

# How do we measure the CO<sub>2</sub> footprint of our investments?

**June 2024** 

CO<sub>2</sub> emissions are a major contributor to global warming. It is therefore imperative to significantly reduce global CO<sub>2</sub> emissions, in line with the Paris Climate Agreement. In this document we explain how APG measures the CO<sub>2</sub> footprint of its investments.

Since 2013, APG has been measuring the CO2 footprint of its investments in listed equities. As part of the Dutch Climate Agreement, pension funds and asset managers have committed to annually disclose the CO2 footprint of relevant investments. APG now discloses the CO2 footprint of its investments in listed equities, credits, sovereign bonds, private equity, real estate, Dutch mortgages, infrastructure, commodities and opportunities. This means

that we report on the CO<sub>2</sub> footprint of 83% (2022: 85%) of the total portfolio.<sup>1</sup> The CO<sub>2</sub> footprint encompasses direct emissions by companies (Scope 1), emissions related to the energy they use (Scope 2), and the indirect emissions of the value chain (Scope 3).

All of our asset management clients have set climate targets for 2030, including a 50% absolute reduction target for the CO2 footprint of the listed equities and credits portfolios.<sup>2</sup>

2 Our largest client, ABP, aims to reduce the CO2
footprint of its entire investment portfolio by 50% by
2030, covering Scope 1, Scope 2, and Scope 3 emissions.

In 2023, we significantly expanded the number of asset classes for which we report the CO2 footprint. In 2022, we reported the CO2 footprint for 57% of the total investment portfolio according to the methodology at that time.

# Calculating the CO<sub>2</sub> footprint

APG calculates the CO2 footprint of relevant asset classes according to the Global GHG Accounting and Reporting Standard for the Financial Industry, developed by PCAF. The CO2 footprint is typically calculated based on company positions as of December 31, 2023, with only a few exceptions. Further details can be found in the section titled 'Considerations by asset class'.

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For the 2023 calculation, the CO2 footprint is primarily based on company emissions for the financial year 2022. In instances where this data is not yet available, estimates are derived from emission factors from previous years. This is due to the lag time in the availability of emissions reported by companies, which involves processes such as data provision and verification.

#### **Scope of relevant investments**

APG aims to determine the CO<sub>2</sub> emissions (Scope 1, 2, and 3) of all relevant investments. For measuring and reporting the CO<sub>2</sub> footprint of our investments, we adhere to the

# Guidelines of the Commitment of the financial sector to the Dutch Climate Agreement

(henceforth: 'Guidelines'). The core principle of the Guidelines is that all financing and investments are relevant, except for those with negligible CO<sub>2</sub> emissions. In accordance with the Guidelines, we consider all investments relevant, except for the asset classes hedge funds and overlay. In these asset classes we mainly invest in derivative financial products, which generally have a limited climate impact.<sup>3</sup>

Which assets are relevant for the CO<sub>2</sub> footprint?

APG reports the CO<sub>2</sub> footprint of all asset classes for which the Guidelines specify that financial institutions can currently measure and report them in accordance with



<sup>3</sup> The Guidelines indicate that financial institutions typically give lower priority to reporting the CO2 footprint of cash and derivatives because their climate impact is limited and there is no available PCAF standard.

internationally recognized agreements: listed equities, credits, sovereign bonds, real estate and Dutch mortgages. Additionally, we report the CO<sub>2</sub> footprint of the asset classes private equity, infrastructure, commodities and opportunities.

Within these asset classes, we consider individual investments relevant to the CO2 footprint if there is ownership within the capital structure and we can determine the CO2 footprint. Cash (no CO2 footprint) and derivatives (no ownership within the capital structure) are deemed non-relevant investments. Consequently, cash and/or derivatives within a relevant asset class are excluded from the CO2 footprint calculation.

# Which assets are relevant for the CO<sub>2</sub> footprint?

APG reports on the CO2 footprint of 83% of the total investment portfolio (2022: 85%). The investments for which no CO2 footprint is reported include non-relevant asset classes (hedge funds and overlay) as well as non-relevant products (cash and derivatives) within relevant asset classes. Of the total assets in relevant products, within the relevant asset classes, 98% have their CO2 footprint reported.

Asset class	asset class as % of total portfolio	% of asset class covered
Equity developed	20%	100%
Equity emerging	6%	99%
Government bonds	8%	100%
Long term government bonds	12%	100%
Fixed income treasuries	2%	100%
Emerging markets debt	6%	100%
Inflation-linked debt	<1%	100%
Credits	12%	99%
Dutch mortgages	<1%	77%
Private equity	9%	91%
Real estate	11%	99%
Infrastructure	5%	98%
Commodities	5%	82%
Opportunities	<1%	23%
Total relevant asset classes	96%	98%
Hedge funds	<2%	-
Overlay	<3%	-
Total non-relevant asset classes	4%	-

Measuring the CO2 footprint of all investments we consider relevant is challenging, mainly due to the paucity of high-quality data in some cases. APG is actively involved in initiatives to improve the availability and quality of CO2 emissions data. Despite these challenges, we have been able to expand and improve our CO2 footprint reporting in 2023:

- For the first time, infrastructure, Dutch mortgages, and opportunities are included in the CO<sub>2</sub> footprint reporting.
- For the first time, we are measuring the CO2 footprint of sovereign bonds according to

the PCAF standard released in 2022.

• For the first time, we are reporting Scope 3 emissions for all relevant investments; in previous years, this was limited to investments in specific sectors.

Based on these expansions and improvements, we have recalculated the CO<sub>2</sub> footprint of our portfolio for 2022. The same calculation methodology and data sources were used, allowing for better comparison over time.

# CO2 footprint (Scope 1 & 2/Scope 3) per asset class in 2022 and 2023

In the table below, the 2023 figures are in black and the comparative figures for 2022 are in grey.

		Scope 1 & 2		Scope 3		
Asset class	Total assets CO2 footprint calculated (€ mln)	Absolute CO2 footprint (tCO2e)	Relative CO2 footprint (†CO2e/€ mln)	Absolute CO2 footprint (tCO2e)	Relative CO2 footprint (tCO2e/€ mln)	
Equity developed	120,400	3,485,991	29	54,546,993	453	
	108,330	3,777,001	35	39,791,192	367	
Equity emerging	35,485	4,038,729	114	28,067,584	791	
	35,917	2,099,647	58	13,463,049	375	
Credits	53,567	3,976,173	74	24,562,807	459	
	52,695	3,850,460	73	17,708,049	336	
Dutch mortgages	4,012	26,972	7	-	-	
	-	-	-	-	-	

Private equity	45,639	1,194,405	26	11,917,609	261
	41,998	1,091,828	26	9,001,830	214
Real estate	53,922	519,931	10	3,844,737	71
	54,202	1,351,798	25	3,127,455	58
Infrastructure	25,306	1,899,240	75	2,070,807	82
	21,501	950,427	44	2,039,754	95
Commodities	2,836	188,258	66	2,551,282	900
	2,449	197,689	81	2,508,019	1,024
Opportunities	89	402	4	2,495	28
	46	329	7	1,622	35
Total company-related	341,256	15,330,101	45	127,564,314	374
asset classes	317,138	13,319,179	42	87,640,970	276
Government bonds	32,616	7,064,730	217	3,379,026	104
	0	-	-	-	-
Long-term government	65,556	13,833,322	211	7,039,372	107
bonds	0	-	-	-	-
Fixed income treasuries	10,320	1,844,827	179	1,275,710	124
	101,694	22,062,439	217	11,567,769	114
Emerging markets debt	30,626	10,419,248	340	2,479,294	81
	30,366	12,448,918	410	2,550,422	84
Inflation-linked debt	114	18,724	165	11,475	101
	102	16,955	166	11,045	108
Total country-related	139,231	33,180,851	238	14,184,877	102
asset classes	132,162	34,528,312	261	14,129,236	107
Total portfolio	480,487	48,500,953	101	141,749,192	295
	449,301	47,847,492	106	101,770,205	227

# CO2 footprint (Scope 1 & 2/Scope 3) sector breakdown in 2023

In accordance with the PCAF standard, we also report the CO2 footprint of various sectors. The table below displays these for investments in companies (such as listed equities, credits and private equity). Investments that cannot be assigned to a specific sector are not included.

		Scope 1 & 2		Scope 3		
	Total assets CO2 footprint calculated (€ mln)	Absolute CO2 footprint (tCO2e)	Relative CO2 footprint (†CO2e/€ mln)	Absolute CO2 footprint (tCO2e)	Relative CO2 footprint (tCO2e/€ mln)	
Communication services	23,567	175,122	7	1,459,521	62	
Consumer discretionary	24,341	541,155	22	18,990,943	780	
Consumer staples	15,191	577,968	38	5,796,232	382	
Energy	3,388	597,303	176	5,744,314	1,696	
Financials	61,127	158,704	3	20,574,692	337	
Health care	29,372	153,434	5	2,939,551	100	
Industrials	40,242	1,898,162	47	39,881,914	991	
Information technology	54,421	561,100	10	7,860,935	144	
Materials	11,863	3,471,001	293	12,140,835	1,023	
Real estate	58,799	570,951	10	4,411,226	75	
Utilities	18,654	5,980,026	321	7,761,446	416	
Total	340,964	14,684,926	43	127,561,610	374	

#### Summary of measurement methodology

The overview below outlines the method we use to measure the CO<sub>2</sub> footprint of relevant asset classes.

Asset class	Measurement methodology	Primary data vendor
Sovereign bonds	PCAF sovereign debt	ISS ESG
Listed equity	PCAF listed equity and corporate bonds	ISS ESG
Credits	PCAF listed equity and corporate bonds	ISS ESG
Dutch mortgages	PCAF mortgages	data external managers
Private equity	PCAF unlisted equity	sector average capital markets
Commodities	PCAF unlisted equity	data external managers
Opportunities	PCAF unlisted equity	data portfolio companies
Infrastructure	PCAF unlisted equity	GRESB
Real estate	PCAF listed equity and credits and PCAF unlisted equity	ISS ISG (listed) and GRESB (private)

#### **Contribution factor**

To allocate the CO2 emissions of a company or asset to the portfolio, we use a contribution 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' (EVIC) for the total capital of a company or asset. If no data is available, we base our estimate on an industry average.

#### How do we assess data quality

Score	Emission dat	Fundamental data
1 (highest quality)	Emissions data reported by companies (e.g. via CDP, GRESB or sustainability report), verified by a third party, as provided by our data provider.	
2	Emissions data reported by companies (e.g. via CDP, GRESB or sustainability report), verified by a third party, as provided by our data provider. OR High-quality estimate of emissions data based on primary physical activity data of energy consumption (with specific emission factors in relation to primary data).	Invested assets and EVIC are known
3	Average-quality estimate of emission data based on primary physical activity data of production (with specific emission factors in relation to primary data). OR Emissions data reported by the company, extrapolation of total emissions based on shared reporting. OR Data vendor estimate.	Invested assets and EVIC are known
4	Low-quality estimate by APG based on sub-industry average	
5 (lowest quality)	Low-quality estimate by APG based on sub-industry average OR Highly generic proxies of emissions data based on broad (not sector-specific) averages.	Invested assets are known, EVIC is estimated on the basis of sector average or proxy. Invested assets and EVIC are known

#### Data sources

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We rely on data from external providers to calculate the CO2 footprint. Our primary source is the ISS ESG database. Additionally, we incorporate data directly reported by companies and funds, as well as information from the GRESB survey for real estate and infrastructure.

The quality and completeness of the data vary. Therefore, in measuring the CO<sub>2</sub> footprint, we sometimes heavily rely on estimations and sector averages. Consequently, in such cases, the reported CO<sub>2</sub> footprint may not accurately reflect that of the respective investments. The margin of error in estimations for Scope 1 and 2 emissions is usually lower than that for Scope 3 emissions.

We continuously strive to enhance the quality and completeness of the data. Our data providers verify reported emission data from companies. If the data is inconsistent (e.g., significantly higher or lower than sector peers or in previous years) or incomplete (e.g., not applicable to all activities of the company), they resort to estimations. Before utilizing the data to determine the CO2 footprint, we conduct thorough verification. We evaluate the data quality (weighted based on the invested value) according to the method established by PCAF.

For the entire investment portfolio, the weighted data quality score is 2 (2022: 2). However, the data quality may vary significantly across different asset classes, with sovereign bonds scoring 1 and private equity scoring 5.



#### **Scope of emissions**

The CO2 footprint of individual investments is calculated based on the direct and indirect greenhouse gas emissions from their own activities (Scope 1 and 2) and their value chain (Scope 3). These emissions are converted into equivalent tons of CO2 (CO2e) as defined by the Greenhouse Gas Protocol (GHGP).

#### **Challenges with Scope 3 emissions**

To measure the CO2 footprint, APG includes not only the direct emissions from companies (Scope 1 and 2) but also the emissions from the entire value chain (Scope 3). The Greenhouse Gas Protocol (GHGP) distinguishes 15 categories of Scope 3 emissions, divided into 'upstream' (at the beginning of the value chain) and 'downstream' (at the end of the value chain). For a car manufacturer, for example, the emissions from the production of steel for cars are upstream emissions. The emissions caused by driving the car are downstream emissions.

APG aims to measure the Scope 3 emissions for all relevant investments. Including Scope 3 emissions in the carbon footprint calculation brings challenges:

 Fewer companies report their Scope 3 emissions compared to Scope 1 and 2 emissions. Moreover, companies often rely on estimates for Scope 3 emissions. As a result, we are more dependent on assumptions made by our data providers and ourselves. In many sectors, Scope 3 emissions are significantly larger than Scope 1 and 2 emissions, so even small changes in assumptions can greatly impact the reported footprint.

- Companies have the discretion to determine which of the 15 categories of Scope 3 emissions they consider relevant for their CO2 footprint. Consequently, some relevant Scope 3 emissions might not be reported. This variability also complicates the comparison of Scope 3 emissions across companies within the same sector or over different years.
- Since Scope 3 emissions encompass the entire value chain, there is a risk of double counting. Emissions can be part of the value chain of multiple companies in our portfolio and may, therefore, be reported by multiple companies.

Despite these challenges, we include Scope 3 emissions in the calculation of the CO2 footprint of our investments. Our asset manager is actively engaged in initiatives to enhance understanding of Scope 3 emissions and improve methods and data quality.

# **Considerations by** asset class

#### **Sovereign bonds**

PCAF published a standard for calculating the carbon footprint of sovereign bonds at the end of 2022. Based on the PCAF standard, we calculated the carbon footprint of our investments in sovereign bonds for the first time in 2023. The carbon footprint was also determined for 2022 using this standard. In the PCAF standard, emissions from sovereign bonds are defined as follows:

- Scope 1 emissions: emissions from all goods produced within a country.
  - Scope 2 emissions: emissions caused by domestic use of imported electricity, steam, heat, and/or cooling produced abroad.
  - Scope 3 emissions: emissions associated with imported, non-energy-related goods.

The method also significantly differs in terms of the allocation factor from the method used to determine the CO2 footprint of companies. Following the PCAF standard, we attribute emissions to APG based on the total invested value as a percentage of Gross Domestic Product (GDP) of the country issuing the sovereign bond, adjusted for price level (Purchasing Power Parity). The asset class of sovereign bonds also includes investments in government-related institutions (e.g., regional development banks), supranational institutions (e.g., the World Bank), or local governments (provinces, states). Although we consider these investments relevant for CO2 footprint of the total portfolio, they are not included in the calculation. This is because there is currently no PCAF standard for determining the CO2 footprint of such investments. We aim to include these investments in the future when determining the CO2 footprint.

The broad definition of emissions related to investments in sovereign bonds leads to significant overlap with the emissions reported by companies. After all, the emissions caused by products produced within a country (Scope 1) also include emissions attributed to the companies that produced those products. This results in double counting in the CO<sub>2</sub> footprint of the total portfolio. To address this, we separately report a subtotal for 'company-related' asset classes and 'country-related' asset classes.

For sovereign bonds, ISS ESG is the primary source of emission data. ISS ESG bases the data for Scope 1 emissions on information from the United Nations Framework on Climate Change (UNFCCC) and Climate Watch (CAIT). The data for Scope 2 and Scope 3 emissions come from the Organization for Economic Co-operation and Development (OECD). For countries that do not report Scope 2 and Scope 3 emissions to the OECD, an estimate is made. It takes relatively long for emission data from countries to become available. Therefore, these figures are based on a different financial year. Particularly, the figures for Scope 2 and Scope 3 emissions are relatively dated (2018).

PCAF specifically asks financial institutions to report on emissions from land use and consumption emissions (Scope 1, 2, and 3 minus exported emissions). This information is presented in the table below. The emission profiles of developed and emerging markets differ significantly. This difference is partly due to the relatively large production (and associated emissions) in emerging markets and the relatively large consumption (and associated emissions) in developed markets. To highlight these differences, the table distinguishes between developed and emerging markets.

The data quality indicator for sovereign bonds (weighted by invested capital) is 1 (2022: 1). For emerging markets debt, the data quality indicator is 3 (2002: 3).

#### CO2 footprint sovereign bonds (Scope 1, 2 & 3) in 2023

	Total portfolio		Developed markets		Emerging markets	
	Absolute footprint (tCO2e)	Relative footprint (tCO2e / € mln)	Absolute footprint (tCO2e)	Relative footprint (tCO2e / € mln)	Absolute footprint (tCO2e)	Relative footprint (tCO2e / € mln)
Scope 1 (production emissions)	32,926,513	236	22,561,080	208	10,344,869	339
Scope 2	254,339	2	200,524	2	53,743	2
Scope 3	14,184,877	102	11,705,583	108	2,474,288	81
Total Scope 1, 2 & 3	47,365,730	340	34,467,187	317	12,872,900	422
Consumption emissions	35,969,415	258	25,999,987	239	9,948,193	326
Emissions related to land use	185,551	1	- 1,335,655	-12	1,500,915	49

#### **Listed equities**

The availability of data on listed equities is generally good, especially for companies in CO2 intensive sectors in developed markets. Nevertheless, data provider estimates play an important role, especially for smaller companies and companies in emerging markets.

The data quality indicator for listed equity (weighted by invested capital) is 2 (2022: 2).

#### Credits

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

A significant proportion of our investments in corporate bonds are green bonds. The proceeds of these bonds are ringfenced for specific sustainable purposes. By investing in green bonds, we can contribute directly to greening projects, including those of companies that are relatively CO2 intensive. An example is an electricity company that partially depends on fossil fuels to produce electricity but issues a green bond to invest in renewable energy generation. This relates primarily to green bonds that contribute to SDG 7: Affordable and clean energy.

The PCAF standard does not specify how to measure the CO<sub>2</sub> footprint of green bond

investments. We include our green bond investments in the calculation of the CO<sub>2</sub> footprint based on the emissions of the entire company. These emissions are potentially much higher than the CO<sub>2</sub> footprint of the specific projects financed with the proceeds of the green bond. As a result, the CO<sub>2</sub> footprint of our credits portfolio is likely to be overestimated.

In addition to corporate bonds, the credits portfolio also includes securitized investments (e.g. mortage-backed securities). The CO<sub>2</sub> emissions of these investments are estimated on the basis of data on the issuer (e.g. a bank). This allows us to include a larger part of the portfolio in the CO<sub>2</sub> footprint calculation. To calculate the CO<sub>2</sub> footprint of our credits portfolio, we use CO2 emission data and fundamental data (e.g. enterprise value and revenue). If this information is not available for a specific company, we use data on the parent company. The parent company may not be fully representative of the emission profile of the company in which we invest. If no fundamental data is available, we use an estimate based on a sector average.

The data quality indicator for credits (weighted by invested capital) is 3 (2022: 3).

#### **Dutch mortgages**

APG invests in two specialized providers of Dutch mortgages. These external providers calculate the CO2 footprint of the Dutch mortgage portfolio in accordance with the PCAF standard for mortgages. This calculation is based on the energy label of the property, floor area, and the average energy consumption.

The data quality indicator for Dutch mortgages (weighted by invested capital) is 3 (2022: not applicable).

#### **Private equity**

For private equity, APG invests through external managers in a large number of unlisted companies, where fundamental data and information on CO<sub>2</sub> emissions are typically very limited. APG estimates the CO<sub>2</sub> footprint of the private equity portfolio using sector averages derived from the listed equity and credits universe.

To measure the CO<sub>2</sub> footprint of the private equity portfolio, we use the sector positions within this portfolio. Based on our listed equity and credits portfolios, we determine the average CO<sub>2</sub> intensity (emissions relative to revenue) and the average ratio of revenue to EVIC per sector. Using this information, we estimate the CO2 footprint per invested euro for each sector within the private equity portfolio. This means that CO2 emissions in the private equity portfolio are estimated based on the same data source used to determine the CO2 footprint of listed equity and credits.

An adjustment is made to account for the difference in leverage between the capital structure of listed companies and private equity companies. This is due to the fact that private equity is generally financed with more debt than companies in public markets. Therefore, we multiply the debt of listed companies by a leverage factor of 1.2.

The calculation of the CO<sub>2</sub> footprint for the private equity portfolio is thus based on rough assumptions in terms of both emissions and fundamental data (e.g. revenue and enterprise value). Consequently, the CO<sub>2</sub> footprint figure for the private equity portfolio is of lower quality than that of other asset classes.

The data quality indicator for private equity (weighted by invested capital) is 5 (2022: 5).

#### **Commodities**

APG invests in commodity derivatives contracts and commodity companies. Since derivatives do not involve ownership within the capital structure, we only consider direct investments in commodity companies as relevant for determining the CO<sub>2</sub> footprint. We invest directly in companies active in forestry and agriculture though funds managed by external asset managers. These external managers provide financial data and emissions data directly from the companies in their portfolio. If a specific investment does not report emissions data, we estimate emissions based on a proxy derived from similar investments (e.g. emissions per square meter

The data quality indicator for commodities (weighted by invested capital) is 2 (2022: 2).

#### **Opportunities**

of forest in production).

The asset class opportunities pertains to investments in the ABP Dutch Energy Transition Fund (ANET) and a legacy portfolio of thematic investments. This latter portfolio is being phased out, and the investments are being divested. Through ANET, we invest on behalf of ABP in relatively small and young companies active within the energy transition value chain: generation, storage, distribution, and consumption. These companies provide direct financial data and emissions data for calculating the CO2 footprint. In cases where a company does not provide emissions data, we rely on estimates from a specialized agency. We do not have emissions data for the legacy portfolio.

The data quality indicator for opportunities (weighted by invested capital) is 2 (2022: 2).

#### Infrastructure

The infrastructure portfolio encompasses investments in infrastructure projects such as toll roads, telecom networks, and (renewable) energy generation facilities. The primary source for emissions data for these investments is GRESB. If a company does not report to GRESB and cannot provide any other emissions data, we estimate emissions based on either the GRESB average or a sector average determined by us.

The data quality indicator for infrastructure (weighted by invested capital) is 2 (2022: 2).

#### **Real estate**

The real estate asset class consists of both listed equity investments and private real estate investments. The global PCAF standard for real estate focuses on real estate loans, while our investments are in real estate equity. Therefore, we measure the CO2 footprint of our listed real estate investments using the PCAF methodology for listed equity and corporate bonds; for non-listed real estate, we use the PCAF methodology for unlisted equity.

For listed real estate, ISS ESG is our provider of emissions data, consistent with our approach for equity investments. For nonlisted real estate, GRESB is the primary source of emissions data. For non-listed real estate investments that do not report to GRESB or report only partially, we estimate emissions as follows:

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

Unlike previous years, in 2023 we are reporting a breakdown of the CO2 footprint of real estate investments into Scope 1 and 2 emissions and Scope 3 emissions.

The data quality indicator for real estate (weighted by invested capital) is 2 (2022: 2).

# Steering on the CO<sub>2</sub> footprint of our investments

All of our pension fund clients have a target for reducing the CO<sub>2</sub> footprint of their portfolio. In 2023, the absolute CO<sub>2</sub> footprint of our investments in listed equities and credits was 44% lower (2022: -52%) than in the 2019 baseline year. We aim to reduce the absolute CO<sub>2</sub> footprint (Scope 1 and 2) of our equities and credit portfolios with 50% in 2030 compared to 2019.

The calculation method used for steering on the CO<sub>2</sub> footprint differs in several aspects from the method describe above for CO<sub>2</sub> footprint reporting:

- For steering on the CO2 footprint, we only include Scope 1 and 2 emissions in the calculation; we currently consider the data for Scope 3 emissions insufficiently reliable for steering purposes.
- For green (and sustainable) bonds that contribute to SDG 7, we consider emissions to be zero. This is because, through these instruments, we are directly investing in

projects that contribute to the greening of carbon-intensive companies (e.g. renewable energy projects of an electric utility company). In these cases, the overall company's emissions are not representative of the projects we invest in.

 In determining the CO2 footprint for steering purposes, we use relatively older data. The reduction as of the end of 2023 is based on emissions in the 2021 financial year. The reason is that we 'freeze' the emissions data at the end of the year so that we can steer on it during the reporting year. This also means we cannot use the most recent emission data.

The CO2 footprint for steering purposes is adjusted for withdrawals and deposits. This means that the reduction percentage is not affected by funds deposited or withdrawn from the listed equities and credits portfolios. Between 2019 and 2023, there has been a net withdrawal of funds from these asset classes. As a result, the absolute CO2 footprint has decreased more significantly than would have been the case without these net withdrawals. Without the adjustment described above, the reduction percentage at the end of 2023 would have been -59%. APG wants to be able to monitor how the CO2 footprint of the investment portfolio develops. To do this, we need to compare the CO2 footprint with the footprint at a certain point in the past. In 2023, the CO2 footprint (Scope 1 and 2) for listed equities and credits was calculated. The 2019 baseline was also retroactively calculated using the same method.

Calculating the CO2 footprint retroactively according to the current method presents several challenges. Typically, the 2019 figure is more dependent on estimates that for later years and is therefore less accurate. APG has not yet established a baseline recalculation policy.

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### Glossary

#### Absolute CO<sub>2</sub> footprint

The part of a portfolio company's CO<sub>2</sub> footprint or real asset that can be allocated to APG on the basis of the invested capital.

#### CAIT

Climate Analysis Indicator Tool. A platform providing comprehensive data on greenhouse gas emissions from all sectors of the economy for multiple countries and regions.

#### 18 **CO2e**

Unit for measuring the greenhouse effect of greenhouse gases carbon dioxide, nitrous oxide, methane and fluorinated gases. One kilogram of CO2e is equivalent to the greenhouse effect of 1 kilogram of CO2.

#### GRESB

Global Real Estate Sustainability Benchmark. GRESB publishes data and an annual benchmark on the ESG performance of real estate funds.

#### **ISS ESG**

Institutional Shareholder Services (ISS) database for assessing companies' ESG performance.

#### GHGP

Greenhouse Gas Protocol. Comprehensive standardized framework to measure and measure greenhouse gas emissions from private and public sector operations and value chains.

#### **Green bonds**

Bonds designed to support specific climaterelated or environmental projects.

#### PCAF

Partnership for Carbon Accounting Financials. Cooperation of Dutch and international investors, including APG, who have developed a measurement method for determining the CO2 impact of investments and loans.

#### **Relative CO2 footprint**

The CO<sub>2</sub> footprint per million euros of invested capital (tons of CO<sub>2</sub> equivalent/million euros); This makes comparison with other investors possible.

#### Scope 1

Covers all direct emissions from the activities of an organization or from resources under their control (such as buildings, machines and transportation).

#### Scope 2

Covers emissions related to the consumption of purchased electricity, steam, heat or cooling. These emissions are generated by the energy production facilities that supply these utilities to the reporting organization.

#### Scope 3

Covers all other indirect emissions from activities of the organization which occur from sources that they do not own or control – the emissions from the whole production chain, including clients.

#### SDG's

Sustainable Development Goals. A collection of 17 interlinked goals designed to be a blueprint to achieve a better and more sustainable future for all.

#### **Total CO2 footprint**

Total CO<sub>2</sub> emissions than can be allocated to the investment portfolio.

#### UNFCCC

United Nations Framework Convention on Climate Change. International treaty to address global warming and its impacts. It serves as the foundational framework for global efforts to combat climate change.