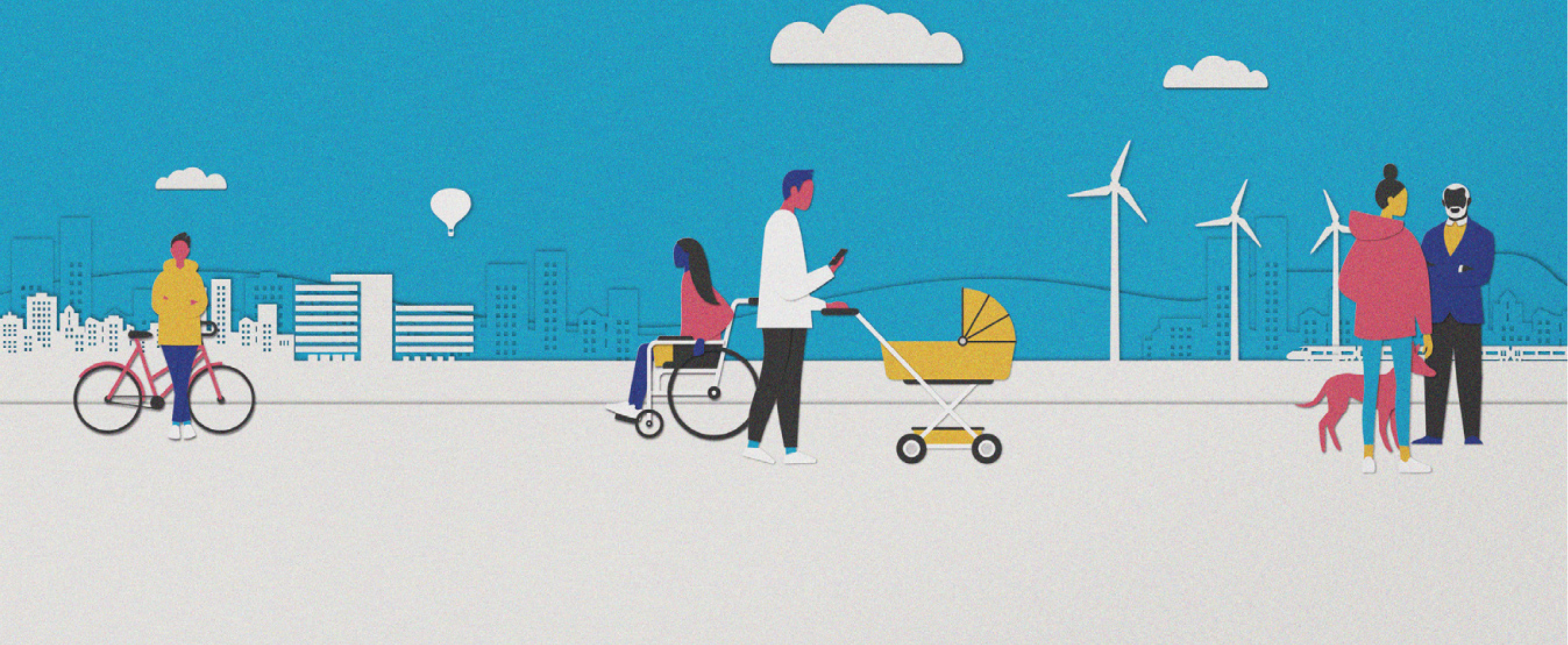
Our fund clients' growing sustainable ambitions, new laws and regulations, the increasing urgency of climate change and biodiversity loss: the challenges are numerous, also for us as asset managers. But we do not shy away from them. APG has all the necessary potential to successfully address these challenges. But we cannot do it alone. Where we can, we cooperate with other like-minded investors and stakeholders. And we share our knowledge.

Like our pension fund clients, we too are developing in the area of responsible investment. We are receiving recognition for this, nationally and internationally. It goes without saying that we are proud of these achievements, but that is not why we do it. We want to "build a good, sustainable income for today, tomorrow and beyond" and we remain committed to this.

July 2022

Annette Mosman, chair of the APG executive board
Ronald Wuijster, member of the APG executive board, responsible for Asset Management

APG: 2021 in figures



Dialogue with companies about sustainability and good governance

Companies APG has spoken with

Number of companies
498

Number of conversations about

Good corporate governance
197

Environment
229

Business ethics*
108

Working conditions
70

Human rights
66

Sustainable financing
67

Other topics
142

* Including bribery and corruption, money laundering, inappropriate promotion of medicines, and the lack of whistle-blowing mechanisms.

Voting at shareholders' meetings

Shareholders' meetings at which we voted

5,280

Remuneration proposals

2,053

For: 52%
Against: 47%
Abstained/did not vote: 1%

Directors' appointments

20,196

For: 77%
Against: 15%
Abstained/did not vote: 8%

Sustainable investments on behalf of our pension fund clients

Investments in the Sustainable Development Goals

2021:
€ 111.9 billion

2020: € 90.9 billion
2019: € 81.2 billion
2018: € 69.2 billion
2017: € 55.3 billion

APG invests in MSA Safety, a leading company in safety equipment for construction, industry and fire services. The company is a leader in the development of digital solutions to improve safety in the workplace.

Investments in labeled bonds

2021:
€ 17.6 billion

2020: € 12.2 billion
2019: € 9.0 billion
2018: € 6.9 billion
2017: € 4.5 billion

In 2021, APG invested in the first green bond issued by the European Union. The issue is part of the major European recovery plan to sustainably strengthen the economies of the member states in the wake of the COVID-19 pandemic.

Decrease in CO_2 footprint of equity portfolio compared to 2015

2021:
-48%

2020: -39%
2019: -37%
2018: -28%
2017: -28%
2016: -16%

SK innovation has announced its intention of becoming a carbon-neutral company by 2050 or earlier. On behalf of the Climate Action 100+ partnership, APG discussed the climate ambitions of this South Korean petrochemical company.

Invested in SDG 7: Affordable and clean energy

2021:
€ 20.8 billion

Include/exclude

Companies on the exclusion list
150

Government bonds on the exclusion list
15

Assessment by Principles for Responsible Investment
A+

Total invested assets

2021:
€ 636 billion

2020: € 573 billion
2019: € 538 billion
2018: € 459 billion
2017: € 470 billion

Who we are and what we do

For APG, pensions are about people. We want to make a difference so that we, our parents, and our children have a good income both now and in the future.

From our offices in Heerlen, Amsterdam, Hong Kong, and New York, and from our satellite locations in Brussels, Shanghai, and Beijing, approximately 3,200 APG employees are committed to serving the 4.8 million people who are accruing or receiving their pension through one of the eight pension funds we work for. For four of these funds, APG manages the assets that have been accrued with the pension contributions of employers and members. These are people who work or have worked for the government or in education (ABP), in the construction industry (bpfBOUW), at a housing association (SPW), and at APG (PPF APG).

The assets we manage have grown thanks to the returns generated on the investments we make on behalf of the funds. By the end of 2021, this figure amounted to €636 billion. This is a hugely responsible role as how we handle these assets determines the pensions of millions of people, today and in the future.

As a pension administrator, we not only focus on financial returns but also on our contribution to society. Solidarity between generations, sustainability, standards and values, diversity, climate, and digitalization are all aspects of this. Ultimately, pensions are essentially about people, about quality of life, and living together in harmony. What use is a good pension if the world is longer fit to live in from either an environmental or social perspective?

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Chapter 1

Our approach

APG invests the “future income” of millions of people in the Netherlands. We want to contribute to a sustainable future for current and future generations. This is why we not only look at risk, return, and cost of each investment, but also at how companies treat people and the environment and whether they are managed responsibly.

Responsible investment and our mission

Our mission is “Building your sustainable future together”. We work with others towards a common goal - to build a sustainable future for pension funds, participants, employers, our own employees, and society as a whole.

We aim to invest to achieve the highest possible return for our pension fund clients within the risk parameters they have set. We take sustainability into account in all investment decisions. We look at issues such as human rights and the impact our investments have on the environment and the climate. On behalf of the pension funds, we also contribute to the Sustainable Development Goals (SDGs) with our investments.

Concrete goals

APG has three responsible investment goals:

- Uphold our corporate responsibility.
- Help to generate solid returns for our pension fund clients’ participants at an acceptable level of risk.
- Promote transparency and proper functioning of financial markets.

Our pension fund clients have concrete, measurable responsible investment goals for 2025. BpfBOUW, SPW, and PPF APG renewed their responsible investment policies in 2021, while ABP had already announced a new policy for the period up to 2025 in 2020 and started its policy in 2021. More on the responsible investment goals of our pension fund clients can be found in the relevant sections of this report.

Investing in the Netherlands

At the request of our pension fund clients, we also created more scope for investments in the Netherlands in 2021. We increased investments in infrastructure (fiber-optic connections in small residential areas and remote regions, wind turbines, and smart heat networks), real estate (hotels, student housing, and outlet centers) projects, and Dutch companies. We also promoted partnerships between private investors and investment institutions (such as InvestNL and Groeifonds).

The size of our assets under management means that we are too big to invest only in the Netherlands. We currently invest approximately 4% of our clients' assets in the Netherlands. On behalf of our fund clients, we had invested almost €1.3 billion in green mortgages from Dutch mortgage provider Vista by the end of 2021. APG is also one of the founders of LIST Amsterdam, a platform for lending to Dutch housing associations.

To support investments by Dutch companies after the COVID-19 crisis, on behalf of ABP, we made €100 million available for subordinated loans in 2021. Companies eligible for these loans are financially healthy but have been weakened by the pandemic. This Post-COVID Growth Finance Initiative is also supported by ABN AMRO, ING, and Rabobank.

Responsible investment choices

For each investment, we look not only at the expected return, risk, and costs but also at how sustainable and responsible it is. Our fund clients want us to invest only in companies that pay sufficient attention to environmental, social and governance (ESG) factors or in companies that we believe we can encourage to improve in these areas. For companies that do not meet our requirements in terms of ESG, engagement (dialogue with a company to encourage them to improve) is a prerequisite for us to be able to invest.

Proposals for new investments (above a certain size) in unlisted companies and projects (such as real estate, infrastructure, and private equity) are assessed not only by the portfolio managers and Risk Management department but also by specialists from APG's responsible investment team. They have an advisory role and are closely involved in drawing up conditions for any new investment.

APG wants to build a sustainable future for current and future generations. As this long-term perspective corresponds with our role as a pension investor, we are in an excellent position to invest responsibly for our pension fund clients.

Compliance with national and international regulations

The way we invest responsibly complies with national and international legislation and regulations:

- The **OECD Guidelines for Multinational Enterprises** are the starting point for our inclusion policy (Chapter 2). This is further implemented through our pension fund clients' participation in the **covenant on International Socially Responsible Investment** (Chapter 5).
- We also expect the companies we invest in to abide by the principles of **the UN Global Compact** in the areas of human and labor rights, the environment, and anti-corruption (Chapter 3).
- We are committed to the obligations arising from the **European Sustainable Finance Disclosure Regulation (SFDR)**. More information is available on our website.
- We comply with the obligations arising from the **Shareholder Rights Directive II** (SRD II) to promote shareholder engagement in European listed companies and the **Dutch Stewardship Code**. More information is available on our website.

Progress made in terms of implementation

The following are some of the areas in which we have made progress:

- determining the impact of responsible investment on risk and return (Chapter 1);
- increasing our investments in companies and projects that contribute to the Sustainable Development Goals (Sustainable Development Investments or SDIs) – and further developing the SDI Asset Owner Platform into a standard for investments in the SDGs (Chapter 4);
- increasing awareness of and promoting respect for human and labor rights in the companies in which we invest (Chapter 5);
- reducing the carbon footprint of our equity investments and refining the method for measuring the carbon footprint of our investments in corporate bonds, real estate, and private equity (Chapter 6); and
- promoting – also in cooperation with other investors – good corporate governance in the companies in which we invest (Chapter 7).

Implementation challenges

There were also challenges. Our pension fund clients have growing sustainability ambitions and want to make progress on them. We are happy to support them in these efforts and want to help them put these ambitions into practice in a thorough, careful manner. Sometimes this can be at the expense of the desired pace of change.

In addition, our fund clients ask us to report on the concrete impact of the engagements we undertake on their behalf. Showing what we actually achieve in the short term and to what extent this can be attributed to our efforts can be challenging. We aim to increase our ability to report on real-world impact.

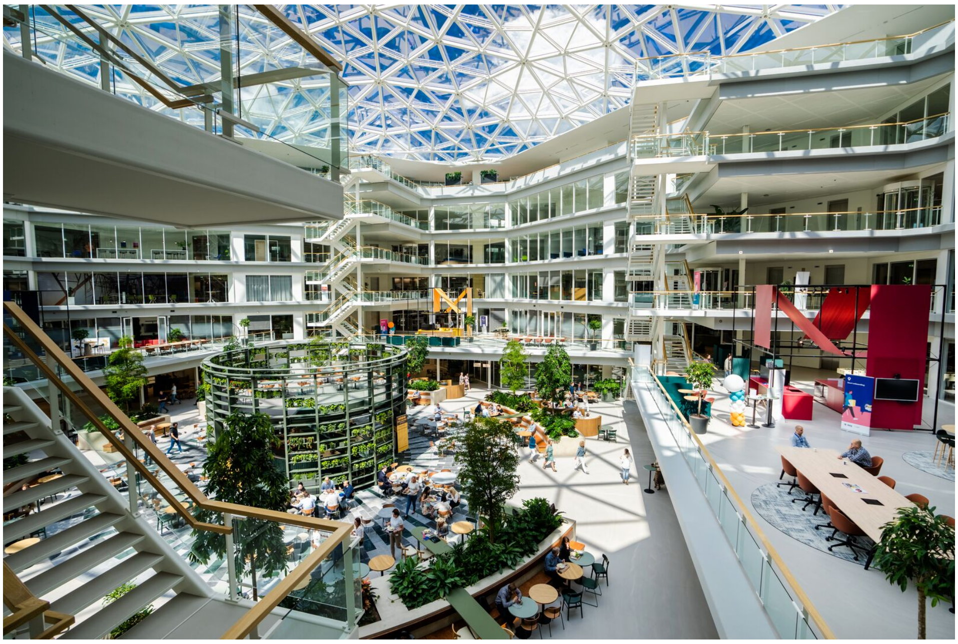
Finally, our fund clients ask us to invest in solutions with a positive impact on nature or society. We actively seek these kinds of solutions, but unfortunately there are fewer of them than we would like. And when we do find them, they have to meet our conditions for risk, return, cost, and sustainability.

Embedding responsible investment in the organization

APG has a team of ESG specialists at its offices in Amsterdam, New York, and Hong Kong. The tasks of this Global Responsible Investment & Governance Team (GRIG) include the following:

- collaborating with and challenging portfolio managers on responsible investing;
- engaging in dialogue with companies to encourage them to improve their corporate responsibility;
- implementing the voting policy;
- evaluating proposals on sustainability and good governance for unlisted investments; and
- engaging with regulators, supervisors, and other stakeholders.

APG's focus on and knowledge of responsible investment has increased significantly in recent years. This corresponds with our aim of becoming a leader in responsible investment. Other parts of APG, such as the Fiduciary Management and Risk Management teams, also employ responsible investment specialists, all of whom work closely together.



Making our operations more sustainable

APG wants to be a leader in sustainability. Of course, we can make the greatest impact with the investments we manage for our pension fund clients. But we can only set the bar high for others if we are prepared to do the same ourselves. That is why we encourage our employees to incorporate sustainability into their daily working activities and the choices they make. We also want to further increase our impact by demonstrating our social commitment on a local level.

We became a member of the UN Global Compact in 2021. This international organization's principles on human rights, labor, the environment, and combating corruption were already an important cornerstone for our investments. From now on we must also ensure they become an integral part of our organizational structure.

We also drafted a human rights policy in 2021. At APG, the theme of human rights is evident in four distinct areas: labor law, our procurement activities, how we deal with sensitive information, and in our investment engagements. A Sustainability Board was also established in 2021. Headed by the chair of the executive board, this board will draw up the resolutions that are necessary to further implement steps to achieve our sustainability ambitions.

In our staff policy, sustainable behavior affects how we recruit and retain employees. We aim to create a diverse and inclusive culture where employees feel secure and can be themselves.

By 2030, we want our operations to be demonstrably climate neutral. To achieve this aim, we took concrete steps in 2021 in terms of office space (APG moved into a sustainable building), circularity, and domestic and international travel. See APG's annual report for more details.

International involvement

Global collaboration between institutional investors is an important element in successfully tackling responsible investment challenges. APG is involved with a wide range of international organizations, including:

- Global Investors for Sustainable Development Alliance;
- International Corporate Governance Network;
- Institutional Investors Group on Climate Change;
- Investor Leadership Network; and
- Asian Corporate Governance Association.

APG is committed to developing standards that can advance responsible investment. For example, we were co-founders of the Corporate Human Rights Benchmark, the Global Real Estate Sustainability Benchmark for real estate and infrastructure, and the Carbon Risk Real Estate Monitor, a global method for determining whether real estate assets are aligned with the goals of the Paris Agreement. APG was also one of the founders of the SDI Asset Owner Platform.

Recognition

Our pension fund clients again received excellent scores in the annual ranking of sustainable pension funds by the Association of Investors for Sustainable Development (VBDO). ABP took first place for the fourth time in a row. BpfBOUW followed close behind in second place, just as in 2020. SPW was ninth and came third in the category of pension funds with invested assets of between €10 billion and €30 billion. Each year, VBDO assesses how responsibly the 50 largest pension funds in the Netherlands invest their assets.

We scored above average in the annual Principles for Responsible Investment (PRI) benchmark, with an A+ for strategy and governance. As the PRI report for 2021 is not yet available at the time of publication of this report, this is the score for 2020.

The SDI Asset Ownership Platform (Chapter 4) – of which APG is a co-initiator – won the 2021 Pension Pro Award for responsible investment. The jury stressed that the initiative can play an important role for asset managers because the platform enables them to focus more on engagement than data management, for example.

Greater insight into the effect of responsible investment on risk and return

APG aims to generate good pensions for the participants in our clients' pension funds. This is why it is important for us to understand how investing responsibly affects the risk and return of our investments.

Scientific research reinforces our conviction that we make better decisions when we structurally include sustainability and corporate responsibility in our investment process. Focusing on these issues enables us to better assess the opportunities and risks associated with our investments. Research also shows that successful engagement has a positive long-term effect on the financial performance of companies. Engagement with companies that need to do more in terms of incorporating ESG into their operations and behavior is an indispensable part of our responsible investment approach.

We measure the effect of inclusion and exclusion, reducing our carbon footprint, and investing in the SDGs on the return on our equity and corporate bond holdings. The effect in 2021 was slightly positive.

In October 2021, ABP announced that it will stop investing in producers of fossil fuels (Chapter 6). These divestments are not expected to have a negative impact on long-term returns. Research into the long-term performance of these investments shows that historically their contribution to overall portfolio performance was minimal.

Financial performance is and will always be a condition for our choice of investments. In other words, even if an investment is attractive from an ESG point of view, we only invest if the expected return, risk, and costs are also favorable.

Chapter 2

Actively investing in leaders and potential improvers

As a responsible investor with a long-term view, we believe we can have the greatest impact by "including" rather than "excluding" investments. What do we mean by this?

What is inclusion?

Inclusion means that we evaluate all the companies that we can invest in through equities or bonds (the investment universe) in terms of return, risk, cost, and the degree to which they operate responsibly. If a company meets our fund clients' parameters and scores above average compared to its industry peers[1], we call it a "leader." We like to invest in such companies for our pension fund clients.

In addition, there are companies that score well on return, risk, and cost but lag behind on sustainability and good corporate governance. We may invest in such "laggards," but only if we think we can encourage them to improve their performance on sustainability. Engagement is a condition for investing in these companies, which we refer to as "potential improvers."

Our inclusion policy ensures that we comply with the guidelines of the OECD (Organisation for Economic Co-operation and Development) and the covenant on International Socially Responsible Investment (IMVB) on:

- systematically identifying the negative impact the activities of the companies we invest in may have on society and the environment; and
- exerting influence on companies to reduce this negative impact.

The quality of ESG data is generally not yet as good as that of financial data, which is why we invest in digital technologies, artificial intelligence, and other ways to collect data on the sustainability performance of investments. However, human brainpower and fundamental analysis continue to play a crucial role and APG ensures that it has sufficient capacity to check and validate data.

Leader or laggard? Our criteria

The criteria we have developed to evaluate companies in the areas of human rights, labor rights, the environment, and business ethics are based on the principles of the UN Global Compact. We check whether companies have a sound policy in these areas, whether they generally honor agreements and whether any incidents have been flagged.

We use separate criteria for every industry that take into account the specific sector-related risks. We also look at the countries and regions where companies operate. We expect companies that operate in areas with an increased risk of human rights violations to be able to detect and limit those risks. This means they should always have an appropriate human rights policy in place. The infographic on page 17 shows for one sector – mining – how we assess companies according to our inclusion policy.

1 More precisely: if the normalized score is above the median.

All mining companies that we can invest in

Absolute criteria

Are there plans to expand coal-fired power stations?

Have there been any serious incidents related to bribery, corruption, local communities, waste discharges?

Yes

1 or more X

Example of laggard: **Glencore**

No

Other criteria

Is there a whistle-blowing policy for bribery, corruption, and ethical incidents?

Are there programs in place to engage local communities and protect their rights?

How well does the company do compared to its peers, for example in terms of:

- air quality
- diversity

Positive

Example of leader: **Anglo American**

Negative

No engagement

Engagement

Example of potential improver: **BHP**

Potential improver: BHP Group

We are in talks with BHP after a company tailings dam at the Samarco mine in Brazil collapsed in 2015, causing extensive destruction. We are closely following the steps the company is taking to clean up, repair, and compensate for the damage. BHP has set up a foundation and pledged to make funds available for remedial measures until the relevant authorities are satisfied that the incident has been properly resolved. The company is investing in education, infrastructure, and medical facilities for the affected communities. But the construction of new housing for local residents is behind schedule and has been further delayed by the COVID-19 pandemic. APG will continue to engage with the company until more progress is made in this area too.

Stake in laggard sold: Glencore

APG sold its stake in mining company Glencore in 2021. The reason was a new evaluation of the improvement process that we had been conducting with the company since 2018. As a mining company, Glencore is exposed to major sustainability risks, such as bribery, corruption, conflicts with local communities, and poor working conditions. Glencore is open to our input and has made improvements, but the risks remain high. As we do not expect the company to be able to further reduce these risks in the short term, we have sold our stake.

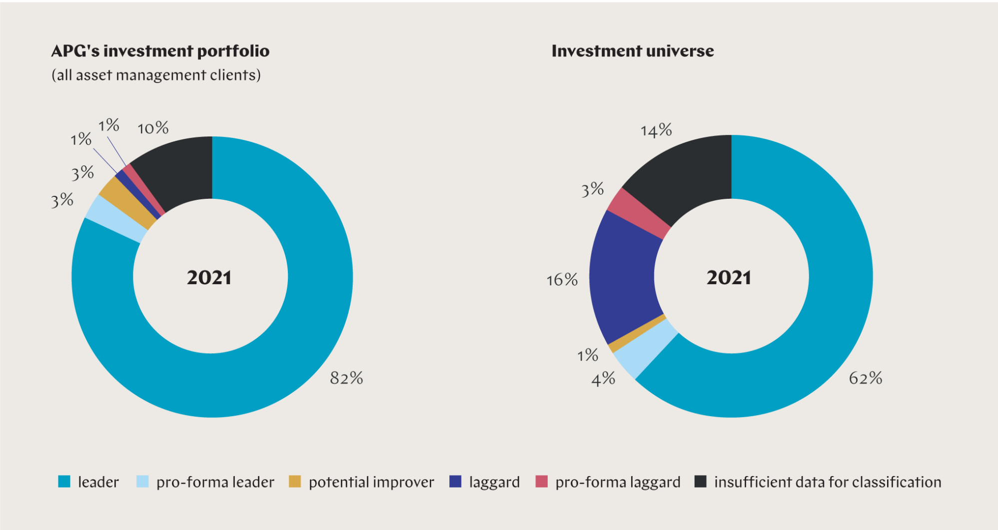
Annual review

Every year, we reassess the companies in our investment universe. Some companies change and other new companies emerge. We give them a provisional (pro-forma) classification during the year as a leader or laggard. Subsequently, these classifications are officially determined ("frozen") once a year.

Our pension fund clients only want to invest in leaders and potential improvers. At the end of 2021, there were still some laggards in the equity and corporate bond portfolios (about 1% of the total number of companies in which we invest). These are companies that:

- have only recently been added to the portfolio and for which, in line with policy, we still needed to draw up an improvement plan; or
- we were not yet able to sell, for example due to trading restrictions

Leaders, laggards, and potential improvers (% of number of companies)[2]



ESG focus in other asset classes

The inclusion policy applies to equities and corporate bonds. But we also incorporate ESG criteria into the investment process when making private investments and investments in government bonds. Proposals for new private investments, for example in real estate or infrastructure, are assessed not only by portfolio managers but also by our specialists in the responsible investment team. They advise the portfolio managers on ESG and are involved in drawing up the conditions for new investments.

[2] This applies to the listed equity and corporate bond portfolios, including investments in listed real estate.

Government bonds
When investing in government bonds, we look at factors that impact the ability of countries to repay their loans, such as corruption, quality of governance, and the environment. We exclude government bonds from certain countries (Chapter 3).

We assess which part of our government bond portfolio is invested in countries with a high climate risk. We look at both physical risks (such as the risk of flooding) and transition risks (such as the risk that a country is insufficiently able to switch from fossil fuels to renewable energy). To determine the physical climate risk of a country, APG uses indicators from ND-GAIN. We assess how vulnerable a country is to the effects of climate change, and the extent to which it is ready to handle such changes. For the transition risk, APG looks at a country's dependence on fossil fuels, its carbon emissions (carbon intensity), and its ability to switch to renewable energy sources.

APG includes climate risk in its assessment of government bond investments. For our pension fund clients, we invest primarily in government bonds of countries with a high credit rating. In general, these countries are less vulnerable to the effects of climate change.

Private equity
For our investments in private equity (investment funds in unlisted companies), we examine in advance the working methods of the fund managers for any potential negative effects on society and the environment. We have also drawn up ESG guidelines. These state the criteria that investment proposals in private equity must satisfy to be eligible for investment.

For our investments in private equity, we speak with the manager of the investment fund rather than with the companies that are being invested in. Because private equity funds often have large stakes in companies, they can exert considerable influence. Private equity managers must subscribe to our inclusion policy and provide us with an annual ESG report. Unlisted companies generally disclose far less information than listed companies. Such reports enable us to assess both the private equity manager and the companies that are being invested in.

Hedge funds
The hedge funds we invest in also comply with our inclusion policy. We expect hedge funds to include ESG risks in their company analyses. If they hold stocks or bonds for a longer period, we expect them to have a voting policy that incorporates ESG matters.

Commodities
APG also invests in easily tradable ("liquid") commodities. This is mainly done through futures contracts so we do not invest in the underlying physical commodities. In 2021, we continued our dialogue with seven commodities exchanges about gaining insight into potential irregularities in commodity futures trading on their exchanges. As the exchanges determine the contract terms, they are in a position to tackle such issues.

“Patience is key when engaging with Asian companies”
Interview with Debanik Basu, Senior Manager Responsible Investment Asia

Many Asian companies are owned by their founding families, and there is usually little institutional supervision. This helps when it comes to maintaining a clear long-term vision, but it can also result in a reluctance to change. This means engaging with Asian companies is not always easy. Patience and understanding of the corporate culture are important, explains Debanik Basu.

Why is it important for APG to exert influence on Asian companies?
“Some of the biggest and fastest-growing economies in the world are in Asia. But when it comes to sustainability, they still have some catching up to do. Many large international companies have suppliers in Asia, so we cannot afford to have investments there that carry a disproportionate degree of ESG risk. APG has the influence and knowledge of global best practice to enable us to directly contribute to changing corporate behavior in this region.”

Is engaging with companies in Asia different to engaging in Europe or the United States?
“Definitely. Sustainability in Asia is at varying stages of maturity. This means that sometimes we have to go the extra mile to get something done. Another key difference is that, in Europe and the United States, the executive board is often willing to engage with shareholders, whereas in Asia these discussions do not usually go beyond the management teams. In many cases, this makes it difficult to have a frank and objective exchange of ideas.”

What works well and what does not?
"Patience is the key. Wanting to get too much done in a short timeframe will only result in greenwashing. It usually helps if we can provide relevant examples of successful initiatives at other companies in the sector. Stricter legislation and reporting requirements have also borne fruit in some countries and have encouraged company boards to embed sustainability more firmly in their organizations."

What dilemmas do you face on the road to greater sustainability?
"A recurring concern we hear from companies is that increased attention around sustainability comes at the expense of a focus on growth and operational stability. So we need to work together to find the right balance. There is no one-size-fits-all approach. Engagement must be aligned with a company's culture, its growth stage, and the resources needed to deliver real change."

Chapter 3

Exclusion

Our pension fund clients do not want to invest in certain companies, government bonds, and products. These are on our exclusion list.

Exclusion of companies

For our pension fund clients, we do not invest in manufacturers of weapons that are prohibited by international treaties signed by the Netherlands. This applies to companies involved in manufacturing cluster bombs, anti-personnel (land)mines, and chemical and biological weapons. Nor do we invest in tobacco companies or companies involved in the production of nuclear weapons and their key components.

At the end of 2021, 147 listed companies were on the exclusion list based on their products. In addition, three companies were on the list for violating the principles of the UN Global Compact in the areas of human rights, labor conditions, the environment, and anti-corruption.

The same criteria regarding risk, return, cost, and sustainability apply to manufacturers of weapons in which we can invest on behalf of our pension fund clients as for other investments. Our pension fund clients' participants include employees of the police force and the Ministry of Defence. Without weapons, the police would not be able to maintain public order and the armed forces would not be able to ensure peace and security.

Our public exclusion list only includes listed companies. However, on behalf of our pension fund clients, we also exclude investments in unlisted companies that are involved in the above-mentioned activities. This list includes another 174 companies.

Exclusion of government bonds

We do not invest for our pension fund clients in the government bonds of countries on which the UN Security Council or the European Union has imposed a binding arms embargo. At the end of 2021, a total of 15 countries were on this list. We facilitate our pension fund clients in tightening the criteria for government bonds.

Sale of Russian investments

Although it does not fall in the year under review, the consequences of the Russian military attack on Ukraine should not go unmentioned here. At the beginning of March 2022, our pension fund clients decided to sell all their investments in Russia. The value of these investments at that time was approximately €600 million. We have not invested in Russian government bonds for our pension fund clients since 2020. The sale of the investments may take some time because Russian stock exchanges are currently not processing sell orders from foreign investors.

Chapter 4

Investing in the Sustainable Development Goals

By the end of 2021, we had invested €112 billion in companies and projects that demonstrably contribute to the Sustainable Development Goals. That represents 17.6% of the invested assets.

Contributing to the Sustainable Development Goals

We actively search for investments for our pension fund clients that contribute to the Sustainable Development Goals (SDGs). These were established by the United Nations in 2015 to create a better and more sustainable world by focusing on topics such as good education for all, climate action, and accessible healthcare.

In 2017, APG and PGGM developed a framework (taxonomy) to determine which companies contribute to the SDGs with their products and services. We call these investments Sustainable Development Investments (SDIs). Like all other investments, SDIs must meet our criteria for return, risk, and cost. If a company makes a tangible contribution to achieving the SDGs, we see this as an important advantage and an additional argument for investing in that company.

Impulse for sustainable investments in emerging markets

APG was the first investor in a new fund to contribute to the development of sustainable investment in emerging markets. The investment (€650 million) is in an ILX Management fund for private loans in emerging countries. The loans are used to finance sustainable projects and companies. APG made the investment on behalf of ABP and bpfBOUW, both of which aim to invest a larger portion of their assets in SDIs.

The fund will build a portfolio of loan participations in emerging markets. These loans are provided by multilateral development finance institutions, such as the Asian Development Bank and the African Development Bank. The focus is on financing projects for renewable energy, sustainable industry and infrastructure, inclusive finance, and food security.

Although APG also invests directly in bonds issued by development banks on behalf of the pension funds, this initiative enables us to invest in individual projects and decide what we do and do not want to invest in. It also allows us to build a broad and diverse portfolio, whereas individual institutions usually focus on a specific region or sector.

Collaboration

There is often insufficient accurate and reliable information to assess whether companies are contributing to the SDGs. That is why APG joined forces with PGGM, AustralianSuper, and British Colombia Investment Management Corporation to establish the SDI Asset Owner Platform (SDI AOP) in 2020. The platform uses artificial intelligence to determine whether and how much companies contribute to the SDGs with their products and services.

In 2021, BlackRock – the world's largest asset manager – decided to use the platform's data. The involvement of a global player such as BlackRock reflects the growing focus among investors on aligning their investment portfolios with the SDGs.

Users of the platform have agreed on a common definition for SDIs. This allows them to speak with companies with one voice and report on their investments in the SDGs in a comparable way. Data company Entis[3] provides the affiliated asset managers with SDI ratings for 8,700 companies (thus far). The SDI definition and taxonomy are publicly available and also apply to unlisted investments, such as real estate and infrastructure. Users receive the SDI ratings via Qontigo.

The SDI AOP is encouraging international investors to join the platform with the aim of making it a global standard for investing in the SDGs.

Responsible Investment Index

In 2021, APG, BlackRock, and index provider Qontigo launched the iSTOXX APG World Responsible Investment Indices. This initiative responds to the growing demand for tailored sustainable index products. The product currently consists of five indices for equities in developed markets, with each index geared to a specific ESG criterion (exclusions, leaders, CO_2, and SDI). This allows us to measure the effect on risk and return for each individual criterion. The indices are built using APG datasets and the SDI Asset Owner Platform.

3 Entis was formed after APG acquired Deloitte's data analysis activities in 2018. Entis is an independent business unit within APG.

“The best solution for our pension fund clients can also be an index product”
Interview with Ronald van Dijk, Managing Director Quantitative Strategies

For an active investor such as APG, the launch of the iSTOXX APG World Responsible Investment Indices initially seemed to be a surprising development. Ronald van Dijk explains how APG intends to meet the needs of pension fund clients with this product.

As an active investor, why is APG offering an index product?
“We still advocate a highly active form of investing for those clients for whom this is suitable. But as it also involves higher costs, it is only attractive for asset owners of a certain size. This product is suitable for smaller funds that want the low costs of an index product while maintaining an active stance in terms of ESG. Our primary objective is to offer the best solution to our clients. In certain cases, that may be an index product.”

How does this product work?
“It is based on the iSTOXX World Index. Five filters can then be applied, according to the client’s preferences. The first filter is ‘exclusions’: that means not investing in certain companies, for example because they are involved in the production of controversial weapons. This is the ‘entry-level model.’ By applying further additional filters, you get an increasingly sustainable investment portfolio. If you apply all five filters, you end up with the most sustainable portfolio. This creates a somewhat more active form of index investing.”

Why is APG working with Qontigo and BlackRock on this product?
“APG is the architect of this product. We determined the ESG profile and ensured that it was appropriate for our clients and other Dutch pension funds and then selected partners to implement it. Qontigo maintains the index on a daily basis, which is a discipline in itself. BlackRock makes sure that the right shares are bought and sold every day. We take care of the voting policy and monitor whether the companies in the indices comply with our ESG profile. We also vote on behalf of the clients who own this product at shareholder meetings.”

What are APG's future plans for this product?

"We see this as an enrichment of APG's product ranges. Most importantly, we want to serve our existing pension fund clients. It is not part of our strategy to attract clients solely for this product. If we attract new clients, this product can be part of the package we offer – which will always include an active approach."

Investments per Sustainable Development Goal

SDG 11	Sustainable cities and communities	€ 46.6	billion
SDG 3	Good health and wellbeing	€ 28.4	billion
SDG 7	Affordable and clean energy	€ 20.8	billion
SDG 9	Industry, innovation and infrastructure	€ 5.2	billion
SDG 2	Zero hunger	€ 2.3	billion
SDG 12	Responsible consumption and production	€ 1.9	billion
SDG 6	Clean water and sanitation	€ 1.5	billion
SDG 15	Life on land	€ 1,3	billion
SDG 8	Decent work and economic growth	€ 1.3	billion
SDG 1	No poverty	€ 879	million
SDG 4	Quality education	€ 794	million
SDG 13	Climate action	€ 450	million
SDG 10	Reduced inequalities	€ 291	million
SDG 14	Life below water	€ 251	million

Contributing to safety in the workplace

MSA Safety has been a leading company in safety equipment used on construction sites, in factories, and by fire departments since 1914. MSA Safety makes safety helmets, fall protection equipment, gas detectors, and breathing apparatus. APG has invested in this company since 2020.

Research shows that failing to use safety equipment or using it incorrectly is a major cause of accidents at work. MSA Safety collaborates with companies in high-risk sectors when developing its products. After all, they must be comfortable and easy for employees to use. MSA Safety also leads the way in the development of digital solutions to improve safety in the workplace. For example, sensors that warn of safety equipment not being used or being used incorrectly or that show where someone in distress is located.

MSA Safety develops, among other things, breathing apparatus and PFAS-free firefighting clothing for fire departments. PFAS are chemical substances that are harmful to people and the environment and are almost completely non-biodegradable.

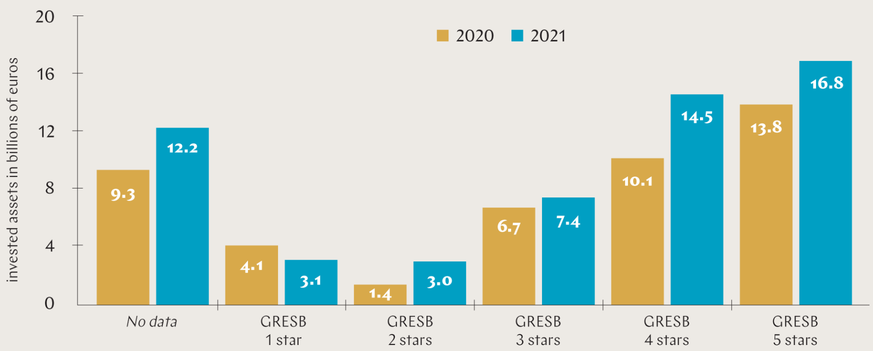
Our investment in MSA Safety contributes to SDG 3: Good health and wellbeing.

Sustainable cities and communities

At 2021 year end, we invested €31.3 billion in real estate that ranked above average in terms of sustainability for our fund clients. This contributes mainly to SDG 11: Sustainable cities and communities. We qualify real estate investments as SDIs if they score four or the maximum of five stars in the annual sustainability study of the Global Real Estate Sustainability Benchmark (GRESB). This means that they belong to the 40% best-performing funds that participate in this evaluation.[4]

Currently, 79% of our real estate investments (by value) report to GRESB. For our private investments in real estate entities, we are making participation in GRESB mandatory. New investments must also have an above-average rating within three years.

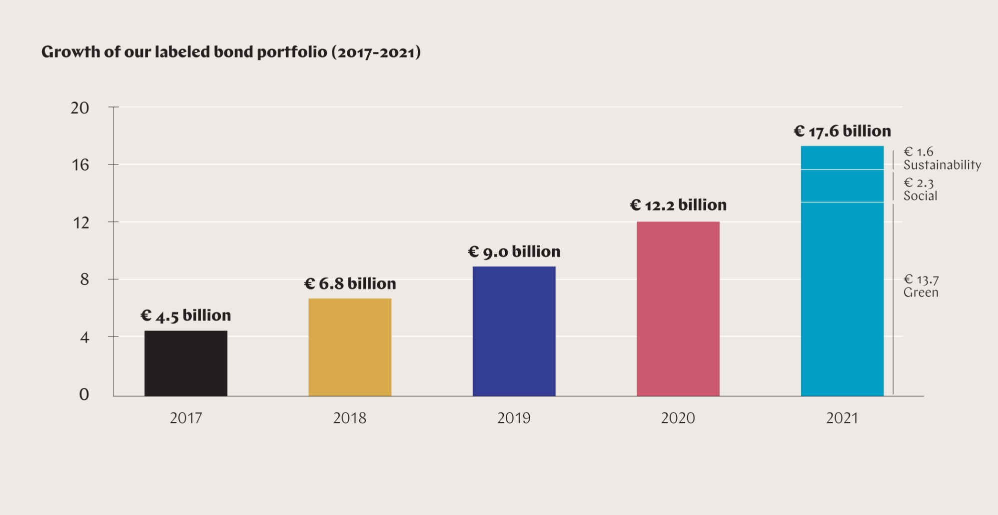
How sustainable are our real estate investments?



Investing in bonds with a sustainable label

2021 was another excellent year for bonds with a sustainable label. The most common form are bonds issued by companies, governments, and agencies where the proceeds are used to finance predetermined sustainable projects. There are three categories of bonds of this type – green (environmental), social, and sustainability (a combination of environmental and social). Examples include funding for renewable energy and for the construction of affordable housing for vulnerable groups. We require the same attributes in terms of return, risk, and cost for labeled bonds as for all our investments.

4 The GRESB rating indicates how sustainable a real estate enterprise is compared with other real estate enterprises assessed by GRESB. Real estate enterprises in the top 20% receive five stars. The 20% lowest-scoring real estate enterprises receive one star. See also this explanation.



APG is one of the world's largest investors in the market for labeled bonds. We have built good relationships with parties that issue or want to issue such bonds, as well as with bank syndicates, regulators, and certification bodies. We use our network and our experience and knowledge to develop the market. For example, every year we organize a roundtable to promote the development of the US market for sustainable corporate bonds.

In 2021, sustainability-linked bonds gained in popularity. These bonds enable governments, companies, or institutions to raise money for general purposes but the issuer promises to pay investors a higher rate of interest if preset sustainability goals are not achieved. This is in contrast to the "ordinary" sustainable bonds labels mentioned above. Irrespective of the type of labeled bond we are considering, we must carefully assess each issue's sustainable framework, the structure of the bond, and the sustainable objectives. To give (potential) issuers insight into our expectations and to encourage healthy market development, APG has published a Guidance on Sustainability-Linked Bonds. At year end, we had invested €813.5 million in sustainability-linked bonds.

In 2021, we invested €195 million on behalf of our pension fund clients in the European Union's first green bond. The issuance of this bond is part of a major European recovery plan to strengthen the economies of member states in the wake of the COVID-19 pandemic and make these economies more sustainable. Plans submitted by member states to receive funds must meet strict conditions for sustainable economic recovery.

Chapter 5

Human rights and labor conditions

APG wants the companies we invest in to respect the rights of their employees, local communities, and other stakeholders.

We expect the companies we invest in to act in accordance with the UN Global Compact. This contains principles for companies in the field of human rights, labor conditions, the environment, and the fight against corruption.

Like our pension fund clients, we view respect for human rights as a prerequisite to ensure that the major transitions the world is facing take place in an equitable manner. Our fund clients have signed the International Socially Responsible Investment (IMVB in Dutch) covenant, which is based on the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises and the United Nations Guiding Principles on Business and Human Rights.

Understanding human rights performance

In 2017, APG was one of the initiators of the Corporate Human Rights Benchmark (CHRB). CHRB compares the human rights performance of companies in the clothing, commodities, ICT, and automotive industries using indicators based on the UN Guiding Principles. It is an important source of information on companies in which we can invest. It also offers a starting point for discussing human rights with companies. CHRB has since become part of the World Benchmarking Alliance.

Exerting influence

In 2021, we spoke with 66 companies about human rights on behalf of our pension fund clients. We also spoke with 70 companies about labor standards, such as safety at work and the right of employees to unionize. We assessed human rights risks in new, unlisted investments and talked about this topic with the managers who handle these investments for us.

Human rights in Myanmar

Long before the coup (February 2021), we spoke on behalf of our pension fund clients with the companies we invest in about human rights in Myanmar. APG invests in several multinationals that operate there. We asked companies that may have business or financial ties with the military to reconsider their position in the country. Japanese brewer Kirin recently cut business ties with companies linked to the military, following pressure from APG and other investors.

Good working conditions

COVID-19 has further increased the focus on employee vulnerability and the importance of job security and healthy working conditions. Together with eight other major investors, we spoke with 50 multinationals in 2021 about the impact of the COVID-19 pandemic on their employees. We asked them to devote attention to paid sick leave, investment in training, and the promotion of diversity in the workplace. We also encouraged companies to share their experiences with successful initiatives. We will continue this dialogue with a number of companies in 2022.

On behalf of our pension fund clients, we are implementing an intensive improvement plan on occupational safety at Amazon. Absenteeism due to illness and accidents occur more frequently at this online shop than at other companies in the sector. Since the outbreak of the pandemic, the dialogue has focused on limiting the risk of contamination in the workplace. In 2021, our specialist visited the company and spoke to its management. Amazon has since taken measures to increase safety in the workplace. However, we urge the company to provide more information on the effectiveness of these measures.

To promote the payment of a "living wage," we joined the Platform Living Wage Financials in 2021 at the request of bpfBOUW. The affiliated financial institutions encourage the companies they invest in to ensure a living wage. This applies to people who work for the actual companies as well as people who work for their suppliers. We focus mainly on food producers, such as Coca-Cola and Mondelēz.

“Employees must be included in the transition”
Interview with Olivier van Hirtum, Senior Portfolio Manager Developed Markets Equities

Automation and digitalization have a major impact on the employees of the companies we invest in. APG completed its research on the impact that these major developments are having on the workplace in 2021. Olivier van Hirtum explains why we think it is important to gain insight into this.

How is climate change affecting workers?
“Climate change and the energy transition are affecting industries that employ many people, such as the automotive industry. However, it is still unclear how many, and where, new jobs will be created. This could occur, for example, through the generation of clean energy and in the manufacture of electric cars. But the demands on the knowledge and skills of workers are also changing as innovation becomes more important.”

And what about automation?
“It is not clear-cut. Some studies say millions of jobs will be lost, but there are also others that predict millions of new jobs will be created. There is more to automation than replacing people with machines; it also creates a demand for other skills, as people and machines interact in the workplace, for example. As machines take over routine tasks, the work for people becomes increasingly knowledge-intensive.”

Why is it important for companies to treat their employees well?
“Companies going through major changes need the support and knowledge of their employees to implement these changes successfully. They recognize that qualified, flexible, and committed people are indispensable in enabling them to continue to innovate and adapt. In the battle for top talent, it is also important for companies to be known as a good employer. This is especially true for younger generations, who consider this to be a key condition for joining a company. In addition, if we as a society do not deal well with these major shifts, the less educated, poor, and vulnerable employees will suffer the most.”

What does APG require of companies when it comes to dealing with their staff?
"Our minimum requirement is that companies guarantee safe working conditions for their employees. We want to know what strategy companies in transition have in place. We ask them to make a skill gap analysis: which skills do your employees have and which are still lacking? And how do you get from A to B? We asked the major car manufacturers to do this 18 months ago, and almost all of them are now working on it. We also want companies to show what they are doing to train their staff and what impact this is having. Employees must be included in their company's transition. Clear communication, training, and the hiring of new expertise are key."

IMVB covenant

In the International Socially Responsible Investment covenant (IMVB in Dutch) (2018), the Dutch pension sector made agreements with the government, trade unions, and environmental and civil society organizations to prevent malpractice at companies in which it invests. The covenant is based on the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles. By mid-2022, pension funds must have implemented all agreements.

In 2021, we and our pension fund clients continued to implement the requirements of the IMVB Covenant. As an asset manager:

- we identify and assess the negative impact of investments on people and the environment, such as involvement in human rights violations and prioritize these;
- we use our influence as investors to prevent or reduce these negative impacts;
- we continuously monitor for any negative effects; and
- we report on negative impacts and the measures we take to prevent and reduce them.

On our website, we explain how we have structured due diligence on the OECD rules and UNGPs.

Within the covenant, a number of pension funds – including ABP, bpfBOUW, and SPW – participate in the "deep track." They join forces to bring about improvements in companies or sectors where there is a risk of involvement in human rights violations. In 2021, an improvement plan was introduced at an information technology company on the protection of human rights in a digital environment. Previously, improvement plans were introduced at a mining company and an online retail chain. The results will be announced in due course via the IMVB covenant.

Chapter 6

Climate change and the environment

The effects of climate change are already visible and will further intensify in the future. APG is part of a select group of asset managers that are global leaders in identifying climate risks and their potential impact on investments.

Managing climate risks

Climate change has a major impact on the participants in our clients' pension funds, the economy, and on us as investors. For a sustainable future, global warming must remain well below 2 °C, but ideally below 1.5 °C. In 2015, 195 countries made a commitment to this by signing the Paris Agreement.

As a long-term investor, we recognized the importance of climate risks (and opportunities) early on, and we have been implementing a climate risk policy since 2019. This policy sets out how we measure, monitor, and manage climate risks and opportunities. We have also established a broad-based Climate Steering Committee, which coordinates the approach to managing climate risks and is the driving force behind the implementation of the climate risk policy.

We identify and report on climate risks and opportunities according to the framework of the Task Force on Climate-related Financial Disclosures (TCFD). APG has a well-diversified global investment portfolio, so we only expect the effects of climate change and the energy transition to have a gradual impact. However, we are already taking steps to bring our investment portfolio in line with the Paris Agreement. Further information about our assessment of climate risks and what we are doing to mitigate them can be found in Appendix 1 of this report.

APG has actively contributed to the development of the Net Zero Investment Framework (NZIF)[5], which offers investors practical tools to align their investment portfolios with the commitments in the Paris Agreement. The NZIF includes principles and minimum requirements for asset classes and sectors with respect to carbon reduction, investment in climate solutions, and engagement with investee companies. APG joined the Net Zero Asset Managers initiative (NZAM) in 2021. This is an initiative of international asset managers committed to a climate-neutral investment portfolio by 2050 or earlier.

APG is also one of the initiators of the Carbon Risk Real Estate Monitor (CRREM), which has developed global carbon reduction paths for commercial real estate. Investors can use these reduction paths to check whether the sustainability of their real estate investments is aligned with the Paris climate targets. The built environment is responsible for approximately 40% of global greenhouse gas emissions.

5 NZIF was developed by the Paris Aligned Investment Initiative, set up by the Institutional Investors Group on Climate Change (IIGCC).

Protection of biodiversity

Biodiversity refers to the variety of life on our planet and its ecosystems – the areas where this life occurs, such as forests, seas and in the soil. Biodiversity is declining rapidly worldwide, presenting a major threat to nature and our future prosperity. Many economic sectors depend on there being a sufficient variety of plants, animals, and insects. Examples include agriculture and fishery, but also (chemical) industry, real estate, and transport. Preserving biodiversity is therefore an important goal for APG and our pension fund clients.

APG is a member of the Biodiversity Working Group of the Dutch Central Bank and the Taskforce on Nature-related Financial Disclosures Forum. We also support the Partnership for Biodiversity Accounting Professionals (PBAF), in which financial institutions develop a method for measuring and reporting the impact of their investments on biodiversity. This enables them to use their investments to focus on restoring and protecting nature.

With PBAF, we have identified – for listed companies – which sectors contribute most to the loss of biodiversity. We are further refining the criteria for biodiversity for our fund clients. Biodiversity is also part of our thematic engagement to promote a sustainable food sector.

On behalf of ABP, in 2021 we invested in a large production forest in Chile and in Wenita Forest Products, a large producer of forest products in New Zealand. These forests have been awarded a Forest Stewardship Council quality label, which means they help to preserve biodiversity and that their management takes into account the welfare of workers and local communities.

Financial sector's Climate Commitment

The Dutch Climate Agreement contains agreements on how the Netherlands should achieve the Paris Agreement targets. The Dutch financial sector, including APG, voluntarily committed to this in 2019 by signing the financial sector's Climate Commitment. The participating institutions invest in the energy transition, agree to be transparent about their investments' carbon footprint, and take measures to limit their impact on the climate.

According to the Climate Commitment, asset managers and pension funds are required to show the carbon footprint of their investments on an annual basis. APG has contributed to a framework for reporting carbon impact and to an overview of carbon footprint measurement methods in the Dutch financial sector. We believe it is important that financial institutions learn from each other and work to create a measurement method that is transparent and verifiable.

Like our pension fund clients, we report on the carbon footprint of our investments in accordance with the Global GHG Accounting and Reporting Standard for the Financial Industry, developed by the Partnership for Carbon Accounting Financials (PCAF). This method, of which we are one of the initiators, is now used by 279 financial institutions worldwide.

Contributing to the energy transition

APG contributes to the financing of the energy transition in a number of ways. For example, by investing on behalf of our pension fund clients in the SDG "Affordable and clean energy," in sustainable infrastructure and in making the built environment more sustainable. Specifically for ABP, we invest in companies and projects that offer innovative solutions for the Dutch energy transition through the ABP Energy Transition Fund (ANET). In 2021, ANET invested in NET2GRID, for example. This company enables energy suppliers and utilities to provide their customers with instant oversight of their current and future energy consumption.

Investing in renewable energy

In 2021, APG acquired an interest in Windpark Krammer on behalf of ABP. This park, with 34 wind turbines on land, will save 4 million tons of CO_2 during its lifetime. The park was completed in 2019 and is the second Dutch investment by Kallista, a company that plays a leading role in the development of renewable energy projects in Europe. APG has a majority stake in Kallista.

Investing in sustainable infrastructure

APG increased – on behalf of ABP – its stake in Alpha Trains in 2021. With operations in more than 17 European countries, Alpha Trains is a market leader in leasing passenger trains and locomotives in continental Europe. Its fleet consists of approximately 800 passenger trains and locomotives, the majority of which are electric.

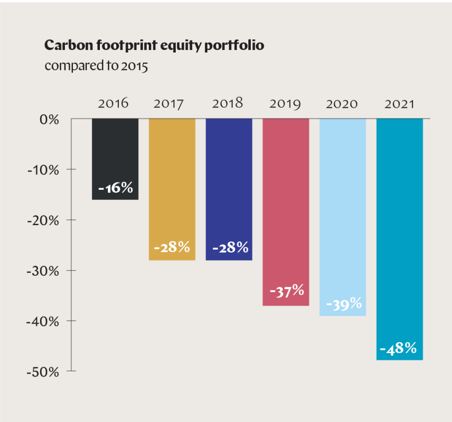
Investing in making the built environment more sustainable

The idea behind the green mortgages offered by Rabobank subsidiary Vista Hypotheken is to help people to make their homes more sustainable in a financially attractive way. Since 2019, we have invested almost €1.3 billion in these green home loans for our fund clients. Customers receive a discount on their mortgage interest if they buy a home with an “A” energy label or take steps to make their homes sufficiently sustainable that they qualify for this label.

Carbon footprint

APG calculates how much carbon is emitted by the companies we invest in via our equity holdings and how much of that can be attributed to us (carbon footprint). Our pension fund clients all have a target for reducing the carbon footprint of their equity investments and so we continuously monitor this footprint and may take it into account in our investment decisions.

The carbon footprint of the equity investments that we manage for our fund clients decreased by 48% compared with 2015, the baseline year.[6] The lower footprint is partly due to the fact that we have a stricter inclusion policy, which has led us to sell our investments in a number of carbon-intensive companies. We also focus on companies that emit little carbon compared with other companies in their sector.



APG also publishes the carbon footprint of its investments in corporate bonds, real estate, and private equity (see Appendix 2 of this report). In total, we have calculated the carbon footprint for 61% of our investment portfolio. By reporting on this, we are complying with the agreements in the financial sector's Climate Commitment. In 2022, our fund clients will link climate objectives for 2030 to this.

In line with ABP's policy, in 2021 APG sold all investments in companies that derive more than 30% of their revenue from coal mines or more than 20% from oil sands. Examples include Suncor Energy (oil sands) and Whitehaven Coal. The burning of coal and the production of oil from oil sands release large quantities of carbon, even compared with other fossil fuels.

ABP exits from fossil producers

In October 2021, ABP announced its withdrawal from investments in fossil fuel producers. This was prompted by alarming climate reports by the United Nations International Panel on Climate Change and the International Energy Agency. ABP's investments are being sold gradually. The majority is expected to be sold in the first quarter of 2023. In particular, we will engage with large-scale consumers of fossil fuels. As a shareholder, ABP wants to encourage such companies to speed up their transition from fossil to renewable energy sources. These are mainly companies in the automotive, aviation, and power industries. ABP expects the discussions with these large-scale consumers to be more productive.

6 The carbon footprint is determined on the basis of the portfolio composition on March 31 following the reporting year.

Leveraging our influence

As a major long-term investor, we exert influence on the companies we invest in. We vote at shareholders' meetings and also engage with companies on what we expect from them. We do this both alone and in collaboration with other major investors.

APG participates in Climate Action 100+ (CA100+). This alliance puts pressure on 167 companies that emit the most CO_2 worldwide. By joining forces, major investors can exert pressure more effectively. On behalf of CA100+, APG is leading the dialogue with Holcim and HeidelbergCement, two major manufacturers of building materials. CA100+ asks companies to:

- provide information about the climate risks they face;
- take measures to reduce their greenhouse gas emissions; and
- report on them in accordance with the TCFD standard.

In 2021, South Korean petrochemical company SK Innovation announced that it wants to be carbon neutral by 2050. APG held talks with SK Innovation on behalf of CA100+. Among other things, the company wants to fully recycle plastic and expand its business unit that focuses on batteries for electric cars.

APG was one of the driving forces behind a call from 22 international investors to the South Korean government in 2021. The country was asked to come up with a clear transition path that is in line with the Paris Agreement. They also called on South Korea to stop building new coal-fired power stations.

In the run-up to the 2021 "COP26" Glasgow climate conference, we supported a call by international investors for world leaders to do much more to combat climate change. Governments play a crucial role in creating the conditions that make it possible for investors to invest on a broader scale in the energy transition.

In 2021, as in previous years, we took climate impact into account when voting on executive appointments and remuneration. For companies that do not have a CO_2 target or do not link remuneration to climate targets, we voted against director remuneration, nominations, and against approving the financial statements. In 2022, on the initiative of our fund clients, we will make further stringent adjustments to our climate voting policy.

SDG 7: Affordable and clean energy

At the end of 2021, we had invested €20.8 billion on behalf of our fund clients in SDG 7: Affordable and clean energy. By investing in this SDG, we are reducing the climate risks in our investment portfolio and contributing to the energy transition.

“Stockholm Exergi is at the forefront of the energy transition.”
Interview with Carlo Maddalena, Senior Portfolio Manager Infrastructure

In 2021, a consortium led by APG acquired a 50% equity stake in Stockholm Exergi Holding AB (“SE”), Sweden’s largest provider of district heating. The company is considered a leader in sustainability and innovation, and even wants to be climate positive by 2025. Senior Portfolio Manager Carlo Maddalena explains the investment.

Why is Stockholm Exergi such an attractive investment?
“With its strong environmental focus, SE is at the forefront of the energy transition. The company’s foundations are strong: the demand for sustainable heating is high in Sweden, making the per-capita consumption of district heating one of the highest in Europe. SE provides a secure supply of heat to 800,000 customers in the region. The investment is a unique opportunity to acquire a stake in a leading, large-scale utility company in Scandinavia. These kinds of high-quality investments are scarce in this region.”

How did this transaction come about?
“Ahead of the transaction, APG formed a consortium of like-minded institutional investors, consisting of PGGM, Alecta, Keva, and AXA Investment Managers. APG acquired a 20.5% stake on behalf of client ABP, thereby advancing its ambitions in the field of climate change and responsible investment. The total stake of 50% was acquired from Fortum, a Finnish energy group, while the remaining 50% belongs to the city of Stockholm.”

Tell us about Stockholm Exergi's sustainable ambitions?
"The company's sustainability targets are highly ambitious. SE has developed into a fossil-free energy supplier and wants to become climate positive by 2025. To this end, it has already launched a number of innovative projects. For example, a project to build Europe's first large-scale bioenergy facility with carbon capture and storage (BECCS).Once operational, this facility will capture 800,000 tons of CO_2 annually. It was recently one of seven projects supported by the EU Innovation Fund."

Making the built environment more sustainable

In the Dutch Climate Agreement, it was agreed that the "built environment" will make a substantial contribution to reducing carbon emissions. Housing associations play an important role in this. They are faced with the task of making 2.4 million homes – a quarter of the Dutch housing stock – more sustainable. At the same time, tens of thousands of rental homes must be built to address the increasing shortage of housing. Of course, this requires financing.

On behalf of its fund clients, APG provides almost €750 million in direct loans to Dutch housing associations. In 2019, the online platform LIST Amsterdam was established for this purpose. We made an important contribution to its establishment. These loans enable housing associations to invest in building affordable rental housing, making existing housing more sustainable, and improving the quality of life in neighborhoods. For our pension fund clients, the investment provides a guaranteed long-term return.[7]

In addition to these direct loans, we also invest in bonds issued by the Bank Nederlandse Gemeenten (BNG) and the Nederlandse Waterschapsbank (NWB). These, in turn, grant loans to housing associations, for example.

7 Loans to housing associations for the performance of their public duties, such as building social housing, are guaranteed by the state through the Social Housing Guarantee Fund (WSW).

Chapter 7

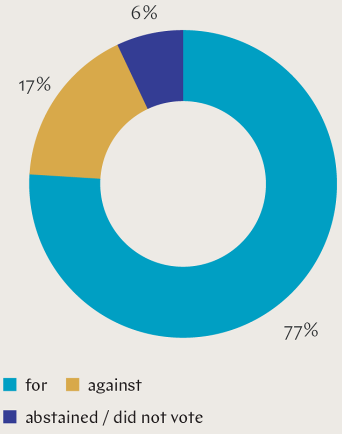
Good corporate governance

Good corporate governance is a prerequisite for companies to operate responsibly. This includes the integrity, effectiveness, and transparency of corporate governance.

An active voting policy

We voted on behalf of our pension fund clients at over 5,000 shareholders' meetings in 2021. We also spoke with 498 companies about ESG issues. Our website contains an overview of these companies and the topics we discussed with them. In 2021, we voted on nearly 55,000 proposals and resolutions on behalf of our fund clients.

How did we vote on all 54,789 proposals?

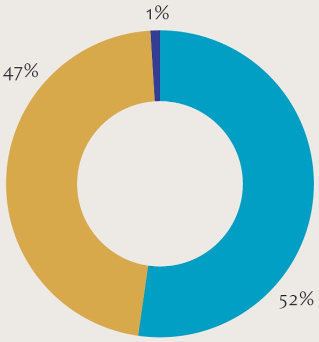


Voting on remuneration

The remuneration policy for directors should be in line with the general remuneration policy for the company's employees. We expect companies we invest in to clearly show in the annual report how directors' remuneration is determined, what the targets are, and what performance must be achieved before any remuneration or bonus is paid.

In 2021, we voted on 2,053 remuneration proposals. We voted against 47% of the proposals and in favor of 52%. Overly generous severance payments – especially common in the United States – are an important reason to vote against a proposal.

How did we vote on 2,053 remuneration proposals



for against
abstained / did not vote

“Management has to feel the impact of COVID-19 in their wallets too”
Interview with Mirte Bronsdijk, Senior Corporate Governance Specialist

In the Netherlands, the remuneration of top executives often causes friction. During the pandemic, some companies rewarded management, while employees, suppliers, and shareholders suffered. APG tries to influence the remuneration policies of listed companies. Mirte Bronsdijk explains how.

How can APG, as a shareholder, influence remuneration at companies?
“As a shareholder, you can enter into a dialogue with companies and use your right to vote. Since 2020, for example, the remuneration policy of Dutch listed companies must receive at least 75% of shareholder votes. Shareholders also have an advisory vote on the remuneration report, in which companies must explain, among other things, how they take social acceptance into account. Together with other investors, we quite often reject Dutch companies’ remuneration proposals.”

What do you look for when assessing companies' remuneration policies?
“APG adheres to its own voting policy. We expect the companies we invest in to clearly show in their annual reports how directors’ remuneration is determined, what the targets are, and what performance must be achieved before variable remuneration is paid. We also believe it is important that sustainability criteria play a role in determining directors’ remuneration. Of course, these criteria must be relevant, transparent, and objectively measurable. For example, we expect companies with high carbon emissions to link executive remuneration to their climate targets.”

What impact has the pandemic had on executive remuneration?
“Because of COVID-19, remuneration came under more scrutiny than usual in 2021. We believe that management should share the ‘pain’ when a company receives state aid, cancels its dividend, or has to lay off employees. For example, by reducing salaries or scrapping bonuses. If companies did perform well, you have to ask yourself whether that can be attributed to the management or whether it is simply a consequence of the lockdown. A situation which automatically drove consumers into the arms of supermarkets and web shops. Also, a bonus can be perceived as inappropriate when many people and companies are struggling.”

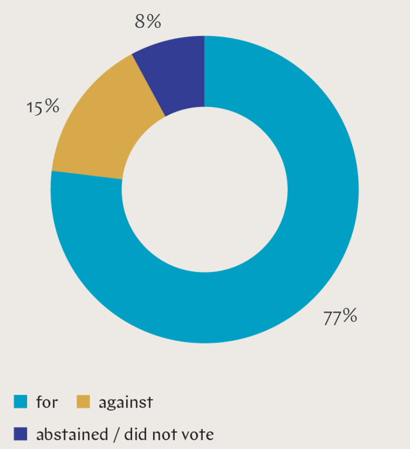
Voting on directors

When voting on the appointment or reappointment of directors, we look at whether the board is balanced and diverse, and whether the majority of non-executive directors are independent. All directors should have the right knowledge, experience, and skills. The composition and performance of the board and of individual board members should be evaluated regularly.

We expect directors to be appointed individually and nominated for reappointment regularly. The term of office for individual directors should be limited to a maximum of 12 years. In larger companies, especially those in sectors with a substantial human and environmental impact, we expect the board to have a director responsible for sustainability issues.

In 2021, we voted on 20,196 nomination proposals. We voted in favor in 77% of the cases.

How did we vote on 20,196 directors?



Board diversity

We require companies to consider board diversity when appointing directors. This includes, for example, a balanced mix of gender, ethnicity, education, personality, and age. We are convinced that a diverse board makes better decisions.[8]

8 Scientific research supports us in this. See for example: Marcus Noland, Tyler Moran, Barbara Kotschwar, "Is Gender Diversity Profitable? Evidence from a Global Survey," Peterson Institute for International Economics, 2016.

Chapter 8

Looking ahead

In 2022, our pension fund clients will further strengthen their sustainability ambitions. This brings new challenges for us as asset managers, for example in terms of accountability, communication, and data quality. But we do not intend to shy away from those challenges. Like our pension fund clients, APG will continue to develop in the area of responsible investment in 2022.

Increased focus on policy themes

In 2022, we will work on further improving our approach to those themes that our pension fund clients want to highlight in their responsible investment policy. Examples of these themes include climate change, biodiversity, and circularity.

Climate ambitions

APG aims to ensure that its investment portfolio is in line with the Paris Agreement. As agreed in the Financial Sector Climate Commitment, in 2022 our pension fund clients will come up with targets and action plans for 2030, including reduction targets for the carbon footprint of relevant asset classes.

In 2022, we started using a stricter voting policy at shareholder meetings. In doing so, we are paying special attention to the climate. We have higher expectations from companies that have a major impact on the climate. We are also taking a more critical look at diversity and executive remuneration at the companies we invest in, and we already implemented this stricter voting policy in the recent voting season.

One of the highlights of 2022 will be the implementation of ABP's decision to sell its investments in fossil fuel producers. We expect the majority of the investments to be sold in the first quarter of 2023. In addition, ABP will strengthen its sustainable and responsible investment policy. We are also honoring the wish of some of our pension fund clients to raise the bar on the exclusion policy for government bonds.

Implementation of IMVB covenant agreements

We will actively support our pension fund clients in the implementation of the agreements in the IMVB covenant. Our pension fund clients will have to implement the final agreements by mid-2022. The IMVB covenant contains agreements on combating malpractice in companies APG invests in. For our fund clients, this also means that they will report in more detail on the results of engagement.

Appendices

1: Addressing climate risks and opportunities

Climate change is having a far-reaching impact on society and the economy. So also on the participants in our clients' pension funds and on our investments. This appendix shows how we identify and manage climate risks.

We expect companies that emit large quantities of greenhouse gases to report according to the framework of the Task Force on Climate-related Financial Disclosures (TCFD). Therefore, we also report according to this framework.

APG has joined forces with other major investors to develop the Net Zero Investment Framework (NZIF). NZIF offers investors practical tools to align their investment portfolios with the commitments in the Paris Agreement. It includes principles and minimum requirements for carbon reduction, investing in climate solutions, and engagement with investee companies.

Governance of climate risks and opportunities

The governance for monitoring and managing climate risks and opportunities is well embedded in our organization and processes.

APG carries out a formal climate risk policy for its pension fund clients. APG's investment committee is ultimately responsible for the total investment portfolio managed by APG and monitors climate risks and the implementation of the climate risk policy.

The Portfolio Management department is responsible for managing the investments according to the mandate they have been given, including climate risks and opportunities. Investments above a certain size must be approved by the Committee on Investment Proposals (CIP), whereby sustainability risks (including climate risks) are explicitly considered.

The Risk Management department is responsible for the second-line management of climate risks. The Fiduciary Management department advises our pension fund clients on the implementation of the strategic investment plan, including aspects related to climate risks and opportunities. This department also supervises the execution of the clients' mandates.

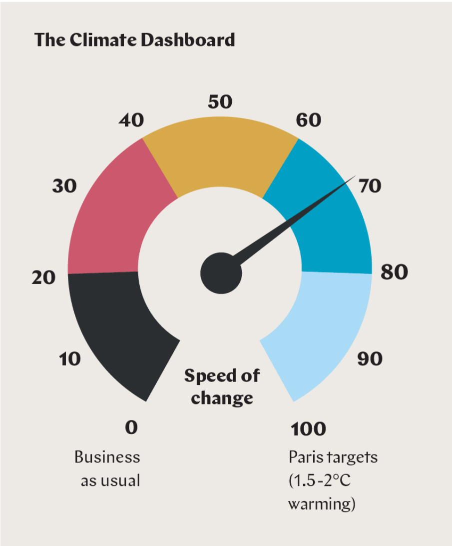
Since 2018, APG has had a multidisciplinary Climate Steering Committee, in which the Risk Management, Fiduciary Management, and Portfolio Management teams are represented. This steering committee coordinates the approach to managing climate risks and is the driving force behind the implementation of the climate risk policy.

Effects of climate risks on our business operations and strategy

Climate change and the energy transition represent one of the greatest challenges the world is facing. We distinguish between physical climate risks and transition risks.

- Physical risks are linked to the impact of changing weather patterns, such as damage caused by storms, prolonged droughts, and floods.
- Transition risks are related to the impact of measures to address the cause of climate change – greenhouse gas emissions – such as legislation and regulation, technological developments, and changes in market sentiment.

Transition and physical climate risks may lead to changes in the valuation of the companies and real estate we invest in. It is therefore important to understand how quickly the energy transition will occur. APG has developed a Climate Dashboard that uses 18 indicators to calculate the degree to which the world is on track to achieve the Paris Agreement's objective of limiting global warming to 1.5-2 °C. Data from the end of 2021 shows that the transition is still not progressing fast enough to meet this target. However, there has been a significant acceleration compared to the previous measurement point at the end of 2020.[9] The physical impact of climate change will be substantial in all scenarios, even if we manage to limit global warming to 1.5 °C.



The goal of the Paris Agreement is clear: limit warming to a maximum of 2 °C, and ideally 1.5 °C. But how to achieve this goal is less clear. The transition pathway depends heavily on the available technology and on the climate policy pursued by countries. A complicating factor is that historical information offers little guidance because the world will have to change dramatically in the future.

Because of these uncertainties, APG uses scenarios to identify climate risks and opportunities. These constructed scenarios describe what the world could look like in the future. They make different assumptions about climate policy and technological developments.

9 It should be noted that the outcome is influenced by extrapolations from the "COVID-19 year" 2020. This means that indicators based on carbon emissions or energy demand have changed positively. The strong increase in demand for energy and the related carbon emissions, however, paint a different picture.

Scenario analysis helps us to better understand what the road to "Paris" might look like and what impact this might have on our investments. These analyses are carried out at various levels. APG takes the results into account in its investment decisions.

APG also assesses which part of our government bond portfolio is invested in countries with a high climate risk. We look at both physical risks and transition risks. To determine the physical climate risk of a country, we use ND-GAIN indicators. These tell us how vulnerable a country is to the effects of climate change and the extent to which it is ready to handle such changes. For the transition risk, we look at a country's dependence on fossil fuels, its carbon emissions, and its ability to switch to a low-carbon economy.

Processes for managing climate risks

APG assesses all the companies in which we can invest via equities or bonds in terms of return, risk, costs, and the extent to which they operate responsibly. In 2021, new criteria were introduced for the climate efforts of the largest oil and gas companies and electricity producers. In other asset classes too, sustainability performance is part of the investment analysis. For example, climate risk is included in the calculation of the valuation of companies in which we can invest.

The portfolio managers and sector specialists of the various asset classes are primarily responsible for managing climate-related risks and exploiting opportunities. They have the requisite knowledge to assess how climate change may affect investments and how this translates into the valuation of individual holdings. In 2021, the managers of all investment strategies were instructed to draw up a specific strategy for dealing with climate risks. In this strategy, they explain how they take climate into account in their investment analysis.

Some examples of how we analyze and manage climate risks and opportunities:

- Portfolio managers actively monitor relevant regulatory, technological, and market developments.
- We ask companies that generate electricity using coal-fired power plants to stop expanding and to develop a strategy for transitioning to renewable energy.
- In calculation models, we factor in financial risks, such as CO_2 prices and declining coal revenues. For example, investors monitor the price changes in battery technology and the relative costs of energy sources ("levelized cost of electricity").
- Approval from the CIP is required for large investments with a long investment horizon. For such investments, the investment proposal carefully examines the transition and physical risks of climate change based on scenario analysis, among other things. APG's responsible investment team can also set specific requirements for the investment with regard to climate risk.
- We actively engage in a dialogue with companies we invest in to reduce their carbon emissions and to initiate the transition in line with the Paris Agreement. One of the ways in which we do this is through the Climate Action 100+ partnership.
- We measure the carbon footprint of our investments in equities, corporate bonds, real estate, and private equity. Overall, we measure the carbon footprint of 61% of our investment portfolio.

Our pension fund clients receive data on the results of the various analyses via a digital report. This is updated annually. In addition, we hold deep-dive sessions to keep our fund clients informed about managing and monitoring climate-related risks and opportunities.

Indicators and targets for climate-related risks and opportunities

APG uses the following indicators for climate risks and opportunities in the investment portfolio:

- We track 18 indicators to evaluate the speed of the transition.
- Using scenario analyses, we determine the transition risks for each sector with a time horizon of 2, 5, and 10 years.
- We measure the carbon footprint of our investments in equities, real estate, corporate bonds, and private equity.
- We measure how much we invest in companies and projects that contribute to the Sustainable Development Goals, some of which are related to climate change and the energy transition.
- We identify which part of our government bond portfolio is invested in countries with an increased climate risk.
- We measure climate risk in the real estate portfolio using CRREM (see box).

APG has set the following objectives to manage climate risks and take advantage of opportunities related to the energy transition:

- Our pension fund clients have a reduction target for the carbon footprint of the listed equity portfolio. In 2022, they will announce new climate targets for 2030, including carbon reduction targets.
- We are further refining the climate criteria in our inclusion policy for companies to reflect the funds' greater ambitions. We have also strengthened the voting policy for companies with a major impact on the climate.
- In line with ABP's policy, we have sold our investments in companies that derive more than 30% of their revenue from coal or more than 20% from oil sands.
- ABP decided to sell its investments in producers of fossil fuels. The majority is expected to be sold in the first quarter of 2023.
- APB and bpfBOUW have a Sustainable Development Goals investment objective. In addition, ABP has a specific objective for investing in SDG 7: Affordable and clean energy.

Climate risks in practice: real estate

Worldwide, the built environment is responsible for 30% of carbon emissions and 40% of energy consumption. It is therefore extremely important when investing in real estate to understand the transition and physical risks of climate change.

For physical risks, APG has developed a measurement system that calculates climate risks down to the level of individual buildings. This is based on the geographical coordinates of our real estate investments and information from several external data suppliers. Based on this information, we can calculate a score per risk (e.g. floods or forest fires) at different levels of the real estate portfolio and determine what investments are needed to reduce these risks. These risks are assessed for all real estate investments. The results are made transparent in a dashboard and can easily be integrated into risk management.

For transition risks, APG contributed to the development of the Carbon Risk Real Estate Monitor (CRREM). This is a global, scientifically supported method for determining whether a building meets the Paris climate targets. CRREM has developed “transition paths” that show for each type of real estate how much carbon and kWh of energy can be emitted and consumed until 2050 in order to stay within the target. CRREM recently joined forces with the Science-Based Targets initiative (SBTi).

2: How do we measure the CO_2 footprint of our investments?

APG has been measuring the carbon footprint of its investments in listed equities since 2013. All our fund clients also have a target for reducing the carbon footprint of their listed equity portfolio.

In the Dutch Climate Agreement, pension funds and asset managers have agreed to disclose the carbon footprint of their relevant investments on an annual basis. Since 2020, APG has also published the carbon footprint of its investments in corporate bonds, real estate, and private equity (see page 61). Currently, we report the carbon footprint of 61% of the portfolio.

In 2022, our fund clients will announce new climate targets for 2030. In this appendix, we explain how APG measures the carbon footprint and aims to reduce the footprint for listed equities.

Measuring the carbon footprint

APG calculates the carbon footprint of relevant asset classes according to the Global GHG Accounting and Reporting Standard for the Financial Industry, developed by PCAF. The carbon footprint is – with one exception – calculated based on the positions of companies as of December 31, 2021. If not yet available, the most recent position data is used.

Scope of relevant asset classes

APG aims to measure the carbon emissions of all relevant investments. Since 2020, we have been doing this not only for equities but also for corporate bonds, real estate, and private equity. Due to methodological challenges and the lack of data, it is not yet possible to determine the carbon footprint of all investments and all asset classes. APG is closely involved in initiatives to overcome these challenges.

In 2021, APG also made an initial calculation of the carbon footprint of the investments in government bonds. This asset class consists for the most part of bonds issued by governments. In addition, there are investments in bonds issued by state-owned companies or by institutions affiliated with governments. PCAF does not yet provide guidance on how to calculate the carbon footprint of government bonds. APG expects the methodology and availability of standards to change in the future and therefore does not yet publish the carbon footprint of the investments in government bonds.

What is the carbon footprint of our investments?

	Invested assets (€ millions)	Assets whose emissions are reported on (€ millions)	Absolute carbon footprint (tCO_2e)	Relative carbon footprint (tCO_2e/€ millions)
Equities	**210,099**	**207,186**	**9,353,650**	**45**
- developed markets	165,536	163,051	5,514,924	34
- emerging markets	44,563	44,135	3,838,726	87
Corporate bonds	**85,502**	**74,123**	**5,805,844**	**78**
- of which green bonds	3,064	3,064	1,037,941	339
Real estate	**56,823**	**57,112**	**2,318,779**	**41**
Private equity	**49,552**	**51,243**	**1,522,325**	**30**
Total assets for which CO_2 footprint is calculated	**401,976**	**389.664** (61.3%)	**19,000,598**	**49**
Other investments	**234,024**			
Total	**636,000**			

The absolute footprint shows the emissions that APG "owns" on the basis of its investments. If, for example, APG holds 1% of the shares in a company, 1% of the emissions of that company are allocated to APG. The relative footprint shows the emissions per million euros invested. This figure is obtained by dividing the absolute carbon footprint by the assets over which the carbon emissions are reported.

The method for measuring the carbon footprint of equities differs from the method we have used since 2015 to reduce the carbon footprint of the equity portfolio. The differences are explained on page 67. For the time being, both methods will continue to exist side by side. Since 2015, the carbon footprint of our equity portfolio has decreased by 48%.

Our green bond investments are included in the carbon footprint calculation based on the carbon emissions of the entire company. These emissions can be significantly higher than the carbon footprint of the individual projects for which the proceeds of a green bond are intended. This is the case, for example, for a bond issued to finance a renewable energy project at an electricity producer.

Certain items are included in the invested assets but not in the assets over which the carbon emissions are reported, such as cash and outstanding liabilities. The balance of these can be positive or negative. As a result, the assets on which the carbon emissions are reported can be higher than the invested assets.

The overview below shows the method we use to measure the carbon footprint of the various asset classes.

Summary of measuring methodology

	Equities	Corporate bonds	Real estate	Private equity
Method	PCAF-Global	PCAF-Global	PCAF-Global	APG method, based on listed equity
Allocation factor	Enterprise value including cash	Enterprise value including cash	Gross asset value	Enterprise value
Date position	31/12/2021	31/12/2021	31/12/2021	31/12/2021
Date CO_2 emissions	2020	2020	2020	2020
Scope	• Scope 1 & 2 • Scope 3 for energy and mining sectors	Scope 1 & 2	Scope 1,2 & 3	• Scope 1 & 2 • Scope 3 for energy and mining sectors
Data provider	ISS ESG	ISS ESG	GRESB	Sector averages based on listed equities (ISS ESG)
Investments included in the carbon footprint	• Ordinary shares • Preferred shares	• Corporate bonds • Green bonds	All real estate investments (listed and in private markets)	All private equity investments

Allocation factor

To allocate the carbon emissions of a company or asset to the portfolio, we use an allocation factor. This considers the total investment in relation to the total capital structure of a company or asset. Within the portfolio, investments can be made in the equity or in the debt of a company or asset. As prescribed by PCAF, we use “enterprise value including cash” for the total capital of a company or asset. If no data are available for this, we base our estimate on an industry average. For real estate, we use the gross asset value and for the attribution of the carbon emissions the capital invested by APG in the relevant year.

Total carbon footprint in tons of CO_2e (tCO_2e)

$$\text{APG carbon footprint } (tCO_2e) \sum \text{ Investment-specific emissions } (tCO_2e) \times \frac{\text{Total investments (€ millions)}}{\text{Total capital investments (€ millions)}}$$

Relative carbon footprint in tons of CO_2e per million euros invested (tCO_2e /€ millions)

$$\text{APG relative carbon footprint } (tCO_2e \text{ /€ millions}) = \frac{\text{APG carbon footprint } (tCO_2e)}{\text{Market value of relevant APG investments (€ millions)}}$$

Data sources

APG purchases data from external data providers to calculate the carbon footprint. In order to calculate the carbon footprint for as large a part of the portfolio as possible, we use the following hierarchy (from high quality to lower quality):

1. Emissions reported by the company or asset through CDP, GRESB, the company's annual report, or the sustainability report, as provided by our data providers;
2. Emissions estimated by our data providers; and
3. Emissions estimated by APG based on the average carbon intensity (tCO_2e/€ million turnover) of the sector.

The ISS ESG database is our primary source for emissions data. For investments in real estate, we use the Global Real Estate Sustainability Benchmark (GRESB). We invest heavily in maintaining and improving data quality. The data providers check the emissions data reported by companies. If this data is inconsistent (e.g. significantly higher or lower than industry peers or previous years) or incomplete (e.g. not applicable to all activities of the company), then our data suppliers make estimates. APG verifies data internally before it is used for measuring the carbon footprint.

Due to data providers' processes and validation of data by APG, it takes some time before the emissions reported by companies are available. The carbon footprint in 2021 is based on company emissions in the 2020 financial year.

APG aims to measure the carbon footprint of all relevant investments. In an ideal world, we would use the reported emissions of our investments in all cases, but these are not always available. Therefore, we rely heavily on assumptions, estimates, and sector averages when calculating the carbon footprint. This means that, depending on the asset class, the carbon footprint may not accurately reflect the carbon footprint of the relevant investments. For some asset classes, such as private equity, the carbon footprint is therefore only useful for information purposes. APG works with regulators, companies, sector initiatives, and external asset managers to improve the data quality.

Scope of emissions

The carbon footprint of individual investments is calculated based on the direct and indirect emissions of the company's own activities (scopes 1 and 2), converted into equivalent tons of CO_2 (CO_2e), as defined by PCAF. In line with the PCAF standard, APG also takes into account the emissions of the entire value chain (scope 3) to calculate the carbon footprint of a limited number of sectors. For the 2021 figures, these are the energy (oil and gas) and mining sectors. We show these scope 3 emissions separately below. For real estate, we also include scope 3 emissions (energy consumption by tenants) in the calculation. Scope 3 emissions are not yet as reliable as scopes 1 and 2 and in some cases can lead to double counting. We are now starting to include scope 3 emissions and are investigating the possibility of using them more in the future.

CO_2 footprint (scope 3) of our investments in energy and mining

	CO_2 emissions reported (x € millions)	Absolute carbon footprint (tCO_2e)	Relative carbon footprint (tCO_2e/€ million)
Equities	**7,294**	**25,041,114**	**3,433**
- developed markets	4,888	21,055,724	4,308
- emerging markets	2,406	3,985,390	1,657
Corporate bonds	**3,684**	**6,411,734**	**1,741**
Private equity	**3,438**	**5,739,366**	**1,669**

Considerations by asset class

Listed equities

Data availability on publicly traded stocks is generally good, especially for companies in carbon-intensive sectors in developed markets. Nevertheless, estimates from data providers play an important role, especially for smaller companies and companies in emerging markets.

Corporate bonds

In general, fewer data are available for corporate bonds than for listed equities. There is considerable overlap between these asset classes, but the corporate bond universe also includes smaller companies and companies that are not listed.

It should be noted that a significant proportion of our investments in corporate bonds are green bonds. The proceeds of these bonds are reserved for a specific sustainable purpose. By investing in green bonds, we can contribute directly to greening projects, including those of companies that are relatively carbon-intensive. An example is an electricity company that depends partially on fossil fuels to produce electricity but issues a green bond to invest in renewable energy.

PCAF has proposed an update to the standard for dealing with emissions associated with green bond investments, namely to assess green bonds separately, both in terms of company data and emissions. However, this update has not yet been definitively added to the PCAF standard. It is also challenging to obtain specific corporate and emissions data associated with a green bond. For the sake of completeness, we include our investments in green bonds in calculating the carbon footprint. We do this based on the carbon emissions of the entire company. These emissions can be significantly higher than the carbon footprint of the individual projects for which the proceeds of a green bond are intended. The carbon footprint of our corporate bond portfolio is therefore likely to be overestimated. That is why we also report the carbon emissions of green corporate bonds separately.

In addition to corporate bonds, our bond portfolio also consists of securitized investments (e.g. mortgage-backed securities). In 2021, APG developed a method to include these in the calculation of the carbon footprint. The carbon emissions of these investments are estimated using data on the issuing institution (e.g. a bank). This enables us to include a larger part of the portfolio in the calculation.

To calculate the carbon footprint of our corporate bonds, we use carbon emission figures and fundamental data (e.g. enterprise value and revenue). If this data is not available for a specific bond, we use information on the parent company. The parent company may not be fully representative of the emission profile of the company we invest in. If fundamental data are not available, we use an estimate based on an industry average.

Real estate

The real estate asset class consists of listed equity investments and private real estate. The global PCAF standard focuses on real estate loans, while our investments are in real estate equities. Therefore, we consistently use the global PCAF methodology for listed equities and corporate bonds to measure the carbon footprint. Our primary data source for carbon emissions in this asset class is GRESB.

For investments that do not or only partially report to GRESB, we estimate emissions as follows:

- If a real estate investment reports emissions for only some of the properties in its portfolio, then we calculate the total emissions by extrapolating to 100% of the portfolio.
- If a real estate investment does not report to GRESB, then we estimate the emissions based on the average emissions of other real estate investments in our portfolio in the relevant sector that do report to GRESB.
- If we do not know to which sector a real estate investment belongs and it does not report to GRESB, then we estimate the emissions based on a generic average based on all our real estate investments that do report to GRESB.

The calculation covers the direct and indirect emissions from operations (scopes 1 and 2) and the energy consumption of tenants (downstream scope 3). GRESB provides information about the total carbon emissions of a real estate investment (scopes 1, 2 and 3). For that reason, it is not possible to report specifically on the scope 3 emissions of our real estate portfolio.

Private equity

For private equity, APG invests through external managers in a large number of unlisted companies. In this asset class, fundamental data and information on carbon emissions are very limited. APG estimates the carbon footprint of the private equity portfolio using sector averages derived from the listed equities universe.

To measure the carbon footprint of the private equity portfolio, we use the position in sectors in this portfolio, combined with sector averages of the listed equity portfolio, and an estimate of the allocation factor. An adjustment is included in the calculation to account for the difference in leverage between the capital structure of listed companies and private equity companies. This is related to the fact that private equity is generally financed with more debt than listed companies. Therefore, we multiply the debt of the listed companies by a leverage factor of 1.2.

The calculation of the carbon footprint of the private equity portfolio is thus based on rough assumptions in terms of carbon emissions and fundamental data (e.g. revenue and enterprise value). The carbon footprint figure for the private equity portfolio is therefore of lower quality than that of other asset classes.

Reducing our carbon footprint

All our pension fund clients have a target for reducing the carbon footprint of their listed equity portfolio. Since the reference year 2015, the carbon footprint of the equity portfolio that APG manages on behalf of its pension fund clients has decreased by 48%. There is no target yet for the other asset classes.

In line with the agreements in the Climate Commitment, in 2022 our pension fund clients will announce climate targets for 2030.

Difference between measuring and reducing the carbon footprint

The objectives and requirements for a targeted reduction in the carbon footprint of listed shares are different to those required for measuring the carbon footprint. Therefore, the methodologies also differ. Because APG uses different methods, there may be a difference between the carbon footprint figure and the figure our portfolio managers use internally as a target to reduce the footprint of the portfolios.

	Measuring	Reducing
Main requirements	• Offer transparency to external stakeholders about the carbon footprint • Easy to understand and explain to external stakeholders • Comparability of carbon footprint with other financial institutions • Compliance with external standards and regulations	• The option to integrate data into the investment process; this requires the data to be available on a daily basis for the portfolio managers • Stability of data points to avoid unnecessary impact and turnover in the portfolio • External factors that we have no influence on as an investor must have no impact on the carbon footprint
Data points	• Total carbon footprint (tCO_2e) • Relative carbon footprint (tCO_2e /€ millions)	• Reduction percentage of the relative carbon (tCO_2e /€ millions normalized invested value) with respect to reference date (March 2015)
Allocation factor	• Total APG investments / Total capital (enterprise value including cash)	• Total APG investments / market capitalization (only shares)
Corrections applied	• None	• Constant division of portfolio between developed and emerging market with respect to reference date • Invested capital expressed in relative carbon footprint corrected for fluctuations in share prices, so that rising or falling prices have no influence
Data	• Based on portfolio of December 31	• Based on portfolio of March 31 (after reporting year)
Standard	• PCAF-Global	• APG method

Price inflation or fluctuating exchange rates can cause the footprint used by portfolio managers in the management of their portfolios to decrease by more than the footprint in which these effects are corrected. The opposite is also possible.[10] This shows how important it is for portfolio managers to use indicators that are not affected by external variables. APG has therefore been correcting for effects such as price inflation since 2015. Using this relative carbon footprint has also led to an absolute reduction of the carbon footprint of the listed equity portfolio since 2015.

10 See for example De Nederlandsche Bank, ‘Misleading footprints, Inflation and exchange rate effects in relative carbon disclosure metrics’

3: Acronyms

ANET	ABP Netherlands Energy Transition Fund; fund established in 2018, specifically designed for investments in relatively small projects and companies that focus on innovative solutions to the climate problem
CA100+	Initiative of investors, including APG, to put pressure on the 167 companies that emit the most carbon worldwide
CDP	Carbon Disclosure Project; international non-profit organization that aims to improve the way companies disclose their environmental impact
CHRB	Corporate Human Rights Benchmark; benchmark established in 2017 that compares the human rights policies of companies in the clothing, commodity, ICT, and automotive industries
CIP	Committee on Investment Proposals; APG's investment committee that approves major investments with a long investment horizon
CO_2	Carbon dioxide; a greenhouse gas
CO_2e	CO_2 equivalent; unit for measuring the greenhouse effect of CO_2, nitrous oxide (N_2O), methane (CH_4), and fluorinated gases: one kilogram of CO_2 equivalent has the same greenhouse effect of 1 kilogram of CO_2
CRREM	Carbon Risk Real Estate Monitor; global measurement method for determining whether a building meets the objective of the Paris Climate Agreement
ESG	Environmental, Social, and Governance; issues addressed in responsible investing
GRESB	Global Real Estate Sustainability Benchmark; organization set up by APG, in collaboration with other parties, which compares the sustainability performance of real estate funds
GRIG	Global Responsible Investment and Governance Team; APG experts on sustainability and good corporate governance
IEA	International Energy Agency
IIGCC	Institutional Investors Group on Climate Change
IMVB	Internationaal Maatschappelijk Verantwoord Beleggen (International Socially Responsible Investing)
IPCC	Intergovernmental Panel on Climate Change; international climate panel of the United Nations
ND-GAIN	Notre Dame Global Adaptation Initiative; ND-GAIN publishes a ranking of 177 countries in terms of climate adaptation – APG uses indicators from ND-GAIN to determine the physical climate risk of a country
NZAM	Net Zero Asset Managers initiative; initiative of international asset managers committed to a climate-neutral investment portfolio by 2050 or earlier
NZIF	Net Zero Investment Framework; framework that offers investors practical tools to align investment portfolios with the stipulations in the Paris Agreement
OECD	Organisation for Economic Co-operation and Development
PBAF	Partnership for Biodiversity Accounting Professionals; alliance of financial institutions developing a methodology for measuring and reporting the impact of their investments on biodiversity
PCAF	Partnership for Carbon Accounting Financials; global standard for reporting on the carbon footprint of loans and investments
PLWF	Platform Living Wage Financials; partnership of financial institutions that encourage companies in which they invest to provide a living wage
PRI	Principles for Responsible Investing; worldwide association of over 3,800 pension funds, asset managers, and companies that want to promote responsible investing
SBTi	Science-Based Targets initiative; partnership of, among others, CDP and the United Nations Global Compact – over 1,000 companies have joined this to set a science-based climate target
SDG	Sustainable Development Goal; development goal set by the United Nations to make the world a more sustainable place by 2030
SDI	Sustainable Development Investment; an investment that is attractive from a financial perspective and contributes to achieving the Sustainable Development Goals
SFDR	Sustainable Finance Disclosure Regulation; EU law laying down the requirements for pension funds' reporting on sustainability of their investments
SLBs	Sustainability-linked bonds; bonds whereby the issuer promises to pay investors additional interest if predetermined sustainable goals are not achieved
SRD II	Shareholder Rights Directive II; European directive for promoting shareholder involvement in European publicly listed companies
TCFD	Task Force on Climate-related Financial Disclosures; working group led by Michael Bloomberg, which in 2017 issued a report on how companies and funds can best report on climate change
TNFD	Taskforce on Nature-related Financial Disclosures
UNGP	UN Guiding Principles on Business and Human Rights
VBDO	Dutch Association of Investors for Sustainable Development