Annual Responsible Investment Report

2018

PGGM

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Responsible Investment Highlights 2018

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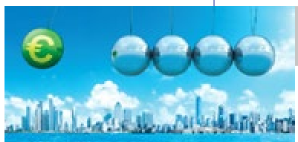
PGGM organises human rights workshop.



Impact Investment initiative: the Dutch water sector.

Commission's action plan on sustainable finance
PGGM, on behalf of the Dutch pension sector, is involved in Brussels with the technical details of the European proposals for a sustainable financing framework.

AGM season: PGGM conducts a fruitful shareholder dialogue on remuneration and good corporate governance.

PGGM joins the Investor Leadership Network (ILN)

Purchase of first sustainability bond.

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Greenpeace campaign against investments in tar sand oil

SDI volume calculated.

GRESB 2018 scores published: PREF improved again compared to last year and outperformed the global GRESB average.

Dutch pension fund agreement on responsible investment signed.

Management Statement

As the administrator for investment funds and the asset manager for pension funds, PGGM Vermogensbeheer B.V. (PGGM) supports its clients in their task of providing a stable and high-quality pension for their participants, now and in the future.

PGGM therefore invests its clients' pension money in a responsible way.
Not just because we see this as our broader societal responsibility or to comply with laws and regulations, but because we are convinced that contributing to a livable world is part of our primary task.

In this report we account for the activities carried out in the field of responsible investment in 2018. Our clients policies and the PGGM's responsible investment framework form the starting point for these activities. Within the PGGM investment funds, there is a clear responsible investment framework. Specific policy requirements of clients can take shape in internally and externally managed mandates. This means that the activities we describe in this report are not always applicable to all clients.

Where we refer to clients in this report we mean both the clients participating in the PGGM funds and the clients for whom we manage mandates. If we state that we invest in a certain portfolio, we always mean that we do so on behalf of our clients.

In compiling the Annual Responsible Investment Report 2018 we have in principle adhered to the international reporting principles of the Global Reporting Initiative (GRI). The 6 principles of the UN Principles for Responsible Investment (PRI) were also used as a reporting guideline.

We have assessed the Annual Responsible Investment Report 2018 and declare that, to the best of our knowledge and belief, the information in this report presents a true and fair view of reality. The Annual Responsible Investment Report 2018 has been assessed and provided with an independent assurance report by KPMG Sustainability, an independent external auditor. The assurance report is attached in Appendix 4.

Zeist, 29 april 2019
Management PGGM Vermogensbeheer B.V.


Eloy Lindeijer


Sylvia Butzke


Arjen Pasma


Bob Rädecker


Frank Roeters van Lennep

Statement of the Supervisory Board

Responsible Investment Report and declare that, to the best of our knowledge and belief, the information in this report presents a true and fair view of reality.

Zeist, 29 April 2019
Supervisory Board of PGGM Vermogensbeheer B.V.

Edwin Velzel, Paul Boomkamp, Roderick Munsters

Foreword

As a pension investor, we aim to achieve an optimal return for our clients while maintaining a responsible risk profile. Within this core task, we pay particular attention to responsible investment based on the conviction that this can reduce risks and offers opportunities to make a good return with investments that contribute to social and environmental solutions. This is especially true in the long period in which the money of our clients is entrusted to us.

Responsible investment is also high on the agenda of regulators and supervisors, and the pressure from stakeholders and participants to achieve sustainable returns is increasing. A confirmation of this development is the Dutch pension fund agreement on responsible investment signed in 2018, including most of our clients. We have been intensively involved in the drafting of the covenant, which sets requirements for the way pension funds and their administrators deal with this responsibility.

On behalf of our clients, we invested € 14.5 billion in solutions for climate, healthcare, food security and water scarcity. Both in private markets and in the listed domain, we made a number of high-profile investments in 2018 to finance the energy transition with long-term pension capital. In the US, for example, we expanded our interests in solar and wind energy generation through an investment in EDF Renewables.

In 2018, for the first time, we identified how our investments contribute to the Sustainable Development Goals (SDGs). At the end of 2017, we invested € 33.8 billion on behalf of our clients in companies and projects that contribute to sustainable development. This is more than 15 percent of the total assets under management. We call these investments SDI: Sustainable Development Investments. The BiO investments are a subset.

In addition to investing for positive impact, we took further steps this year towards incorporating ESG risks and opportunities into our investment decisions. A great deal of attention was devoted to consistently identifying ESG risks in order to be able to improve our management of the resulting insights. PGGM became a member of the Sustainable Accounting Standards Board (SASB) in 2018. This institute has developed a framework to further strengthen this consistency.

The financial impact of climate risks becomes clearer with each passing year. California suffered the most devastating forest fires in its history. For an investor, transparency is essential for the proper management and pricing of such risks. Transparency can also promote energy transition through improved market forces. By the end of 2018, more than 500 businesses, insurers, banks and institutional investors had explicitly committed themselves to the transparency framework of the Taskforce on Climate Related Financial Disclosures (TCFD). The first status report of the TCFD, published in September 2018, confirms that reporting on climate risks and opportunities is improving, although much work remains to be done. PGGM is actively working towards further improvements in climate reporting, for example through the Investor Leadership Network.

‘We want to achieve good financial returns and at the same time have a tangible impact on a sustainable world.’

Eloy Lindeijer *Chief Investment Management*

PGGM plays an active role in various networks and partnerships in order to encourage responsible investment and jointly bring about change. In 2018 we supported a call by IIGCC, urging governments to take concrete measures to achieve the objectives of the Paris climate agreement. We also became affiliated with the collective engagement initiative Climate Action 100+ (CA100+), which is aimed at making the 100 companies with the largest contribution to global greenhouse gas emissions more sustainable. These are just a few of the developments in 2018. These are an incentive for us to continue to work with our clients to achieve a positive impact and the transition to a more sustainable world in 2019 and beyond.

Graphic display results 2018

AUM: € 210,8 billion

Focus area

Climate Change, Pollution and Emissions · Water Scarcity · Food Security · Healthcare · Human Rights · Good Corporate Governance · Stable Financial System

Instruments

Investing in Solutions

Mandate: at least € 20 billion invested in solutions by 2020[1]

€ 14.5 billion

2017 € 13.7 billion

New in 2018: € 2 billion

Area of Focus	Euro's invested	New in 2018	Results	Impact over 2017[3]
Climate Change, Pollution and Emissions	€ 7.7 billion	€ 1.3 billion	Produced **11.6 million MWh** of renewable energy.	The average electricity use of **3.5** million households per year.
Water Scarcity	€ 1.2 billion	€ 405 million	Saved **73 million m³** of water.	The average water consumption of **1.6** million residents in the Netherlands.
Food Security	€ 2.5 billion	€ 109 million	**75,000 tonnes** improvement in return	**3,100** trucks filled with food.
Healthcare	€ 3.0 billion	€ 146 million		**487,000 people** provided with access to good healthcare.
Other	€ 100 million			Impact not measured.

ESG Integration

Mandate: Relative CO_2 footprint of the investment portfolio halved by 2020
Baseline measurement of the equity portfolio as at 31-12-2014:
relative CO_2 footprint = 339 tonnes of CO_2 per million dollars of company turnover.

As at 31-12-2018 the relative CO_2 footprint = **239** tonnes of CO_2 **29,5 %**

Engagement

Dialogue with 291 companies and 8 market parties:
27 results achieved among companies
0 results achieved among market parties

Voting

Voted at 3.877 shareholder meetings.
43.109 votes cast

Legal Proceedings

€ 5.8 million in investment losses recovered.

Exclusions

Total: 114 companies and government bonds of 13 countries.

1 Commissioned by our largest client.
2 For all clients, both in funds and in separate mandates. The amounts concern the invested assets and outstanding commitments.
3 The impact has been measured in relation to the investments as at year-end 2017. Of the € 13.7 billion invested in Investments in Solutions, the impact of € 9.3 billion in investments has been calculated. This represents 68% of the total Investments in Solutions. The impact coverage is not the same for every focus area.
4 On behalf of our largest client.

1 Introduction

As a manager of investment funds and asset manager for pension funds, we support our clients in fulfilling their primary task of providing a sound and stable pension for their participants. We invest the collective pension assets in a cost-efficient way. With the assets entrusted to us, we try to find a good mix between achieving returns and limiting financial risks. Our clients attach great value to responsible investment. We support them in this and consciously take environmental, social and governance (ESG) factors into account in all of our investment decisions. We do this on the basis of our belief that financial and social and environmental returns go hand-in-hand and that ESG factors affect the risk-return characteristics of investments, most certainly in the long-term. We also want to contribute to a liveable, more sustainable world, in which our clients' participants receive their pensions.

1.1 Governance

As a pension investor, our first priority is our clients and their participants. We offer them discerning services and innovative products.[5] Based on the mandate we receive from our clients, PGGM aims to generate the highest possible return and reduce investment risks by managing and investing assets in a responsible manner.

The total assets we under management and advice on behalf of our clients amounted to € 210.8 billion at year-end 2018.[6] Of these total assets, 99.8% fell within the scope of the PGGM funds and the internally and externally managed client mandates that are subject to the PGGM Responsible Investment Implementation Framework (see Appendix 1).[7]

Each client has its own policy with particular emphases in the area of responsible investment. The PGGM funds, in which multiple clients participate, have clear implementation guidelines for responsible investment. These guidelines are discussed at participant meetings, during which the various participants in a PGGM fund have the opportunity to take decisions on investment fund-specific subjects together with PGGM and other participants. The fund management also can take decisions.

'We want to achieve the required financial return and have a positive impact on the world.'

To achieve sound collective decision-making with regard to responsible investment, PGGM and its clients can obtain advice and discuss dilemmas with an independent advisory council, the Advisory Board Responsible Investment (ABRI). The ABRI is composed of experts from both the business community and academia who have extensive experience on responsible investment issues. The members of ABRI are appointed on the recommendation of PGGM's clients and meet once every quarter. In 2018, the ABRI provided advice on topics such as our climate vision and climate-related risks, the exclusion of a number of companies, and cooperation and standardisation with regard to impact investments. More information about ABRI is available on our website.

5 In this report we account for our activities as an asset manager. Read more about how we integrate sustainability into our own business operations in the Annual Reports of PGGM N.V. and PGGM Vermogensbeheer B.V..
6 Since 2017, the total assets under management have decreased from € 218 billion to € 210.8 billion. The main reason for this is that PGGM no longer manages all the assets of Stichting Pensioenfonds Huisartsen (SPHU).
7 Some externally managed client mandates are not subject to the Responsible Investment Implementation Framework. In this report we only report on responsible investment activities that are subject to the PGGM Responsible Investment Implementation Framework, i.e. over 99.8% of the managed assets.

New strategic direction

PGGM N.V. reassessed its strategy in 2018. This had led to a greater focus on our contribution to the health and social sector. The consequences of this will be further elaborated and implemented within Asset Management in 2019. In the context of this new strategy, it is important that we continue to develop as a responsible and long-term investor so that we remain at the forefront of the market in this area. We will do this, for example, by responding to important social and environmental themes such as the energy transition.

1.2 Trends and developments in 2018

Sustainability is increasingly important in the financial sector. The subject is high on the agenda of national and international regulators and supervisors. The way in which companies and investors deal with ESG factors is also the subject of public debate. The pressure from stakeholders and participants to achieve returns in a sustainable manner is increasing. Moreover, the financial sector is expected to account for this by reporting on it in a transparent manner. On the one hand, this growing focus on sustainability is the result of the realisation that the financial risks associated with issues such as the climate are high and must therefore be taken into account by institutional investors. On the other hand, there is a noticeable trend towards further requirements for transparency and reporting in the field of responsible investment and for investors to give more insight into how they deal with the subject.

An important confirmation of this development is the covenant signed in 2018 for International Socially Responsible Investment ('IMVB-covenant') in the pension sector. With the IMVB Pension Funds Covenant, the pension sector is taking a joint step in the area of responsible investment. Pension funds are now expected to have insight into the social and environmental impact of companies in their investment portfolio. When these companies cause a serious negative impact on society or the environment, it is up to pension funds to hold the companies accountable. To this end, pension funds cooperate with the government, trade unions and civil society organisations. A large part of the sector has committed itself to this. The covenant has been signed by 73 pension funds, which together represent € 1,180 billion in invested assets, including the following clients of PGGM: Stichting Pensioenfonds Zorg en Welzijn (PFZW), Stichting Bedrijfstakpensioenfonds voor het Schilders-, Afwerkings- en Glaszetbedrijf (BPF Schilders), Stichting Pensioenfonds voor Huisartsen (SPH), Stichting Pensioenfonds voor de Architectenbureaus and Stichting Algemeen Pensioenfonds Volo pensioen (Volo).

The European Commission is also taking the lead in the area of responsible investment and increasing transparency by companies and investors. For example, the European Occupational Retirement Provision Directive II (IORP II), which requires pension funds to take social and environmental risks into account in their overall risk management and reporting, came into force. The EU Shareholders' Rights Directive (SRD II) will also enter into force. This Directive concerns the responsibilities of institutional investors with regard to sustainability in their investments. Spearheads are voting policy, attention to ESG and remuneration. The above-mentioned European directives are reflected in national regulations. In the Netherlands, Eumedion has published the Dutch Stewardship Code, which includes elements of IORP II and SRD II.

In addition, the European Union is developing an ambitious plan for sustainability in European financial markets. In May 2018, the European Commission published an action plan to make the European financial sector more sustainable and to encourage more funding for climate objectives. As part of this action plan, improvements are being made to reporting on ESG risks and creating a framework for sustainable financing. The framework will define which activities can be labelled as 'green'. In addition, more transparency is needed with regard to 'green' financial products.

PGGM is actively involved in the legislative process and, on behalf of the Dutch pension sector, is making an substantive contribution to the technical implementation of the European proposals in Brussels. When this is added to the resolve of DNB to assign climate risks a place in its role as supervisory authority, a broad framework emerges. The planned measures affect us and our clients in two ways. On the one hand, the requirements for ESG integration will have operational effects. In addition, a more transparent and larger range of green investment products may possibly and hopefully arise. The precise effects cannot be calculated as yet. But it is certain that the trend towards ESG integration and green investments will be anchored in (European) legislation and directives. At the same time, it is a challenge for our clients to maintain an overview in this area of increasing and overlapping legislation and regulations, while maintaining their own identity.

1.3 Developments of our clients

The investment convictions and policies of our clients form the basis of our implementation. Each client has its own policy with particular emphases in the area of responsible investment. Our clients, the pension funds we work for, also made considerable progress in 2018, on which they themselves have now reported.

BFS Schilders rises 9 places in the VBDO rankings

Every year, the Dutch Association of Investors for Sustainable Development (VBDO) investigates the extent to which Dutch pension funds invest sustainably. Compared to last year, BPF Schilders rose 9 places in these rankings. With a score of 3.9 (on a scale of 5), the fund is now in 8th place in the rankings. This is a good indication of the steps the pension fund is taking to further integrate Responsible Investment.

In addition, Schilders has signed both the ‘broad' and the 'deep' route of the IMVB covenant. This means that the pension fund will integrate the OECD guidelines and the UNGPs into its investment portfolio and will also cooperate with the various covenant parties in the area of engagement. Finally, BPF Schilders has decided to exclude tobacco investments from March 2019.

SPH, Pensioenfonds Architectenbureau and Volo pensioen sign the IMVB covenant

Our clients, SHP, Pensioenfonds Architectenbureau and Volo have signed the IMVB covenant for pension funds. With this, they commit to implement the OECD guidelines and UNGPs in their investment portfolio.

PFZW renews its entire policy and instruments for responsible investment

In 2017, PFZW expressed the desire to set out in one policy document what it wishes to achieve by responsible investment, which instruments will be used and the convictions on which this is based. On the basis of this, PGGM and PFZW jointly formulated the integrated policy and instruments for responsible investment in 2018. This policy document provides a framework for further details of responsible investment policy and implementation. This is a precondition for a more effective approach with a greater focus on responsible investment. This new policy framework is easier to explain to participants and stakeholders. The additions and amendments have brought the overarching policy into line with the OECD guidelines and the IMVB covenant signed by PFZW in 2018. PFZW has signed both the "Broad" and the "Deep" track and will actively participate in the learning sessions that are organized around the engagement cases.

At the same time, a start was made on a reassessment of responsible investment. What are the current initiatives and goals? Which instruments contribute most effectively and efficiently to the realisation of these goals? The aim of the reassessment is to further increase the consistency and effectiveness of the policy and instruments for responsible investment.

1.4 Focus areas and instruments

In consultation with clients, PGGM has chosen to focus on a number of areas. The choice of focus areas is based on the subjects that are important to our clients and their participants. In addition, we expect that these themes will affect our clients' investments the most. However, the focus applied means that there are also areas on which PGGM does not specifically focus.
We believe that a clear focus contributes to increasing the impact that we can achieve through our responsible investment activities. By concentrating the resources at our disposal, we want to be able to contribute as much as possible to the chosen focus areas.

Specifically, PGGM wants to reduce the negative aspects of the footprint through its investments for clients and make a positive contribution to the focus areas of Climate change, pollution and emissions, Water scarcity, Food security, Healthcare, the Safeguarding of human rights, Good corporate governance and a Stable financial system at the service of the real economy.[8]

We use a number of instruments for implementing responsible investments: exclusion of companies and government bonds, ESG integration into the screening and monitoring of companies and external managers, engagement, voting, legal proceedings and Investments in Solutions for social and environmental issues. In the following sections, we identify the contribution we have made on behalf of our clients for each instrument.

8 In this report we have not included examples of activities that are linked to the focus area "Stable financial system" because there were no material developments.

2. Investing in Solutions: social and environmental return on top of financial return

The long-term orientation and the size of the assets invested by PGGM create an opportunity to use the driving power of money in the interests of a more liveable and sustainable world. PGGM implements this by investing, in various asset classes, in scalable solutions for (future) social and environmental issues which matter to our clients and their participants or which may have a material impact on the investment portfolio.

2.1 New investments in 2018

There are good reasons to invest in companies that make a positive contribution to society and the environment. First of all, it is precisely in the long term for which capital is built up in the pension sector, that global threats such as climate change and food shortages affect society. This means that participants are highly likely to experience the negative effects, as mentioned, at first hand. Where possible, we want to invest in solutions for such problems. We also notice that regulators are encouraging more responsible investment and that they require pension fund managers to be 'in control', including with regard to such systemic risks and structural trends.

Since 2014, PGGM has therefore been investing on behalf of its clients in solutions for a number of the world's greatest challenges: climate change and environmental pollution, water scarcity, food security and healthcare. These targeted investments - which we call Investing in Solutions (BiO) - not only contribute financially to the returns achieved for our clients, but also create added social and environmental value. Through these investments, our clients contribute to the realisation of several Sustainable Development Goals (SDGs).

The assignment we are implementing for our largest client, PFZW, is to invest at least € 20 billion in solutions by 2020. At the end of 2018, a total of € 14.5 billion had been invested in solutions.

We invest in solutions on the basis of a focused listed equities mandate that we refer to as Investments in Solutions via liquid Equities (BOA). The total assets we have invested in BOA: € 2.8 billion. In addition, we invest in solutions via other investment categories, such as real estate and infrastructure.

'We cannot trade financial return for social and environmental impact. We want both, and we think we can have both.'

Piet Klop *Senior Advisor Responsible Investment*

Investments in solutions 2018

First social bond and sustainability bond purchased

PGGM invests in Schiphol green bond

€ 10 million

Schiphol

SUEZ
PGGM purchased 20% of shares

EDF
50% stake in Renewables

Eisai

Developing Alzheimer medication

Redevco

€ 550 million in commercial real estate

Finding Investments in Solutions: a challenge.

In the world around us, there are social and environmental challenges that require funding. Perhaps the most important one is the energy transition. To stop climate change, a large-scale energy transition is necessary. Major investments are needed to phase out fossil fuels and make energy consumption more sustainable, efficient and financially attractive. Worldwide, an amount of $ 1,000 billion would be needed, also called the 'clean trillion'.

Capital and further research into energy innovation are also needed to achieve this transition. PGGM makes an active contribution to this, on behalf of clients, by looking for investments which can play a role in this. For example, in 2018 we investigated opportunities to invest in new technologies for storing and generating energy using hydrogen.

It is challenging to find the large investments that are necessary. Many innovations are still in their infancy and do not carry enough weight and have too many development risks to invest in. It is therefore uncertain whether there will be sufficient investment opportunities in the coming period to achieve the target of € 20 billion in 2020.

In order to be interesting to our clients, Investments in Solutions are required to contribute adequately to finanacial returns as well as to positive impact. When we come across such investment opportunities, then we want to invest in them. A concrete example of this is the acquisition of a long-term interest in energy company Eneco through a joint venture with Shell, which was announced in early 2019.

We look for ways to tap into such investment opportunities in the Netherlands through cooperation with other investors and the government. For example, we did this through the Dutch Investment Institution (NLII). NLII was discontinued in 2018. There were no additional financing issues in which it could play a significant role. In 2018, we informed Invest-NL of the available options to contribute to the Dutch energy transition together with the government, banks and other pension funds.

PGGM is also looking for ways to effect smaller transactions and to aggregate investments into investable propositions. Read about this on page 15.

The majority of BiO investments contribute to the focus area of Climate change, pollution and emissions. The allocation to this focus area has increased compared to the allocation to other focus areas, mainly because of the increased purchase of green bonds. Read more about green bonds on the next page. During 2018 € 2 billion was invested in solutions. Page 12 shows examples of these investments. Visit our website for a complete overview.

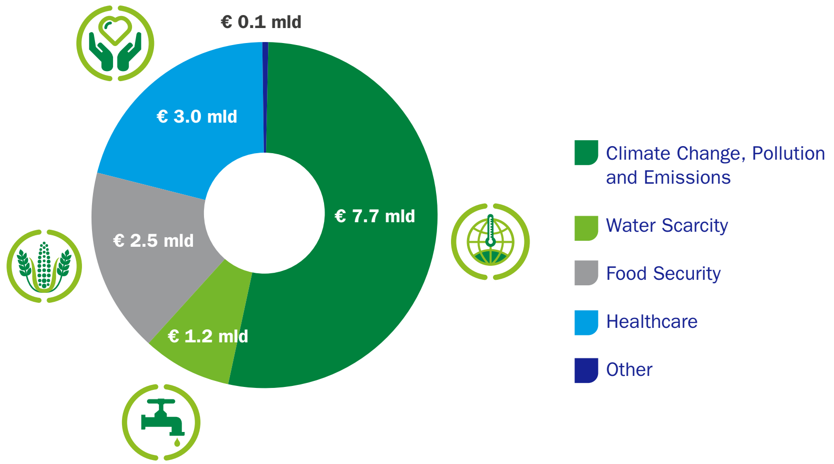


Figure 1

Total euros invested per focus area (billion)

Perspective of the investor - Wilfried Bolt on the poster child of fixed income.

In 2018, green bonds, the poster child of fixed income, lost part of the momentum it had built up in recent years. The spectacular growth of green bonds seems to be declining although the diversity of green bonds has increased. Senior Investment Manager Fixed Income, Wilfried Bolt, explains:

“Different types of bonds are increasingly issued in a green format. For example, in 2018 the Loan Market Association published the Green Loan Principles, allowing the private loan market to take a more sustainable course. Social bonds and sustainability bonds took over a part of the momentum of green bonds. These new categories of green bonds enable us to make a targeted contribution to specific impact themes. Social bond investments contribute positively to addressing social issues such as affordable housing, food security or access to essential necessities of life. Sustainability bonds are a mix of green bonds and social bonds because the proceeds are spent partly on climate objectives and partly on social objectives.

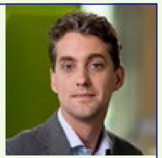
Another reason why growth is stalling could be that many potential issuers are waiting for the European Commission's Sustainable Action Plan. One of the components of this plan is the establishment of a European green bond standard. As well as a taxonomy that indicates which sectors or projects are and are not considered sustainable. PGGM, on behalf of the Dutch pension sector, is a member of the technical working group to provide a framework for this. The results are expected to be presented at the end of 2019.”

PGGM is also involved in market initiatives to encourage CO_2 intensive sectors to issue green bonds, provided that this takes place in line with a credible and sustainable climate strategy. “We think it is particularly important that these polluting companies move towards a more sustainable climate policy, because this is where the greatest gains can be made.”

“Since developments are going fast, we held a theme meeting about green bonds for our clients in September to keep them informed. At this meeting, the Climate Bonds Initiative, Tennet and ourselves discussed the above developments, opportunities and risks of green bonds for both the issuer and investor in an interactive setting. An important point to keep in mind when buying a green bond is whether this green bond actually changes something in the world. If a company or government issues a green bond to finance part of the balance sheet, which they previously financed with a normal bond, without changing their behaviour, it is doubtful whether a green bond contributes to any social or environmental return. However, when the issuing authority does start to operate, report or influence other stakeholders in a more sustainable way, this contributes to both financial return as to social and environmental return.”

In 2018, PGGM purchased various green bonds for both its interest and loan portfolios. These green bonds are part of the 'Investments in Solutions' (BiO) programme. “We have invested in green bonds in France and Belgium, among other countries. Governments play a special role in the climate debate. On the one hand, they have the means to encourage behaviour in the real economy through policies, subsidies and taxes. On the other hand, by issuing green bonds themselves, they can play a pioneering role in the private financial sector. The largest expense underlying the French green bond is a tax refund to homeowners for energy saving measures.” France has calculated that the € 3.2 billion restitution to more than 1.2 million households in 2016 and 2017, will lead to 2.9 million tonnes less CO_2 emissions and € 2.2 billion in cost savings for these households in the period 2015 to 2050.

‘Different types of bonds are increasingly issued in a green format.’



“We do not accept lower financial return for these bonds than traditional bonds. Some Green Bonds have therefore been sold if the valuation is no longer in line with the character of the risk/return. In 2018, PGGM published its green and social bond framework online, in which we explain our view of green bond investments. We follow the ICMA green bond principles, but we also pay extra attention to the ESG policy of the issuer and look at whether the proceeds will be spent on our focus areas of climate change, water scarcity, food security or healthcare. We have avoided green bonds from issuers whose ESG policy is not in line with the objectives of the green bond.”

Perspective of the Investor - Willem Jan Brinkman on the new initiative of private equity.

In 2019, the private equity team will start a new initiative to find investment opportunities within the BiO themes of climate change, water scarcity, food security and healthcare. Willem Jan Brinkman explains:

PGGM has built up a large global portfolio of private equity investments for its clients. At the end of 2018, these amounted to over € 12.5 billion. An important component of the investment strategy is the ambition to invest directly in portfolio companies, so-called co-investments, in addition to investing in funds, together with the fund manager.

"Partly due to the growth of the portfolio, we see that individual investments are increasing. This is in line with developments in the market, where we see an increase in the number and size of large funds. Along with these developments, however, we have also seen that it is becoming increasingly difficult to free up capacity to look at smaller funds and co-investments.

In the area of investments in social and environmental solutions, this is precisely the problem: funds that focus on a particular theme, such as food supply or healthcare, are often smaller than generalist funds without a theme or sector focus. Many fund managers that have a particular sustainability focus are also relatively new. This means that an extra effort and therefore extra capacity is required in order to pay serious attention to this part of the investment universe.

From 2019, part of the private equity team will therefore focus entirely on investments in these smaller thematic funds.

Within the global universe of over 12,000 fund managers, we are looking for possible investments in funds that focus on climate change, water scarcity, food security and healthcare. The aim is to invest a substantial amount in funds and co-investments over the next 3-5 years."

'Through co-investments we want to be able to invest directly in companies that make a positive contribution to solving social problems.'

"This is quite a challenge. In terms of risk and return requirements, the investments are placed on the same level as all other private equity investments, while we are selecting from a smaller universe. It is also important that fund managers comply with our standards in the field of impact measurement. Because these fund managers are often relatively small and/or new, we spend a lot of time researching and getting to know these managers. Through co-investments we want to be able to invest directly in companies that make a positive contribution to solving social problems. As far as we are concerned, this is the best way to put pension money directly to work in society and to achieve a good financial return."

2.2. The social and environmental impact of investments

Asset managers obviously know exactly what the financial performance of their investments is. What is still lacking is solid, consistent and reliable data that provides insight into the social and environmental impact of these investments. In the world of responsible investment, the focus is increasingly shifting towards these results. In addition to the financial return, what is the actual social and/or environmental impact of responsible investment?

It is not enough to state that a certain asset is invested in something for which a positive social and/or environmental contribution is expected. This would only measure good intentions, whereas the actual goal is to determine whether there is actually a positive impact in terms of measurable[9] improvement. Ultimately, it is this element, measurability, that makes an investment an impact investment. It is essential to calculate this impact, both for comprehensible communication of the positive impact of the pension investments and for the credibility of investing with impact. By calculating the social and environmental impact, sustainability can also be taken into account and weighed in decision-making.

9 Our criterion is that companies must measure the impact, or be prepared to do so in the future. In this way we want to encourage the industry to measure and report impact.

Impact of investing in solutions

Focus area	Total	Invested in (non-excl.)	Results (non-excl.)	Impact over 2017 is equivalent to
Investing in climate solutions	**€ 7.7 billion** New in 2018: **€ 1.3 billion**	• **Renewable energy**	Produced **11.6** million MWh of renewable energy.	The average electricity use of **3.5** million households per year.
		• **CO_2 efficient buildings and production**	Avoided **4.9** million tonnes of CO2.	The total CO_2 emissions avoided is equivalent to the average CO_2 emissions of more than **215 thousand** households per year.

Focus area	Total	Invested in (non-excl.)	Results (non-excl.)	Impact over 2017 is equivalent to
Investing in water solutions	**€ 1.2 billion** New in 2018: **€ 405 million**	• **Water purification** • **Water conservation**	Saved **75** million m³ of water.	The average water consumption of **1.6** million residents in the Netherlands.
		• **Drinking water production**	Treated **378** million m³ of wastewater.	The number of litres of purified water is equivalent to the average amount of water consumed by taking **8** billion showers.

Focus area	Total	Invested in (non-excl.)	Results (non-excl.)	Impact over 2017 is equivalent to
Investing in food solutions	**€ 2.5 billion** New in 2018: **€ 109 million**	• **Efficient production** • **Solutions to combat food wastage**	**75,000** tonnes improvement in return.	**3,100** trucks filled with food.

Focus area	Total	Invested in (non-excl.)	Impact over 2017 is equivalent to
Investing in health solutions	**€ 3 billion** New in 2018: **€ 146 million**	• **Medicines** • **Treatments** • **Care homes**	**487,000** people throughout the world had access to healthcare, or benefited from an improved quality of care. **7,100** hospital treatments avoided.

We therefore specifically look for investments that make a substantial and measurable contribution and report annually on the positive impact of these investments.[10] In addition to the financial return, we calculate the impact of these investments.

We use impact data reported by companies and impact data based on impact models for this purpose. In this calculation, we only allocate to our clients that part of the total impact that corresponds to their share in the company or the fund. For a more detailed explanation of how the impact is calculated visit our website. See page 16 for an overview of the impact calculated over 2017.

2.3 Cooperation with academics for better impact calculations

Measuring tangible impact (in absolute units such as kilos of CO_2 emissions avoided or numbers of people with access to good healthcare) is difficult. Mapping out the social and environmental added value resulting from responsible investment is still in its infancy. There are plenty of challenges: very few companies have a good idea of their social and environmental impact, let alone how they can quantify and report on it. This means that very little impact data is available. For this reason, PGGM works closely with academics and other partners to develop methods for this.

Together with the external portfolio manager of BOA, UBS Asset Management, City University of New York, Harvard University, and the University of Wageningen, we have developed an impact assessment model that converts company revenue from solutions into absolute impact. For the time being, we only measure the impact of products and services.

The cooperation with the University of Wageningen focuses on impact modelling in the area of agricultural productivity and food waste. With the world population being expected to approach 9 billion by 2030, it is clear that providing food is a major challenge, especially if we take into account food quality, access to food and resource productivity.

Calculations are made to determine the increase in production through fertiliser and better seed, and the avoidance of waste through improved storage, transport and packaging of food. Important questions that arise here are the opposite effects on climate and water quality. Fertilizer production is highly carbon-intensive and excessive use leads to algae growth in surface water and better packaging materials often means more plastic. It is therefore important to look at the problem from a perspective that encompasses the entire chain.

The impact models we developed were presented to a number of companies in August 2018. They were very interested in our approach towards converting company revenue from solutions into absolute impact. It also became clear that further refinement of the models is needed based on more disaggregated sales figures of the solutions produced (where, to whom?). This is being addressed through intensive engagement with the individual companies. Together we are looking for a way to gain the necessary insight.

'We are happy to lead the charge and hope to demonstrate that mainstream investors can deliver both market-rate returns and a measurable impact.'

Piet Klop *Senior Advisor esponsible Investment*

2.4 Impact Management Project

In terms of impact, progress has also been made on the standardisation front. During 2018, PGGM contributed to the Impact Management Project (IMP), to which more than a thousand funds, managers and advisers are affiliated. The purpose of this partnership is to reach agreement on how we define impact goals and results, and how we measure and manage impact. In this way, PGGM helps its clients to communicate more accurately about the difference their investments make in the real economy and what our role in the process was.

Together with the IMP, we have identified and listed the entire portfolio in terms of social and environmental impact. Read the results of this here.

10 For the calculation of the social and environmental impact of investments, we depend on the impact data reported by companies. As a result, our impact calculation lags one year behind the reference date of the portfolio.

Additionality and impact

As a responsible investor, it is important to identify and list the impact of our investments. But when can we 'claim' that we have had a certain impact? Have we as investors really had a positive or negative effect on the world, or would the same have happened without our financial contribution? As a large institutional investor, this is a relevant question. The Impact Management Project offers a useful framework for this. It distinguishes between the impact of the company and the impact of the capital provider (the investor). It also defines different degrees of impact. The hope is that this will bring clarity about what companies and investors routinely claim as their 'impact'.

The impact of the lender is certainly not 'additional' on secondary markets for shares and bonds: without our investment the companies would probably provide the same products and services (with corresponding impact). In the primary markets for infrastructure and private equity, however, as investors we can be the decisive factor for the success of a project or company. The difference between 'impact alignment' on secondary markets and 'real impact' on primary markets is also something we try to make clear in our communications.

Impact investment...or not?

Although we strive for a positive, preferably additional social and environmental impact with our investments in solutions, both our clients and ourselves as asset manager have the primary task of ensuring a good pension and therefore a good financial return at an acceptable risk. We cannot make concessions to the financial results to be achieved for participants and therefore cannot maximise positive social and environmental impact at the expense of financial return. We therefore want to have a positive social and environmental impact while maintaining market-rate returns.

A great social or environmental need is not necessarily a good investment opportunity. At present, therefore, efforts to identify and list the impact of our clients' investments do not affect our strategic asset allocation: we do not focus on the scope of specific societal results. Measuring the tangible social and environmental impact does, however, enable us to clarify where we have a positive impact and where data is lacking to evaluate it. By doing this, we hope that more investors will see that one thing does not have to rule out the other: we can achieve a market-rate return with impact.

We can also send an important signal to the market when we shift part of the capital to companies with an explicit social and/or environmental contribution. With this we hope to set a good example which others will follow. In addition, what most 'real' impact investors lack is what we (the pension sector) do have: scale.

2.5 Impact Investment Initiative: the Dutch water sector

More than $ 500 billion would be needed annually to achieve water security and flood safety for all.[11] Approximately one third of this enormous capital requirement is covered. Because government budgets and concessional funding by development banks are inadequate, a large part of the capital required will need to be raised by private parties.

This provides opportunities for the pension sector. In particular, there appear to be opportunities for pension capital to work together with technology companies, specialised construction companies and operating companies in order to conclude large projects and/or long-term concessions in the field of drinking water supply, wastewater treatment and industrial water.

Unfortunately, however, the Dutch pension sector and the Dutch water sector operate in isolation from each other instead of reinforcing each other. For this reason, PGGM and the Financieel Dagblad organised the 'Impact Investment Initiative - the Dutch Water Sector' in January 2018, in order to arrive at more investable propositions in the area of water supply and water security. Read more about our position with regard to water in the article 'Water als geld' door Chris Limbach & Piet Klop (pdf).

11 Global Water Intelligence database

The impact of medicinal products

PGGM has carried out two projects to measure the 'social impact' of new medicinal products produced by two listed medical producers, AstraZeneca and Novartis.[12] Both pharmaceutical companies are included in the BOA portfolio, a specially designed impact portfolio of listed companies, aimed at achieving financial return in line with the market. For the water, energy and food sectors, the impact is expressed in terms of tonnes of CO_2 avoided, cubic metres of clean water produced, megawatts of renewable energy produced and tonnes of food produced, respectively. We try to measure this through standards that we develop together with other parties.

Health impact is more complicated to determine. How do you determine whether a pension euro invested in listed pharmaceutical companies, currently a quarter of the total impact mandate, has a positive influence? And which aspects do you look at specifically?

Because this is still an unexplored area, we asked the two pharmaceutical companies whether they could each provide insight into the impact of one of their medicinal products in the Netherlands. At AstraZeneca, this concerned the impact of the new drug Lynparza on the treatment of ovarian cancer in patients with mutation in a specific gene. This is a serious form of cancer that is diagnosed in 1,350 women in the Netherlands every year and from which more than 60% eventually die. The impact study shows that Lynparza extends the period in which the cancer does not develop further after chemotherapy by 14 months. In addition, the use of Lynparza leads to a reduction in total treatment costs of approximately 18% in the first year in any case, compared to the situation in which another medicine is used as a maintenance treatment.

At Novartis this concerned the medicinal product Entresto, which is prescribed for people with chronic heart failure. The impact calculations show that the risk of hospitalisation decreases by 21% when this new medicinal product is used. On average patients live five months longer, with a total length of survival of approximately five years. This medicinal product does not lead to lower costs - Entresto is more expensive than the common drug against which it competes. However, the extra costs of Entresto result in a health gain at a price that is well below the current standard.

In the future we want to measure the impact of more medicinal products, in more countries. It is the first time that an institutional investor has asked large pharmaceutical concerns to measure this kind of impact in this way. The results of the two companies have been validated by an independent party, the institute for Medical Technology Assessment (iMTA), which is part of Erasmus University Rotterdam.

This kills two birds with one stone: pharmaceutical companies, which are currently scrutinised very critically when it comes to their pricing policy, gain experience in formulating their social contribution. And PGGM needs the data to illustrate its basic assumption: financial and social returns can go hand in hand. More insight into this impact across the entire product range of pharmaceutical companies is needed to make pension investments more than making 'money with money'.

12 Novartis was marked as a Global Compact Violator in early 2018 due to allegations of bribery. This raised questions: can a company be a Global Compact Violator and remain part of the BOA impact portfolio at the same time? After extensive internal discussions and research, we decided not to remove the company from the BOA universe and therefore not to remove it from the BOA portfolio. The decisive factor was that we were already invested in the company at the time Novartis was designated by Sustainalytics as a Global Compact Violator, and we were therefore in a good position to address the problem in question - alleged bribery - through engagement. We are now trying to exert our influence directly and bring about a positive change in the governance of the company. We are in close consultation with Novartis and are monitoring the improvements. For more information see page 27.

Featured: Investing in Sustainable Development Goals

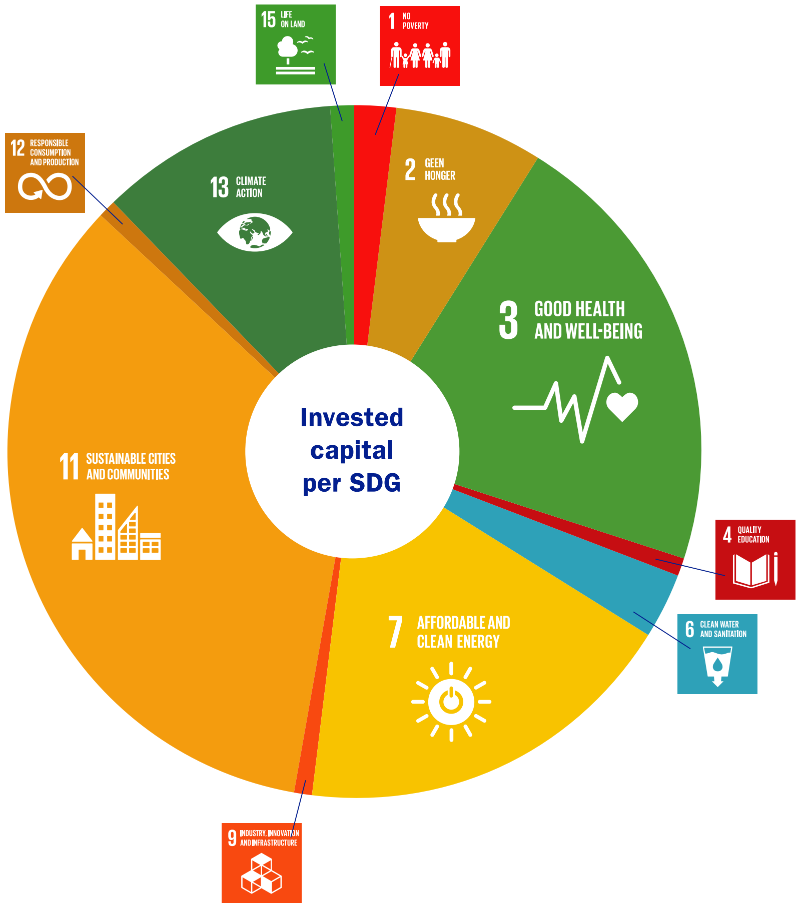
At the end of 2017, on behalf of our clients, we had € 33.8 billion invested in companies and projects that contribute to sustainable development. This was more than 15 percent of the total assets under management at the end of 2017. We call these investments SDI: Sustainable Development Investments. This term is derived from the United Nations' term SDGs, or Sustainable Development Goals.

The financial sector has embraced the SDGs: more and more institutions are reporting on their contributions to the SDGs. But when does a company, product or service contribute to an SDG? As yet, no standard has been formulated for this. Standards facilitate verifiability and, consequently, reliability. In addition, a standard ensures that the contributions of financial institutions to sustainable development are comparable. Finally, standards allow companies to better understand and act on investors' expectations. For these reasons, in 2017 APG and PGGM jointly developed a framework for investments that contribute to sustainable development: Sustainable Development Investments (SDI).

The SDGs were taken as the starting point for this framework, because they form a common language for talking about sustainable development. The framework consists of a definition of Sustainable Development Investments and a taxonomy. Taxonomy is a classification system of investable products and services for sustainable development per SDG. The definition states that SDIs are investments in companies or projects that generate a positive impact on the environment and society through their products and services, or because they are recognised as leaders in sustainable development through their business operations. At the same time, these investments meet the risk return requirements.

SDI: results of the first measurement

In 2018, we identified and listed the portfolio's contribution to sustainable development goals for the first time.[13] At the end of 2017, we had invested € 33.8 billion on behalf of our clients in companies and projects that contribute to sustainable development. This was 15 percent of the total assets under management at the end of 2017. By providing this insight, we offer our clients the opportunity to determine to what extent they want to and are able to increase their contribution to the development goals. Moreover, this makes the degree of 'SDG alignment' of the portfolio more comparable with that of other financial institutions. However, the results are not yet entirely comparable with our peers who also use SDI taxonomy: the taxonomy still leaves too much room for interpretation. PGGM meets regularly with its Dutch peers to further harmonise the classification methods. The results per SDG are shown below (invested capital per SDG). For each SDG, an example is given of a company or project that contributes to achieving this development goal. Click on the plus sign to see the examples.



13 Invested capital per SDG SDI calculation is performed on 98% of the portfolio.

Continuation **Featured: Investing in Sustainable Development Goals**

The distinction between BiO and SDI

As explained earlier in this report, PGGM invests in solutions for four social and environmental themes: these are the so-called BiOs. So why are we now looking at SDIs as well as BiOs? The 4 BiO themes correspond to 5 of the 17 development goals. BiO is a subset of SDI. PGGM's clients also want to know how they contribute to the other SDGs. In this way, future contributions to multiple or different social and environmental themes can optionally be managed. PGGM has therefore also identified and listed the contribution to these other SDGs. We call the total package SDI.

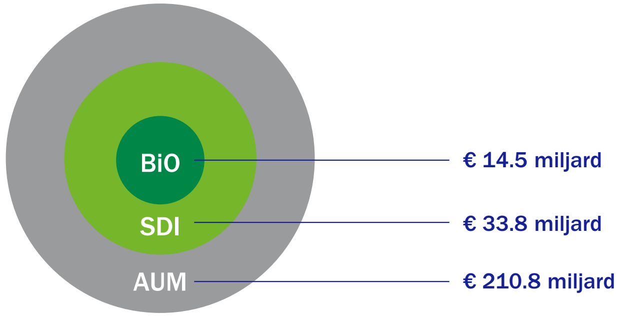


Figure 2
AUM, SDI, BiO ratio

There are more distinguishing features between BiO and SDI: for BiO investments we first measure the impact generated by the company or project, i.e.: how much renewable energy is generated, how many people are helped with medicinal products, etc. We do not do this for SDIs. Here we only look at whether the investment is in line with the SDGs. In addition, the SDI theme is broader than the BiO theme: for example, for the BiO theme of healthcare we only look at the 20 most deadly diseases, while for SDI we consider the treatment of many more diseases as contributing to the development goal for health.

Dilemmas and challenges of SDI classification

We faced a number of dilemmas and challenges when identifying and listing the contribution of the investments to the SDGs. The biggest challenge was the lack of data. Many companies do not yet report on how they contribute to sustainable development. Few companies report on the sales percentages of their sustainable products and services. We use these figures to determine what percentage of our investment in the company can be counted as SDI.[14] Another major challenge is to compare positive and negative contributions: a company can contribute to one SDG through its products and services, but damage another SDG at the same time. For example, artificial fertiliser contributes to food security (SDG2) because it ensures more efficient food production. But at the same time, the production and use of artificial fertilisers cause a lot of CO_2 emissions and are therefore a negative contribution to the climate (SDG7). What carries more weight? In this first SDI baseline measurement, we have not always included the negative impact in the decisions. This is our aim for future SDI measurements.

It is often difficult for investors to know the context in which a company operates, the chain and the end user. Although we have taken serious controversy into account in the SDI classification, these do not expose all wrongdoing. A final challenge worth mentioning is that, fortunately, the world of sustainable solutions develops quickly. Through innovation and regulation, products and services that we considered sustainable yesterday can be replaced by a better alternative today. Or products that are unknown today can be on the market as a sustainable solution tomorrow.[15]

14 As the availability of sustainability data often lags behind that of financial data, both in quantity and quality, our SDI calculation is hedged by some uncertainty.
15 Because of these and other dilemmas and challenges, the SDI volume we report for 2018 is not definitive. This means that the volume may change significantly in the coming years, for example due to technological developments and improvements in the availability of data. Or by a better method of analysis, on which we will continue to work in the coming years.

3. Active ownership: making our voice heard

As an investor with a long-term horizon, PGGM holds shares in approximately 3,500 listed companies. We actively use our influence as a shareholder to realise improvements in the area of ESG in order to contribute to the quality, sustainability and continuity of companies and markets in this way. We do this based on the vision that this ultimately contributes to a better financial and social and environmental return on the investments for our clients.

3.1 Engagement with companies and market parties

We hold companies and market parties to account for their policy and activities on behalf of our clients. Through this dialogue, we attempt to achieve ESG-related improvements. Shareholder engagement requires stamina and high-quality knowledge in order to be able to conduct a fruitful dialogue with corporate management and to exert maximum influence. PGGM has invested in this for years, and has achieved results. We believe, and we are not alone in this, that companies benefit from critical, active shareholders who keep companies up to the mark and encourage them to focus more on sustainability.

Due to the large number of companies in which PGGM invests, we are required to make choices about the companies with which we can conduct an active dialogue. There are obviously too many companies to be able to talk to them all effectively. We strive for focus in our engagement activities. To this end, in consultation with our clients, we have drawn up engagement programmes that focus on components within the themes: Climate change, pollution and emissions, Water scarcity, Healthcare, Human rights safeguards, Good corporate governance and a Stable financial system.

We make a selection based on a number of criteria. The first selection criterion is the relevance for our clients and their participants. The second criterion is the role that PGGM can play as an investor. Do we have the knowledge? We also look at whether the engagement can actually have an impact - is the company open to discussion? A larger shareholder interest means more control and therefore more opportunity to influence a company. The last criterion concerns the expected contribution to long-term value creation for the company, the shareholders and society at large. Based on these criteria, engagement projects are defined based on data and research from external suppliers. For each engagement project, we set goals and timelines in advance. We measure progress on a quarterly basis.

'As an institutional investor, we believe we have a responsibility to help companies move in the right direction. As an asset manager we want to show a sustainable and explainable return and exert positive social and environmental influence.'

Sevinc Acar *Senior Investment Manager Fixed Income*

Minimum shareholding requirements

Being an active ownership isn't optional: minimum requirements are increasingly being imposed on institutional investors worldwide in both legislation and regulations. For PGGM and its clients these minimum requirements are laid down in the applicable Dutch legislation and regulations and in the Dutch corporate governance code. We aim to set an example to other investors, including institutional investors, through our behaviour as an active shareholder in all the markets in which we invest.

In implementing active share ownership, PGGM adheres to the standards and principles of various organisations, such as:

- the active share ownership principle of the Principles for Responsible Investment (PRI)
- the Eumedion Best Practices for engaged shareholders
- the principles of the UN Global Compact
- the Guidelines for Multinational Enterprises of the Organisation for Economic Cooperation and Development (OECD) and the United Nations Guiding Principles on Business and Human Rights (UNGP)

Together we stand stronger

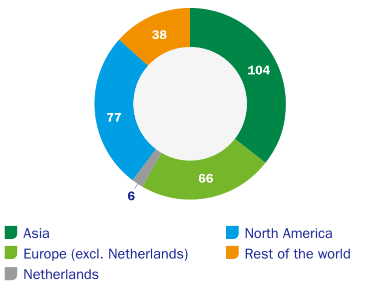
Dialogue with companies can be a powerful means of bringing about concrete changes in companies. Especially if we do this together with others. PGGM aims to enter into coalitions with other institutional investors and market parties in order to engage in dialogue with listed companies. This will increase our impact because the total share in the company is larger.

For example, in 2018 PGGM worked with a group of large institutional investors from the Netherlands, Great Britain and the United States with a combined invested capital of $ 2.5 billion. Within this coalition, we hold companies accountable for the composition of the board. We ask companies to move towards more diversity in terms of gender, age, skills, experience and background. In 2018, PGGM also brought a coalition of large European and American institutional investors together to enter into joint discussions with companies in portfolios that awarded the most excessive remuneration.

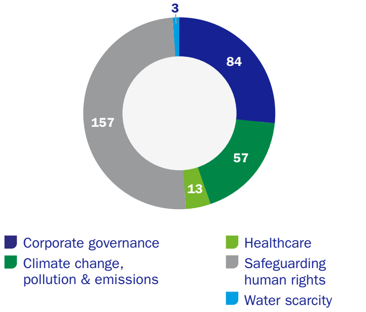
Results in 2018

Dialogue alone is not enough; it is also important to systematically monitor the results. Together with Global Engagement Services (GES)[16], our engagement service provider to whom we have outsourced part of our engagement activities, we have been able to recorde 27 cases of the 291 companies with which we engaged, in which the policies and / or working methods of a company changed after active engagement. Often (especially in the case of media attention), several stakeholders (such as NGOs and other investors) influence the behaviour of a company. These changes cannot be attributed solely to our efforts.

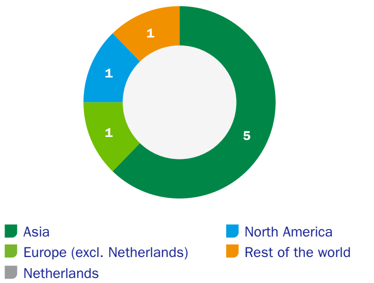
Engagement Activities with Companies by Region in 2018:



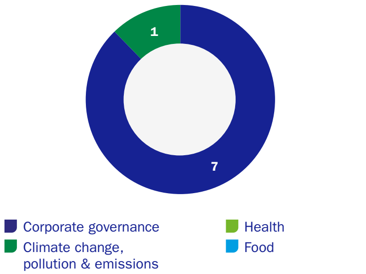
Engagement Activities with Companies by focus area in 2018:



Engagement activities with market parties by Region in 2018:



Engagement activities with market parties by focus area in 2018:



16 At the start of 2019, GES was acquired by Sustainalytics.

Company engagement in 2018

In our dialogue with companies, we focus on companies where we discern ESG opportunities and risks. This can vary from setting up a strategy on access to healthcare in developing countries to implementing sound human rights policies. The focus is on companies that have an impact in the region, sector or chain.

Commitment to good corporate governance

In the markets in which we invest on behalf of our clients, we monitor whether companies are managed efficiently and responsibly and whether they account for their policies. We engage in dialogue with companies when we see that improvements are possible or necessary in corporate governance. For example, in 2018, we spoke to various companies about their remuneration policies. We also spoke to ING.

In March 2018, ING announced its intention to increase the CEO's salary by 50%. Following this announcement, PGGM publicly expressed its opposition. We expect ING, as a systemically important bank, to take its societal role into account. ING has already withdrawn its proposal to increase the remuneration of the CEO. At the AGM in April, together with other investors, we reiterated our concern and insisted that the bank set up an extensive consultation on the remuneration policy. In addition, the lack of diversity at the highest level of the bank was discussed. ING has committed to involving shareholders in a broad consultation.

Engagement with largest CO_2 emitters

In 2018, the collective engagement initiative Climate Action 100+ (CA100+) was launched, which is aimed at making the 100 companies with the largest contribution to global greenhouse gas emissions more sustainable. This concerns both fossil fuel suppliers (upstream) and users (downstream), such as heavy industry and car producers. In mid-2018, the focus area was extended to companies that can make an important contribution to solving climate problems or which could be hit hard by the consequences of climate change (without being at fault). Since its inception, more than 300 investors have joined the initiative.

Within CA100+, PGGM focuses on a few large energy and utility companies and on companies with a relatively high CO_2 intensity. The aim of our engagement activities: resilience and preferably playing a leading role in the energy transition and disclosure according to the framework of the TCFD. The first successes of CA100+ became visible in 2018. For example, in a joint statement with investors, Shell announced that the remuneration of its top management would be partly linked to the achievement of climate targets. Shell was one of the first energy companies to publish a climate report under the TCFD framework and was one of the driving forces behind a report on disclosure by the World Business Council for Sustainable Development.
At other companies, shareholder resolutions are being prepared or are being considered. Thanks to pressure from CA100+, several companies have promised more transparency about lobbying activities and membership of branch organisations.

Working conditions in the agricultural supply chain of the food, drink and retail sector

Human rights, including working conditions, are the focus of one of our seven themes. PGGM and our clients see human rights as a prerequisite for responsible investment. We apply the OECD guidelines for institutional investors and the UNGPs as a guideline for ESG integration in the investment process and we engage with companies where (potential) human rights issues play a role. 2018 was the final year of a collaborative engagement effort, which focused on working conditions in the agricultural supply chain. We engaged with 35 large companies in the food, beverage and retail sectors. The goal was to improve the traceability of purchasing activities and improve supplier relationships as a means of improving working conditions in the global agricultural supply chain.

This engagement project was completed at the end of 2018. We have seen some improvements in the companies we talked to. The availability of complaints mechanisms has increased and the monitoring of working conditions has improved. We have seen good practices in supplier relations, including at Carrefour, which encouraged suppliers to implement corrective actions by offering them long-term sales contracts, larger volumes and early payments. We also see improvements at Tesco. Tesco has identified due diligence focus areas based on a stakeholder meeting. The company frequently reviews these focus areas to ensure that risks are correctly identified. PGGM has asked the company to provide more transparency on complaint mechanisms and suppliers. Tesco has promised to work on this together with a consultant. The company is developing a framework for responding to complaints with the Ethical Trading Initiative.

Market engagement in 2018

For a pension investor, it is important that the government and market parties agree on rules that contribute to ensuring that good pensions can also be paid out in the long term. Engagement with policymakers and regulators is therefore part of our role as an asset manager. We talk to policymakers and sector organisations about reliable and efficient regulations and the development of standards in various fields.

First Dutch Stewardship Code (NSC) published

Good corporate governance enables us, in our role of active shareholder in the companies in which we invest on behalf of clients, to also promote social and environmental and environmental goals. PGGM is therefore working to promote corporate governance standards in the markets in which we invest, including in emerging markets. In 2018, the first Dutch Stewardship Code was published. This consists of a set of principles on responsible and committed share ownership for pension funds, life insurers and asset managers who hold shares in listed Dutch companies.

As far as possible, the Stewardship Code contains the latest developments with regard to shareholder responsibilities under existing and future European and Dutch legislation and regulations and self-regulation in the field of responsible investment and engaged share ownership, such as the revised EU Directive on shareholders' rights, the European Directive for pension funds (IORP II) and the IMVB Pension Funds Covenant. Eumedion has created a Service Document, together with the Pension Federation. This Service Document explains how the principles of the Stewardship Code and the legal provisions on responsible and engaged share ownership can be implemented. This Code will enter into force on 1 January 2019. PGGM played an active role in the Eumedion working group, which was responsible for drawing up the Code.

PGGM calls on governments to take concrete measures to achieve climate goals

In 2018, we supported a call by IIGCC, the PRI and a number of other organisations urging governments to take concrete measures to achieve the goals of the Paris climate agreement. This requires a rapid and significant reduction in the demand for fossil fuels and other CO_2 intensive products. The most effective instrument to achieve this is emission pricing based on the 'polluter pays' principle.

Only governments can enforce such pricing and at the same time ensure a level playing field. Proper pricing of emissions makes renewable energy competitive with fossil fuels, and can thus boost our investments in solutions. For these reasons, in 2018 PGGM also joined Ex'tax, which is working to shift the tax on labour to a tax on the consumption of raw materials and pollution.

Engagement on incidents

In addition to engagement regarding the themes referred to above, PGGM also engages on incidents. For example, reputation-sensitive incidents. We also enter into discussions with companies that commit serious violations of the UN Global Compact Principles. We ask these companies to terminate these violations, implement remedial actions for victims (humans and/or the environment) and take measures to prevent the reoccurrence of such violations. We use the Global Compact 'non-compliant' list provided by data service provider Sustainalytics to identify the companies that violate the Global Compact Principles.

Engaging with Engie about the safety of its nuclear power plants

Since 2017 we have been engaging with Engie, the operator of the Belgian nuclear power plants Tihange and Doel. There is social unrest about the safety of these nuclear power plants, both located just across the Dutch border.

Over the past year, the company has taken measures to improve the risk culture in the power stations. The recommendations of the Belgian regulator have also been followed up. The plants are regularly subject to strict controls by internal and external supervisors. For each irregularity, the power station is shut down until the incident is rectified. Also, good steps have been taken to improve communication in the event of incidents.

Palm oil

At the beginning of November, PGGM, together with a group of institutional investors, engaged with ten palm oil producers and authorities in Indonesia and Malaysia. For some time NGOs have been conducting campaigns that call banks and pension funds to account for their role in the production of palm oil and the associated deforestation, forest fires, land conflicts and labour rights violations.

Although palm oil producers are pursuing a 'No Deforestation, No Peat, No Exploitation' policy, partly thanks to earlier engagements by listed palm oil producers, many things go wrong much earlier in the supply chain. Together with clients, we are considering whether we should once again enter into dialogue with a sector that accounts for less than € 100 million of the equity portfolio. It is also questionable exactly how much can be achieved on the supply side, since a large part of the problems can be attributed to government failure. Further research on this subject is scheduled in 2019.

Dialogue on tar sand oil pipelines

In October 2018, Indian activist and tribal elder Madonna Thunder Hawk was in the Netherlands to call attention to the construction of Keystone XL, a pipeline through areas of the Lakota Sioux tribe. She had discussions with investors, companies and politicians. According to the Sioux, this pipeline threatens the drinking water supply of the inhabitants. The pipeline is also controversial because of its CO_2 emissions and its use for transporting tar sand oil.

In October, Madonna Thunder Hawk visited PFZW and PGGM. She asked us to sell our shares in TransCanada, one of the builders of the pipeline. During this meeting, PFZW explained its investment policy and sustainability ambitions. We discussed its implementation. In particular, we discussed the 50% CO_2 reduction target, as a result of which interests in the most CO_2-intensive companies are being phased out (see page 35 for an explanation of our method). TransCanada is one of the companies in which we have been reducing our interest in the last few years. Shortly after our discussions, the construction of the pipeline was halted by order of a federal judge in the state of Montana, who ruled that the pipeline did not meet environmental requirements.

Last year we also made an engagement to ETP, the builder and partial owner of the Dakota Access Pipeline (DAPL). The construction of the DAPL in the US has, according to stakeholders, been accompanied by the use of excessive force against and insufficient participation of the local population. The company is also accused by some parties of having a higher than average number of oil spills from its pipelines. We asked the company questions about its stakeholder management of pipeline projects and its response plan to spills. As we have not yet received a satisfactory answer to all the questions, we will trying to engage with ETP in 2019.

Engagement with Novartis

Novartis was in the news in early 2018 because of suspicions of bribery. As a result, the company has been classified as a 'Global Compact Violator'. The biggest bribery scandal was in Greece, where the company is said to have maintained close links with various high-ranking politicians. Novartis has been working together with law enforcement agencies since the beginning of this year to investigate and resolve corruption issues.

PGGM spoke with the company on several occasions in 2018 and expressed concerns about the bribery scandals. Novartis seems to understand the urgency of the issue and has taken steps to address risks of corruption within the organisation. For example, the anti-bribery policy has been updated and an anti-bribery directive has been drawn up for third parties. Novartis has also improved its remuneration policies. The variable remuneration of sales personnel has been reduced and made dependent on a positive assessment of 'Values and Behaviour'. The company has also appointed a Chief Compliance Officer and elevated this position to the status of member of the Executive Committee. We welcome these improvements. We have asked Novartis to have the organisation screened for weaknesses by an external party. This will remain the subject of discussion in 2019.

Featured: IMVB Covenant

In the past eighteen months PGGM has been intensively involved in the formation of the IMVB Covenant for Pension Funds, under the leadership of the Dutch Social and Economic Council (SER). Over the next four years, we will work towards implementing the covenant together with our clients who have signed the covenant, and thereby raise responsible investment to an even higher level. In 2018, PFZW started this implementation by reviewing its policy on the basis of the OECD guidelines. When is the negative impact on the world a material issue and when is it so serious for those affected that we need to focus on it regardless of its impact on the company? Next year, we will critically review our own ESG risk screening and, where necessary, amend it based on the IMVB Covenant and the OECD guidelines.

What is the focus of the IMVB Covenant?

International Socially Responsible Investment (IMVB) concerns the implementation of the OECD Guidelines for Multinational Enterprises (OECD guidelines) and the UN Guiding Principles on Business and Human Rights (UNGPs) by pension funds. The OECD guidance for institutional investors provides these investors, such as pension funds, with guidance on how to do this. The guidance therefore forms the basis of the IMVB Covenant.

Pension funds that sign the covenant commit themselves to implementing the OECD guidelines and the UNGPs in their investment portfolio. The UNGPs state that every company has a responsibility to respect human rights. Every company must also have a human rights policy. Pension funds are expected to have an ESG policy[17] based on the OECD guidelines. In addition, pension funds must set up an ESG due diligence[18] process. Finally, pension funds are expected to insist that companies in the investment portfolio which have caused a serious negative impact on society or the environment, effect recovery and/or redress for the injured parties.

The covenant basically consists of two parts. The first part, the so-called 'broad route', concerns the implementation of the OECD guidelines and the UNGPs in the investment portfolio of pension funds as described above. The second part, the 'deep route', concerns cooperation between the various covenant parties (pension funds, the government, trade unions and civil society organisations).

Over the next four years, the parties will work together on approximately six concrete engagement cases together with companies in the listed equity portfolio of pension funds. This concerns social issues such as human rights or working conditions. The aim of the deep route is to increase the effectiveness of engagement processes and to learn from each other as covenant parties. The deep route is optional.

Why an IMVB Covenant?

The OECD guidelines are binding on OECD member states, such as the Netherlands. The Dutch government has chosen not to impose the directives on the business community unilaterally by means of legislation, but to leave it to the sectors themselves via International Corporate Social Responsibility (IMVO) covenants. These covenants are drawn up by the sectors in consultation with trade unions, civil society organisations and the government.

In 2014, the government commissioned a sector risk analysis to determine which sectors in the Netherlands have the greatest risks in terms of corporate responsibility. The pension sector is one of the thirteen sectors (in addition to textiles and clothing, oil and gas, chemicals, banks and insurers, for example) that emerged from this analysis. Since the risks in the pension sector are in the investment portfolio and not in the organisation itself, the pension fund, the term 'investing' (IMVB) is used rather than 'doing business' (IMVO).

17 The OECD guidelines do not refer to ESG, but to Responsible Business Conduct (RBC). As the term ESG is much better known in the pension sector, the covenant has chosen to use the term ESG, meaning RBC as defined in the OECD guidelines. RBC looks at the negative impact of companies on society and the environment. This does not, therefore, concern any negative impact of society and the environment on companies (and therefore the investment portfolio of pension funds), which pension funds often refer to as ESG.
18 The definition of due diligence in the OECD guidelines differs substantially from what pension funds and other investors usually mean by due diligence. In the OECD guidelines, due diligence is defined as follows: “the process through which enterprises can identify, prevent, mitigate and account for how they address their actual and potential adverse impacts as an integral part of business decision-making and risk management systems.” (OESO, 2011)

Continuation **Featured: IMVB Covenant**

What does the IMVB Covenant mean for our clients?

Pension funds that signed the covenant must incorporate the OECD guidelines and UNGPs into their policy within two years, into their outsourcing and monitoring within three years and into their reporting within three and a half years (transparency). Many funds already partly meet the criteria of the covenant, but there is often room for improvement.

There is also often room for improvement in the recording in relevant documents (e.g. responsible investment policy, investment mandates or the annual report). When pension funds participate in the deep route, they must actively participate in the training sessions organised with regard to the engagement cases. This requires capacity from pension funds.

What does the IMVB Covenant mean for PGGM?

As an implementing organisation, PGGM ensures that it can meet the expectations arising from signing the IMVB Covenant with regard to clients. The covenant can only be signed by pension funds, not by administrative bodies such as PGGM. Nevertheless, because PGGM's clients have signed the covenant, it does have implications for PGGM.

Firstly, PGGM will support clients who have signed the covenant to ensure that they can meet the requirements of the covenant. Secondly, PGGM’s clients will require PGGM to set up an ESG due diligence process in accordance with the OECD guidelines and the UNGPs. PGGM already subscribes to the OECD guidelines and UNGPs and also largely complies with the recommendations of the guidelines for institutional investors.

Where this is not yet fully the case, PGGM will bring responsible investment practice in line with the OECD guidelines and UNGPs. In this regard, PGGM will cooperate with the other covenant parties. PGGM will also contribute to the deep route of the covenant on behalf of clients.

3.2 Voting

By voting at shareholders' meetings, we exercise our influence as a shareholder over the companies in which we invest on behalf of our clients. As a long-term investor, voting enables us to exert a guiding influence on a wide range of themes: strategic, financial and social/environmental. It literally gives us a voice in important company management decisions.

As the basis for their voting behaviour, PGGM and its clients annually draw up the PGGM Voting Guidelines, which set out our views on frequently occurring voting items at shareholders' meetings. Given the number of shareholders' meetings, our voting is largely automated. The basic principle is that we vote as advised by our voting service provider (ISS). These recommendations are based on the PGGM Guidelines. We actively monitor these voting activities based on multiple sources. We vote on the most relevant resolutions ourselves. For each company, PGGM publishes its voting record via this website.

Where appropriate, PGGM also speaks at AGMs in order to reinforce our vote and to conduct a public debate with the companies in which we invest. This applies to Dutch companies in particular. As a result of our scale as a relatively large player, we do have actual voting power.

PGGM also submits shareholder's proposals by itself, or in cooperation with other investors, if we want to encourage a company to take action. This was the case, for example, with the Canadian company Alimentation Couche-Tard. We regard the right to vote as an important part of our engagement activities and vice versa. For example, the right to vote can be used to provide a framework for a subject on which engagement has been conducted, or as an escalation strategy to translate poor engagement progress into a dissenting vote (for example, against the reappointment of a management board member).

In 2018, we voted at 3,877 (99,7%) meetings of listed companies in which our clients' assets are invested. Based on our clients' voting policy, we voted on more than 43,109 proposals. Page 31 shows in which regions and on which subjects we voted in 2018.

PGGM abstained from voting on Follow This resolution

In recent years, increased attention to climate change has become visible. This is reflected in a growing number of shareholder resolutions. In particular, Follow This attracted a great deal of attention in recent years with its resolution calling on Shell to firmly commit itself to the objectives of the Paris Climate Agreement.

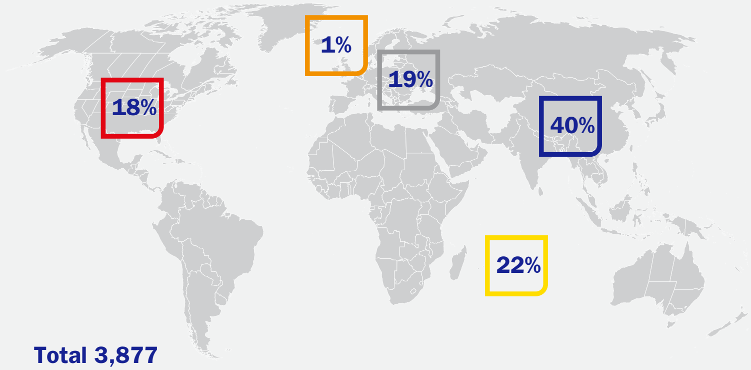
We abstained from voting on this proposal in 2018 because, on the one hand, we endorse the ambitions of the proposal but, on the other hand, we recognise that Shell will only be able to achieve the targets if the rest of society - in particular the energy demand side - also adapts. Our arguments are set out in more detail in an explanation of vote, which is published on PGGM's website. During the same period, PGGM was a signatory to an open letter from the IIGCC and the PRI to the entire oil and gas sector.

Alimentation Couche-Tard (ACT) is open for discussion after shareholders' resolution

PGGM and Aequo submitted a shareholders' resolution in 2018 asking ACT for more transparency on various ESG issues, including working conditions at the company and in the supply chain.

ACT is one of the companies with which we are conducting engagement with regard to working conditions in the agricultural supply chain. This was an escalation strategy after two years of failed attempts to get in touch with the company. Our shareholder proposal has had the desired effect: the company is now open to dialogue. Just before the AGM, the company issued a statement that they have considered our resolution and will increase their transparency on sustainability and improve their communication about current efforts and future goals to shareholders. This is still just a promise which says nothing about the quality of the reporting, but we consider it to be a good first step.

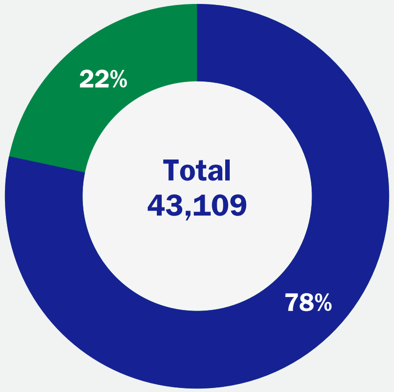
Shareholders' Meetings by Region in 2018:



Total 3,877

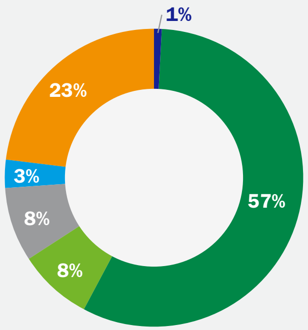
- Netherlands **50**
- North America **705**
- Europe (excl. Netherlands) **716**
- Asia **1,551**
- Rest of the world **855**

Voting behaviour



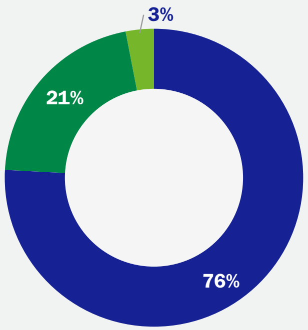
- Meeting points voted in accordance management recommendation **33,746**
- Meeting points voted against management recommendation **9,363**

Management Proposals (by category):



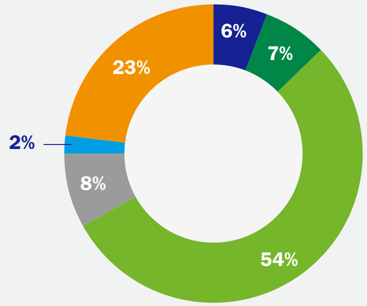
- Anti-takeover scheme **262**
- Appointment of directors **23,851**
- Increase in capital share **3,492**
- Remuneration **3,491**
- Mergers and Acquisitions **1,382**
- Miscellaneous **9,358**

Voting Instructions in 2018:



- For **32,647**
- Against **9,228**
- Abstained **1,234**

Shareholders' Proposals (by category):



- Remuneration **75**
- Corporate governance **91**
- Appointment of directors **693**
- Health and Environment **96**
- Social conditions **26**
- Miscellaneous **292**

3.3 Legal Proceedings

PGGM conducts legal proceedings for clients, where necessary, in order to recover investment losses and to enforce good business conduct. We do this as a shareholder in listed companies, both in the Netherlands and abroad. We distinguish between 'active' and 'passive' proceedings. We opt for active proceedings if we consider it important that the company changes its behaviour and conducting a dialogue has not had sufficient effect. The main objective of the legal proceedings in such cases is to enforce a positive change in the organisational structure.

In addition, we sometimes opt for an active role in legal proceedings if we believe that a company has acted improperly and our clients have suffered a substantial financial loss as a result. In such cases, our main objective is to recover as much as possible of the loss suffered on the investment for our clients. This is also an attempt to send a signal to the market. In all cases where we actively litigate, we do so together with - and/or on behalf of - other investors. These proceedings can be lengthy and very expensive; however, because our advisors assist us on a 'no cure no pay' basis, we do not run the risk of litigation costs. In some proceedings, it is sufficient for us to ‘passively’ register our claim. This is a mainly administrative process, in which we can recover part of the damage suffered by our clients at minimal effort and cost.

In 2018, we conducted seven legal proceedings on behalf of our clients. We initiated proceedings against the mining company, BHP Billiton. The Fundao dam in Brazil, of which BHP Billiton is co-owner, collapsed in 2015. This resulted in a toxic mudflow that wiped out a village. There are strong indications that BHP Billiton was already aware of the risks related to the dam. By not disclosing this information, BHP Billiton violated its disclosure obligations. In addition to the above catastrophic consequences, investors also suffered losses as a result of this violation.

4. ESG integration: For a better risk-weighted return

As an asset manager, we carry out an investment assignment for our institutional clients. Central to this is the optimal weighing of risks and expected returns. In this assessment, we also take ESG criteria into account in order to achieve a better risk-weighted return. ESG factors can have an immediate or indirect impact on financial results. Examples are climate-related financial risks, such as more extreme weather conditions that lead to higher claims from insurers. Or a scandal about CO_2 emissions, such as was the case with Volkswagen and which ultimately led to a downward revision of its credit rating. Companies with inadequate safety and risk management run a greater risk of incidents and accidents, which can then lead to a loss of profitability or an increase in risk.

4.1 ESG integration in figures

We can never completely eliminate risks. This is also not our task: there is no return without risk. What matters is whether our clients are rewarded for the risks they face. When the identified risks negatively affect the future expected return, PGGM may decide not to invest or to demand a higher expected return.

We do not see ESG risks as a separate set of non-financial factors but as non-traditional sources of financial risk. ESG criteria are a way of analysing financial risk in the long term. Although academic literature has currently produced considerable evidence that attention to ESG factors actually leads to better investment performance in a financial sense, it is important for our clients to be able to see this in the results of the various programmes that focus on ESG factors. Currently, these are the CO_2 reduction programme and the exclusions policy.[19]

PGGM has been measuring the financial consequences of these instruments for a number of years. In the past, a great deal of attention has been paid to the question of whether ESG policy leads to higher returns on investments. Our calculations show that, to date, these instruments have not had a significant impact on the returns on investments.

Returns, however, are inseparable from the risk of the investments. Academic meta-studies on the impact of ESG policy on investment performance suggest that improved performance is mainly due to risk reduction. It is therefore also important to measure the impact of ESG policy on risk. Within the context of the current ESG instruments, there is no significant difference in risk in terms of the volatility of the portfolio's returns compared to a generic equity index (without adjustments).

> **‘It takes resources, efforts and guts to integrate ESG factors properly.’**
>
> Roelof van der Struik *Investment Manager*

It is crucial for us and our clients to be able to properly understand and monitor the actual impact of the policy on the performance of the investments. This applies both to the impact on returns as well as the impact on the risks. It is not enough to merely determine the extent of the impact. We also want to better understand whether there is a certain pattern to the influence on returns, for example whether the responsible investment instruments result in less acute negative outliers. Multi-year data is required for this. These influences will become clearer as and when we have more data available. This will allow us to better substantiate the consequences of the ESG policy on investment results and enable our clients to make more competitive choices in their policy in this respect.

19 In 2018, we stopped using our best in class ESG inclusion method in the beta equity portfolios. This method proved not to be robust enough to achieve a cleaner portfolio and reduce reputational risks. In 2019, we will be working on a new screening method.

4.2 Materiality

In order to assess whether ESG factors for a specific investment are material to our financial position, PGGM sets up processes to be followed for investments.

In the first instance, it is essential that factors that potentially have a major impact on the future performance of the investments are identified. These factors vary by industry/sector and by geographical location and activity.
In order to assess materiality, it is therefore necessary that the investment teams with knowledge of the investments form an opinion about the ESG factors that are relevant. The teams use different data sources and the publications of the company or manager of the investment. These factors are then systematically screened. Investment teams draw up requirements for this, with the help of the Responsible Investment team. In addition, industry associations have drawn up frameworks to create uniformity in the reporting of important ESG data. For example, our real estate and infrastructure teams use GRESB to measure sustainability performance. For more information on this topic see page 39.[20]

Standards are therefore gradually being developed, which allow ESG risks to be requested, measured and reported. At the end of 2018, PGGM became a member of the Sustainability Accounting Standards Board (SASB) alliance, which has the goal of achieving standardised reporting specifically with regard to the materiality aspects of investments. SASB has compiled indicators for 77 industries with ESG factors that can be financially material. The advantage of using this standardised method is that the investment teams at PGGM can use the same structure to assess materiality risks.

Positive impact versus negative impact

Earlier in this report we talked about our efforts to identify the positive impact of our investments. However, we also want to do justice to the drawbacks of the investments (negative impact).

When it comes to impact investments, the focus is often on the positive impact, but does this give a complet pitcture? Do we not risk maken wrong management decisions if we only focus on positive impact? In short, have indicators been developed to measure all relevant and significant social and environmental impact that is created (or destroyed) by the companies in which investments are made? Does this also include intended and unintended negative impact?

MSCI, S&P/Trucost and FTSE Russell, among others, are experimenting with ways to score and balance positive and negative impacts. With scores on a 5 or 10-point scale, different impacts and themes may be comparable. This, however, comes at the expens of addability and communication of absolute, tangible impact. A net 'impact score' is also accompanied by the necessary assumptions and value judgements that do not necessarily benefit objectivity and transparency. PGGM is closely following these developments, for example through the ‘SDG Evaluation Tool’ of the advisory council of S&P/Trucost, which was released in November.

20 Part of the invested assets are managed by external managers. When selecting, monitoring and managing external managers, we include aspects relating to responsible investment. We aim to select external managers who share our ESG vision and that of our clients, and who devote proper attention to material ESG risks and opportunities in their investment processes. These factors also are a fixed item on our agenda of the regular review meetings with external managers. Precisely how the External Management Team does this was set out in Public Guidelines in 2017.

Featured: The risks of climate change

Drought, floods and other forms of extreme weather can have an impact on the companies, projects and real estate we invest in. The most recent report of the Intergovernmental Panel on Climate Change (IPCC) underlines the urgency of additional measures and highlights the major physical risks, even if global warming is limited to 2 degrees Celsius. This is also DNB's view: it sees climate change as a systemic risk that could disrupt the Dutch financial system and ultimately the real economy. The inclusion of climate-related risks in the investment policy remains very challenging due to the high number of uncertainties. The initiatives below, however, give us a better grip on the problem and allow us to gradually take the financial risk of climate change into account.

The risks

PGGM distinguishes two types of risks: physical risks and transition risks. Physical risks arise as a result of climate change. Transition risks arise because society tries to eliminate the causes of climate change - greenhouse gas emissions. However, climate change is a risk that is difficult to quantify: how do you estimate which technology will ultimately win, or which companies will be most affected by a high CO_2 price? And in today's globalised world, it is unclear which areas companies depend on. Some companies do not even have that insight themselves, partly because production chains have become very long. However, there are a number of things an investor can take into account. PGGM is working in various ways to get an even better grip on the effects of climate change - and measures to combat climate change - on the portfolios.

Figure 3
Types of risks

Climate monitor

Following on from our climate research, which we completed in 2017, last year we developed a climate monitor that provides insight into the direction of climate change and the pace of the energy transition. If the policy remains the same, the world and PGGM must certainly prepare themselves for considerable physical damage as a result of rising sea levels, more frequent and more severe extreme weather, etc. It is not enough just to look at investments for the transition and the associated risks, but also at the risks arising from the failure or partial achievement of the climate goals. Even if the climate goals are met, there are still physical risks that will materialise. Because there is no certainty of the outcome of the measures and the actual impact on global warming, we as investors should not focus on one scenario, but should include a palette of possible outcomes in the risk estimates.

All our investment teams within private markets pay explicit attention to climate risk where relevant when making new investments. Due to the limited liquidity of the investments concerned and the long investment horizon that applies to them, these investments in particular may have a higher than average sensitivity to climate risk. The explicit weighting of climate risk in the investment portfolio means that climate change as a financial risk receives the necessary attention. In 2018, Risk started developing a CO_2 stress test on clients' portfolios. Another example is that the physical locations of real estate investments are linked to climate models. This provides insight into which part of the property portfolio is vulnerable to rising sea levels and extreme weather. For more information on this topic see page 38.

CO_2 reduction in investment portfolio

Like most economists, we believe that better pricing of CO_2 and other greenhouse gases is the most effective and fair measure to counteract further global warming. We are convinced that a higher CO_2 tax is inevitable in the long term.

Continuation Featured: The risks of climate change

With this in mind, we started to reduce the footprint of the equity portfolio a few years ago. We accomplish this by reallocating investments in the most CO_2 intensive sectors - energy, utilities and materials - to relatively CO_2 efficient companies. In our view, companies with high emissions are inadequately prepared for a low CO_2 future and these companies are therefore gradually disappearing from the portfolio. We will keep the sector allocation unchanged, because we believe that all sectors will continue to play a significant role in a low CO_2 economy. This reduction can act as a hedge against a possible decline in the value of investments with a large CO_2 footprint.

We have been commissioned by our largest client to halve the CO_2 emission of investments by 2020 in comparison to 2014.[21] Since the baseline measurement, the CO_2 footprint has been reduced from 339 tonnes of CO_2 per million dollars of company turnover to 239 tonnes of CO_2 per million dollars as at 31 December 2018.[22] In the period from year-end 2017 to year-end 2018, this reduction was from 244 tonnes of CO_2 per million dollars of company turnover to 239 tonnes. The decline has been lower than expected. This is mainly due to the CO_2 data we use. Many companies and even entire sectors are gradually showing a higher CO_2 intensity. The historical data, in contrast, show a steady decline. This means that there has been a trend break in recent years.

We measure our goal from a historical point in time, namely the CO_2 footprint at the end of 2014. This means that if the entire market becomes more CO_2 intensive over the years, our goal becomes all the more difficult to achieve. This is also what we see in the figures. Over the entire period, the broad market (FTSE All World) has become no less than 10% more CO_2 intensive, while PGGM's equity portfolio has become 29% less CO_2 intensive. This indicates that the method of management does have an effect.

It is not yet 2020. The market may become less CO_2 intensive in the coming years, thus making it possible to achieve the goal of 170. We are talking to our CO_2 data provider to explore the causes of the observed increase in CO_2 intensity in the broad market. This allows us to explore whether something needs to change in the methodology or the goal. We do take into account that reaching the number '170' is a translation of the higher goal, but not the goal itself. The ultimate goal is to include CO_2 data in the equity portfolio, to encourage companies to reduce their CO_2 emissions and to encourage them to develop a robust climate strategy.

TCFD

In 2018, the Task Force on Climate-related Financial Disclosures (TCFD) published its first status report. The report provides an overview of the current state of climate reporting and provides tools to help the drafters implement the recommendations. The TCFD concludes that businesses are on the right track with climate reports, but also that - as expected - considerable steps still need to be taken, particularly in the area of scenario analysis and the translation of operational standards into financial standards. We wholeheartedly support this goal and are therefore pleased that the mandate of the TCFD has been extended until mid-2019.

More details of how PGGM deals with climate-related risks can be found on our website. On the website, we report according to the TCFD recommendations.

In 2018, we joined the Investor Leadership Network (ILN), a G7 initiative of investors who share a common commitment to sustainable long-term growth. One of the ILN's spearheads is improving TCFD reports. By exchanging knowledge within this network, we will further refine our own TCFD reporting in the coming years.

21 At the beginning of 2015, we identified the CO_2 emission of all companies in the equities portfolio and determined a baseline reference for halving emissions (31-12-2014 serves as the portfolio reference date). For this purpose, we use data on CO_2 emissions from portfolio companies that we purchase from the specialised data supplier Trucost. Emission data is only available with a delay, as a result of which these data are at least one year behind the portfolio reference date. An elaborate description of the measurement method is available on PGGM's website.
22 In addition to the company's own CO_2 emissions (Scope 1), this also comprises electricity consumption (Scope 2) and part of the CO_2 emissions of direct suppliers (Scope 3). The equity investments managed by PGGM for the benefit of its clients to whom this applies, amounted to € 52.6 billion at the end of 2018.

4.3 ESG integration in practice

Integrating ESG effectively is not easy. There are no clear standards and definitions. There is also much to be gained in terms of disclosure, the data that companies provide on their environmental policy, social conditions and good governance. In addition, sometimes qualitative assessments have to be made - how can respect for human rights be expressed in financial models? ESG integration also requires investors to change their mindset and it requires the necessary skills. We worked on this again in 2018.

The various investment teams have defined goals that focus on improving ESG knowledge, reviewing some of the existing instruments and improving monitoring and the reporting of the results of our efforts. We have also developed a new method for evaluating our internal teams and comparing them to external colleagues. This method has been aligned with how we assess our external managers, so that we have a common standard for what we expect from both external and internal managers when it comes to ESG integration. We use these assessments as a tool to take ESG integration per asset class to a higher level.

At PGGM, ESG integration is mainly placed bottom-up with investors. Within the limits of the client mandate, our investors have the freedom to determine the direction of the portfolio themselves and the obligation to report on progress. ESG plays a central role in this, as do financial returns. On a daily basis, decisions are made based on financial and non-financial information. The approach differs for each investment category. This difference is caused by the degree of influence PGGM has on the investment process, for example on deciding whether it will be managed externally or internally. It also makes a difference whether the investment strategies are passive or active.

Furthermore, the effect that the ESG factors have on the investment category, such as risk reduction versus improvement in return, also plays a role. For the more active mandates, the portfolio manager integrates ESG information into the analysis of a company, country or project, making ESG analysis an integral part of the investment decision.

On the following pages, some of our employees talk about how ESG factors are integrated into the investment process in practice.

Examples of ESG integration

Private Markten - Infrastructure - Private Real Estate - Private Equity - Credit Risk Sharing - Insurance Linked	- Selection managers (ESG assessment) - Due Diligence - Monitoring and engagement GP, Fund manager and enterprise/asset - Incident reporting and ESG KPIs reporting
Public Markets - Long-Term Equity Strategy - Systematic Equity Strategies - Listed Real Estate - IG Credits - Emerging Market Credits - Rates - Treasury & trading	- Active, direct selection of companies - Monitoring (ESG screening and sustainability ladder) - Engagement in credits and equity - Voting - Impact universe construction - CO_2 index
External Management	- Selecting, monitoring and managing external managers for ESG integration - Reporting

ESG integration in practice: Climate related risks and the impact on listed real estate

Recently, awareness that climate-related risks are relevant has increased rapidly among investors and companies. Pressure from society and the regulator demands a proactive attitude from investors in the area of climate change. Ewout Schoemakers and Kerim Ural, Investment Managers at PGGM, explain how climate risks within the Listed Real Estate portfolio are made transparent.

“We invested a lot of time last year into understanding the risks and impact of climate change on our portfolio. We are now able to identify and list (‘map’) important climate-related risks for our portfolio up to building level, such as sea level rise, hurricanes and forest fires. One could suggest that these are risks that materialise far beyond the investment horizon. This is true, but the measures taken by governments and companies do fall within our investment horizon. We therefore consider it very important to gain insight into the potential impact on our portfolio at this stage.”

Figure 4

Flood risk of listed real estate due to 1 metre rise in sea level New York

An example to illustrate how we have mapped out the impact of rising sea levels and the risk of flooding. “This risk is particularly relevant for real estate, as many large cities are located on the coast or rivers. First of all, we mapped individual buildings of all companies in our benchmark geographically. We then simulated the consequences of a rise in the sea level, under different scenarios, providing insight into physical consequences. Finally, we filtered the data of the buildings that are exposed to the risk of flooding. This gives us insight into the relative exposure to this risk per company.”

‘We are now able to identify and list (‘map’) important climaterelated risks for our portfolio up to building level.'

Ewout Schoemakers

Kerim Ural

Quantifying the final impact is a challenging next step. “We do this by making estimates of investments in preventive measures, such as insurance premiums. In addition, there are the indirect consequences, such as limited access to infrastructure. In addition to the analysis of the direct impact, we are therefore working on a framework to provide insight into the indirect consequences of these risks. Through data-driven analyses and the linking of different databases, we are increasingly able to distinguish those real estate portfolios that are expected to experience a greater impact. Ultimately, this can lead to a discount on the valuation of a company. At present, the direct impact of climate-related risks is still limited, but by making this clear, the risks can be monitored more efficiently and inefficiencies in the market can be better priced and utilised. New data is becoming available all the time, enabling us to further refine our analyses and thus remain at the forefront in this area.”

ESG integration in practice: human rights

Integrating human rights into the investment process is a challenge, especially with regard to passive investment via an index. Jelena Stamenkova van Rumpt, Senior Advisor Responsible Investment and Human Rights expert, explains the challenges:

“Compared to other topics, there is much less information available about human rights and working conditions at companies. The data we purchase from external suppliers on these subjects is focused on the policy and implementation activities of the companies in which we invest, not on the actual results. This makes it difficult to make investment decisions based on the data.

This year we decided to support the Workers Disclosure Initiative. In doing so, we aim to create a common framework for reporting on social issues. We want to encourage companies to monitor their performance and make this publicly available. This gives companies insight into their own performance and stimulates them to improve on it.

We have also worked on increasing our own knowledge so we can better assess risks in the area of human rights and working conditions. Among other things, we organised meetings with human rights experts from various Dutch companies, banks and investors, where we exchanged knowledge and discussed dilemmas. In January, PGGM and Shift organised an internal workshop on human rights and labour rights with the aim of raising awareness and knowledge among investment professionals and further developing instruments and guidelines. Shift is a leading organisation that was involved in drawing up the UN Guiding Principles for Business and Human Rights. Having an external supplier like SHIFT to develop the workshop gave us both knowledge and insight into the possible gaps in our processes and instruments. The workshop was a success and gave our investors practical examples of how to integrate human rights into due diligence.”

ESG integration in practice: GRESB as an indicator

PGGM invests in a large number of real estate funds and joint ventures throughout the world. ESG considerations are fully integrated into the screening, selection and monitoring processes of real estate funds. Sebastiaan Blom, Associate Investment Manager, explains:

“During 2018, private real estate investments again outperformed the Global Real Estate Sustainability Benchmark (GRESB), which compares funds on sustainability. The PGGM fund outperforms the global GRESB average, which includes 903 real estate companies and funds, and the relevant benchmark (private real estate). Our portfolio score has increased again compared to last year, both in terms of policy and implementation. In addition, 88% of our investments that participate in GRESB can now be classified as Green Star. 30% of our participating investments, with a total volume of € 3.3 billion, are even among the 20% best-scoring GRESB participants.”

GRESB results are used by PGGM to discuss sustainability with the management of the companies and funds in which we invest. “We consider it important that our investments continue to show progress in terms of sustainability and GRESB enables us to compare them with their peers. This not only involves policy and transparency, but also implementation and the measurement and reduction of energy consumption, CO_2 emissions, water consumption and waste.”

Based on the 2018 GRESB results, we are currently looking at which investments require extra attention because they do not show the desired progress in relation to the market or expectations. In addition, a GRESB due diligence assessment has been available for new investments since November 2017. This assessment gives an indication of the GRESB score and can further help us to make our portfolio more sustainable. In 2018, a first pilot was carried out with a new investment using this new assessment tool. This provides input for ESG improvements even before the first official GRESB participation in an investment.

ESG integration in practice: Human rights issues in the electric car supply chain

Our investors engage with portfolio companies from a risk/return perspective. Sevinc Acar, senior investment manager credits, explains:

‘The energy transition, and specifically the transition to electrically driven transport, brings with it new dilemmas for investors. This transition is not without problems when it comes to the extraction of raw materials and the environment, the recyclability of new products and concerns about human rights.

For example, the electric car, which is the new 'clean' symbol of energy transition in transport among other places. Cobalt, an important raw material for the production of powerful batteries, is mined in Congolese mines, sometimes under appalling conditions. A report by Amnesty International shows that child labour is a major problem in the cobalt supply chain. Cobalt miners are also often exposed to high levels of toxic metals and working conditions in the mines are often poor. Encouraged by these reports on serious abuses in cobalt mining, we conducted discussions with a group of 20 Dutch and foreign investors with regard to the 15 globally operating companies that use cobalt. We conducted this dialogue as part of our risk management. In addition, we also see it as our moral responsibility as managers of the assets of pension participants.”

As part of this collaborative engagement process, in 2018 PGGM engaged with Daimler, a manufacturer of cars including Mercedes-Benz. At Daimler, as at other companies that are heavily dependent on cobalt, the origin of the raw material is often not known. We asked Daimler to be transparent about the origin of the raw material. We have also called for strict action to be taken with regard to possible violations of human rights. Daimler was receptive to this dialogue, certainly because this cobalt engagement coalition represents many hundreds of billions of euros of invested capital. These are coalitions that multinationals cannot ignore: behind this enormous amount of invested capital are the consumers (such as participants in pension funds) which are the focus of their marketing. In 2019, we will continue to hold Daimler to account for its responsibilities in the cobalt supply chain.

ESG integration in practice: Sustainable tax

In recent years, the international debate has often focused on the levying of taxes and the taxpayer's responsibility in this respect. In June 2018, PGGM published its Sustainable Tax Position Paper. In this report, PGGM provides stakeholders with its vision of how to deal with taxation in a socially responsible manner. Niels Krook, Principal Tax Counsel at PGGM, explains:

“As Principal Tax Counsel in the Tax, Legal & Regulatory team of PGGM Investments, I am responsible for the taxation that plays a role in the global investment portfolios of our clients and PGGM funds. An important principle for us is that participants' pensions are not taxed more than once. In an often complex international tax environment, we want to operate in a socially responsible manner. To this end, PGGM has developed tax positions which are implemented in our investment activities. The core of our policy is that the tax aspects of investments are always comprehensible, manageable and explainable, that double taxation is avoided as much as possible for the pension funds and their participants and that greater transparency on tax issues is necessary.”

These positions relate in the first instance to PGGM's own tax behaviour and the way in which we structure investments in a responsible manner for tax purposes. Over the past year, we have analysed the existing portfolio on the basis of these principles. New investments will be made in line with the new policy. In existing investments too, fiscal sustainability can sometimes lead to a different structure. “An example of this is the restructuring of an existing Asian fund in which passive holding companies, established in offshore jurisdictions, will be dissolved.”

We actively engage in public discussions about tax principles that affect pension funds and their administrators. PGGM actively promoted the Sustainable Tax Position paper, both internally and externally, and discussed it with various parties including co-investors, external fund managers, national and international peers and advisers. For example, we spoke at a seminar of the Danish Pension Federation in Copenhagen, in round table sessions with other international investors and held a dialogue with various investment managers. The aim is to create more awareness about this subject in the investment world. We are actively discussing how to further develop this relatively new subject in a sound manner.

We are currently working on an additional sustainable tax policy that formulates our expectations with regard to the companies in which we invest. But also with regard to parties who are appointed to manage investments, such as external fund managers.

5. We set limits: exclusion

We want to avoid making investments that do not suit our clients'. This is why, in accordance with the PGGM Implementation Guideline, we exclude companies that are involved in controversial weapon and tobacco activities from the PGGM funds and internally managed mandates. In addition, we do not invest in government bonds of countries that are the subject of sanctions by the UN Security Council and/or the European Union (EU). In addition, we may exclude companies with elevated ESG risks. In such instances, we first attempt to realise improvements by engaging the company in dialogue.

5.1 Implementation of exclusions

If clients wish to apply a stricter minimum limit to their investments, PGGM facilitates the implementation of this. If the participants in the PGGM funds jointly agree on additional exclusion criteria, PGGM will generally apply them to all relevant PGGM funds. In this way, a decision was taken in 2013 to exclude tobacco companies from investing in PGGM funds. In concrete terms, this means that companies engaged in the production of tobacco and/or tobacco products (such as cigarettes, cigars, chewing tobacco, etc.) are excluded. If participants fail to agree on additional exclusion criteria, at the request of individual clients, PGGM will try to set up segregated mandates to which the additional criteria will be applied. Clients may also choose to apply these exclusion criteria to external mandates or to funds in which they invest directly.

5.2 Exclusions in figures

Exclusions result in deviations of the investment portfolio from the reference index. In the short term, these can be both positive and negative. As stated earlier in this report, we are committed to being able to quantify the influences. In concrete terms, this means that we keep track of the effect of the exclusions on returns. The data show that the product exclusions on tobacco in particular has had a positive effect, while the product exclusions on weapons has slightly reduced the return on equity investments.

2013-2018	Total effect
CO_2	0.078
Weapons	-0.643
Weapons - AFM prohibited	-0.100
Tobacco	0.239
Engagement-related	0.132

2018 YTD Q4	Total effect (Optimisation effect under CO_2 segment)
CO_2	-0.018
Weapons	-0.068
Weapons AFM prohibited	0.017
Tobacco	0.314
Engagement-related	-0.015

5.3 Whether or not to exclude

The potential conflict in the case of exclusion is that we lose our influence if we do not have an interest in a company. Exclusion does send out a strong signal, however, and can lead to change if a company wants to win back investors.

Walmart

On behalf of clients, PGGM excluded the American supermarket group Walmart from investment in 2013. The main reason: Walmart's policy in the US at the time limited the options of employees to organise themselves into trade unions. This is in conflict with international (ILO) labour guidelines. In the subsequent five years, Walmart has improved its policy towards employees. In 2018, Walmart published a statement on human rights and a Global Responsibility report, which states that Walmart respects the rights of association (in trade unions) and collective bargaining of employees. PGGM and its clients applaud this change in policy. In 2018, we again entered into discussions with Walmart and asked them about the results of this new policy in practice. In 2019, PGGM will work together with its clients on a process to re-evaluate companies that have made substantial improvements.

Tar sand oil

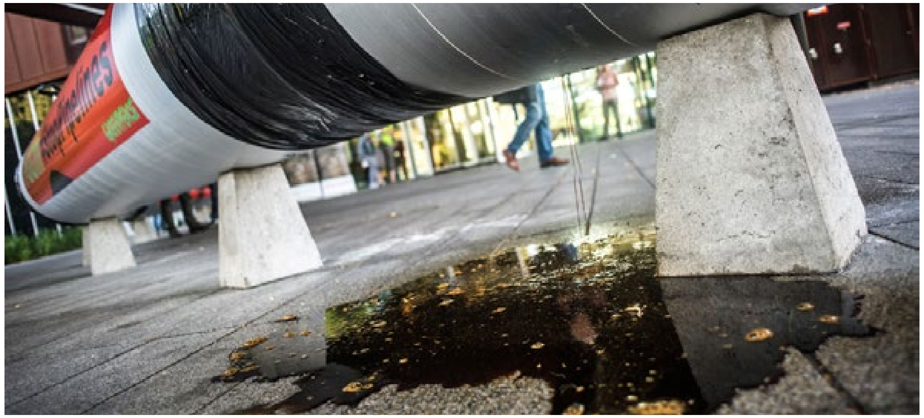
In July, Greenpeace protested with a leaking pipeline at the entrance to PGGM's offices in Zeist. Greenpeace asked us to withdraw our investments in companies that build pipelines for the transport of tar sands. A considerable amount of CO_2 is produced by extracting oil from tar sands, and Greenpeace believes that maintaining a tar sands infrastructure is out of step with the implementation of the agreements of the Paris Climate Agreement.

PGGM had previously entered into discussions with Greenpeace about these investments, the policy of our clients and our vision of the sector. PGGM understands Greenpeace's concerns very well. While we want to contribute to Paris agreement, we want to do so in a different way than the environmental organisation demands of us. Energy companies that extract an above-average share of their oil from tar sands are disappearing from our equity portfolio due to high CO_2 emissions (for more information on this see page 35). These companies put short-term returns ahead of the long-term sustainability of their business model and we therefore do not believe in engagement with these companies.

Nevertheless, we have retained our interests in three companies named by Greenpeace: Enbridge, Energy Transfer Partners (ETP) and Kinder Morgan. Why hold on to something that only comprises 0.03 percent of our client portfolio? We get asked the question, why not sell?

For energy companies with a much smaller share of tar sand oil, we do not think selling is the right solution. We prefer a constructive dialogue in which we draw the companies' attention to the risks of these activities to the environment in the short term and to their profitability in the long term. If we were to withdraw and sell our shares, they would be in the hands of investors, who would probably have fewer objections to tar sands and would not disturb the companies.

As far as our investments in pipelines are concerned: Pipeline transport of oil offers a number of advantages, such as low costs and low CO_2 emissions compared to transport by tanker or diesel trains. However, these advantages only outweigh the disadvantages if the pipeline is properly laid, if the response to any leakage is quick and appropriate, and if the rights of the local population are respected during the construction process. Leakages and human rights therefore have our full attention, and we are committed to them. In 2018, we spoke with American Indian activist Madonna Thunder Hawk, tribal elder of the Lakota Sioux, about this. We also discussed this with ETP. For more information on this topic see page 27.



Outlook

In 2019, we will continue to devote efforts to realising both financial and social and environmental returns. We are therefore looking for new opportunities to invest the pension capital of our clients sustainably at an attractive return.

At the beginning of 2019, we took a step in this direction by structuring the Private Equity portfolio of funds and co-investments around the four themes of Investing in Solutions. In particular, the aim is to invest in smaller, high-impact funds and companies that focus on solutions. We expect PGGM to be able to carry out interesting transactions in this context in 2019, which will underline our ambitions in this respect. We are also looking at ways of investing profitably in energy transition, if possible in the Netherlands. A good example of this is our announcement at the beginning of 2019 that we were joining a consortium together with Shell to see if we could acquire Eneco.

Measuring the social and environmental impact of investments remains important to us. With the help of external experts, we are exploring the possibilities of developing an impact database that can provide this insight.

In addition to these positive-impact related activities, we will continue to engage with companies, including pharmaceutical companies, with regard to transparency in the pricing of medicinal products and their affordability. We feel a special commitment to this, given the support of our largest client.

The investment teams will increasingly work according to a common structure, inspired by SASB. This will make it possible to further increase knowledge sharing, as well as measuring and examining sustainability in the investment portfolios. We are increasingly using the data that is available to us to quantify the sustainability of the portfolio. In 2019, we anticipate that more and more attention will be paid to the physical consequences of climate change, in which scenario analyses and spatial finance will play an important role. Spatial finance is the idea that satellite images and big data at the level of individual assets will allow us to better assess risks. We have already made a start with this in our real estate portfolios.

Within the Investors Leadership Network, we are working on further improvements in disclosure according to the framework of the TCFD. The aim is to develop guidelines for the members of the network and to publish these by the end of 2019. In 2019, the working group will extend its focus to the disclosures of investee companies: how can we best use them for investment decisions and active ownership?

The signed IMVB covenant means that PGGM will start implementing it on behalf of its clients in 2019. We are developing an ESG screening methodology that must also include the OECD guidelines and IMVB criteria. In preparation for the implementation of this screening, as of 1 January 2019 we will only present product exclusions and legal exclusions on our website. We no longer present the exclusions after engagement on the website: this category of companies is expected to change because of the increased requirements for screening and the call for shareholder dialogue on ESG-related issues.

The current thinking about positive impact is also developing. The publication of the SDI volume in this annual report is the starting point for further discussion and research on measuring impact, both financially and physically. We also aim to improve the identification of the negative impact of these investments.

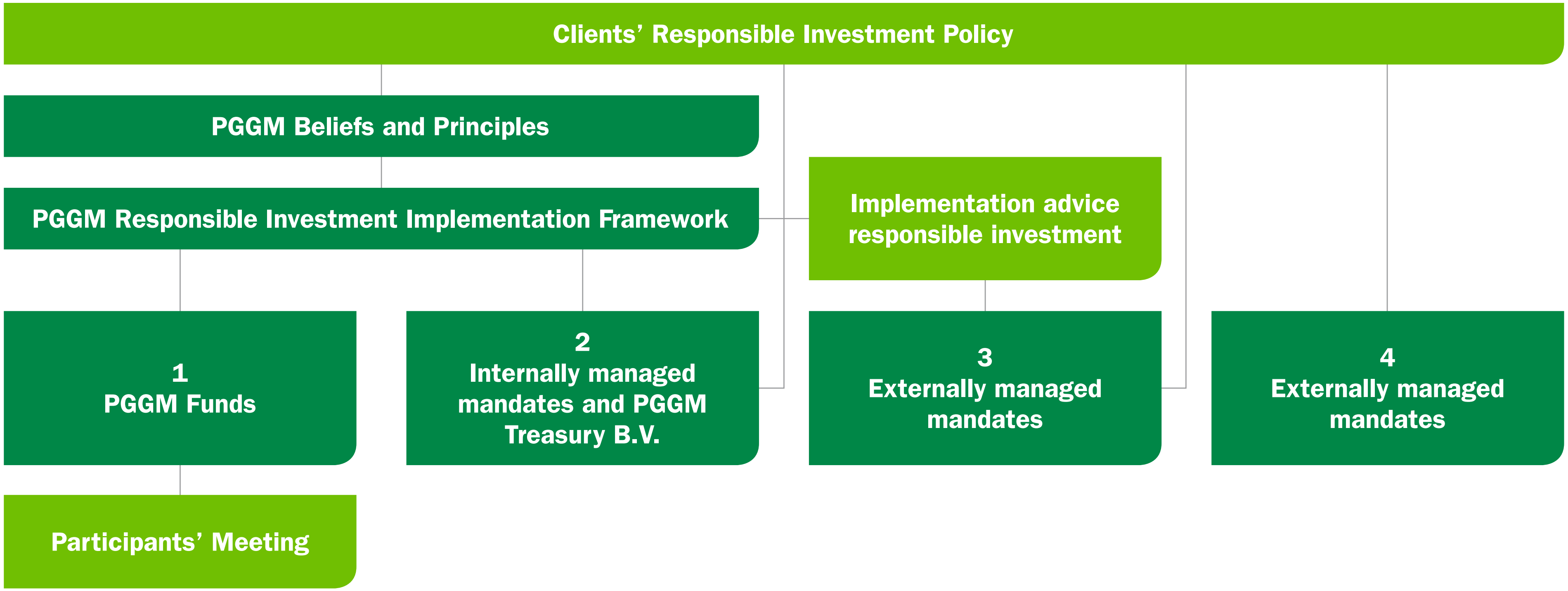
A number of our clients will be drafting new investment policies in 2019, in which the OECD guidelines and the IMVB covenant are important factors. We are happy to make an impactful contribution to this policy development and its implementation.

Appendix 1 Implementation of Responsible Investment

The PGGM Beliefs and foundations and the PGGM Responsible Investment Implementation Framework, suplemented by implementation guidelines for individual investment categories, apply to all investment and advisory activities that fall within the following three categories:

(1) We manage various PGGM mutual funds in which multiple clients participate, as well as the activities of PGGM Treasury B.V.
(2) We manage internal mandates for individual clients.
(3) We provide implementation advice to clients that invest in externally managed mandates via PGGM.

We also manage external mandates to which the PGGM Beliefs and Principles and the PGGM Responsible Investment Implementation Framework are not directly or indirectly applied (4).



Appendix 2 Engagement

Companies with which PGGM and GES engaged during 2018

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
ACCIONA	Spain	Europe (excl. the Netherlands)	✓				
ADANI ENTERPRISES	India	Asia		✓			
ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED	India	Asia		✓			
ADANI POWER	India	Asia		✓			
ADITYA BIRLA FIN.	India	Asia		✓			
AGRICULTURAL BANK OF CHINA LTD	China	Asia	✓				
AIRASIA BERHAD	Malaysia	Asia	✓				
AKBANK	Turkey	Rest of the world					✓
Alimentation Couche-Tard Inc. Class B	Canada	North America					✓
ALLERGAN	Ireland	Europe (excl. the Netherlands)					✓
ALROSA	Russia	Rest of the world					✓
ALSTOM	France	Europe (excl. the Netherlands)					✓
ALUMINUM CORP OF CHINA LTD-H	China	Asia					✓
AMAZON.COM	United States	North America		✓			
American Express Company	United States	North America	✓				
Amgen Inc.	United States	North America			✓		
ANDRITZ AG	Austria	Europe (excl. the Netherlands)					✓
ANGLOGOLD ASHANTI LTD	South Africa	Rest of the world					✓
AP MOELLER MAERSK	Denmark	Europe (excl. the Netherlands)					✓
APPLE INC	United States	North America					✓
ARABTEC HOLDING	United Arab Emirates	Rest of the world					✓
ARCELORMITTAL	Luxembourg	Europe (excl. the Netherlands)		✓			
Archer-Daniels-Midland Company	United States	North America					✓
ASR the Netherlands NV	Netherlands	the Netherlands	✓				
Astellas Pharma Inc.	Japan	Asia	✓		✓		
ASTRA AGRO LESTARI	India	Asia		✓			
ASUSTEK COMPUTER INC	Taiwan	Asia					✓
ATLANTIA SPA	Italy	Europe (excl. the Netherlands)					✓
BANCO SANTANDER BRASIL	Brazil	Rest of the world	✓				
BANCO SANTANDER SA	Spain	Europe (excl. the Netherlands)	✓				
BANGKOK BANK PUBLIC	Thailand	Asia					✓

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
Bank of America	United States	North America	✓				
BANK OF BARODA	India	Asia	✓				
BARRICK GOLD CORP	Canada	North America		✓			
BARRY CALLEBAUT AG	Switzerland	Europe (excl. the Netherlands)					✓
BASHNEFT	Russia	Rest of the world					✓
BAYER AG	Germany	Europe (excl. the Netherlands)		✓			
BEZEQ	Israel	Rest of the world	✓				
BHARAT ELECTRONICS	India	Asia					✓
BHARAT HEAVY ELECTRICAL	India	Asia		✓			
BHP Billiton Limited	Australia	Rest of the world		✓		✓	
BOLIDEN	Sweder	Europe (excl. the Netherlands)		✓			
BOLLORE	France	Europe (excl. the Netherlands)	✓				
BP p.l.c.	United Kingdom	Europe (excl. the Netherlands)		✓			
BRASKEM SA	Brazil	Rest of the world	✓				
BRASKEM SA-ADR	United States	North America	✓				
BRAZILIAN PETROLEUM CORPORATION	United States	North America	✓				
BRF-BRASIL FOODS SA-ADR	United States	North America	✓				
Bristol-Myers Squibb Company	United States	North America					
Bunge Limited	United States	North America		✓		✓	
BYD CO LTD	China	Asia					✓
CAIXABANK SA	Spain	Europe (excl. the Netherlands)	✓				
Carrefour SA	France	Europe (excl. the Netherlands)					✓
CBS Corporation Class B	United States	North America	✓				
CCR SA	Brazil	Rest of the world	✓				
CEMEX	Mexico	Rest of the world					✓
CHAROEN POKPHAND FOODS	Thailand	Asia					✓
CHEVRON CORP	United States	North America					✓
CHINA COMMUNIC CONSTRU-H	China	Asia					✓
CHINA HUARONG ASSET MANAGEMENT CO LTD	China	Asia	✓				
CHINA PETROLEUM & CHEMICAL CORP	China	Asia					✓
CHINA RAILWAY CONSTRUCTION CORP	China	Asia					✓
CHINA RAILWAY GROUP LTD	China	Asia					✓
CHINA STEEL CORPORATION	Taiwan	Asia					✓

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
CHOCOLADEFABRIKEN LINDT	Switzerland	Europe (excl. the Netherlands)					✓
Chubu Electric Power Company,Incorporated	Japan	Asia	✓	✓			
CIA VALE DO RIO	United States	North America					✓
CK HUTCHISON HOLDINGS	China	Asia					✓
CLP HOLDINGS LTD	Hong Kong	Asia					✓
COAL INDIA LIMITED	India	Asia					✓
COCA-COLA CO	United States	North America					✓
COGNIZANT TECHNOLOGY SOLUTIONS	United States	North America	✓				
COLGATE-PALMOLIVE	United States	North America					✓
Comcast Corporation Class A	United States	North America	✓				
COMPANHIA SIDERURGICA NACIONAL	Brazil	Rest of the world					✓
Costco Wholesale Corporation	United States	North America					✓
CREDIT SUISSE GROUP AG	Switzerland	Europe (excl. the Netherlands)	✓				
CVS Health Corporation	United States	North America	✓				
DAEWOO SHIPBUILDING & MARINE ENGINEERING	South Korea	Asia					✓
Daiichi Sankyo Company, Limited	Japan	Asia	✓		✓		
DANSKE BANK	Denmark	Europe (excl. the Netherlands)	✓				
DASSAULT AVIATION	France	Europe (excl. the Netherlands)					✓
Derwent London plc	United Kingdom	Europe (excl. the Netherlands)	✓	✓			✓
DEUTSCHE BANK	Germany	Europe (excl. the Netherlands)	✓				
DEUTSCHE POST	Germany	Europe (excl. the Netherlands)					✓
DEUTSCHE TELEKOM	Germany	Europe (excl. the Netherlands)					✓
Dexus	Australia	Rest of the world	✓	✓			✓
DGB FINANCIAL GROUP CO LTD	South Korea	Asia	✓				
DOMINION ENERGY	United States	North America					✓
Dow Chemical Co	United States	North America		✓			
DUKE ENERGY CORP NEW COM NEW COM NEW	United States	North America					✓
DXC Technology Co	United States	North America					✓
ECOPETROL SA	Colombia	Rest of the world		✓			
EDP ENERGIAS DE PORTUGAL	Portugal	Europe (excl. the Netherlands)					✓
EDP ENERGIAS DO BRASIL SA	Brazil	Rest of the world					✓
Eisai Co., Ltd.	Japan	Asia	✓		✓		
ELECTRICITE DE FRANCE	France	Europe (excl. the Netherlands)					✓

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
ELECTRICITY GENERATING NVDR	Thailand	Asia					✓
ELETROBRAS	Brazil	Rest of the world					✓
ENBRIDGE	Canada	North America					✓
ENEL	Italy	Europe (excl. the Netherlands)					✓
ENGIE SA	France	Europe (excl. the Netherlands)		✓			✓
ENI	Italy	Europe (excl. the Netherlands)	✓				
Equifax	United States	North America	✓				
EVERGREEN MARINE	Taiwan	Asia		✓			
Exxon Mobil	United States	North America	✓				
FACEBOOK	United States	North America					✓
FAST RETAILING CO	Japan	Asia					✓
FGV HOLDINGS BHD	Malaysia	Asia					✓
FIAT CHRYSLER AUTOMOBILES	Netherlands	the Netherlands					✓
FORMOSA PLASTICS CORP	Taiwan	Asia					✓
FREEPORT MCMORAN	United States	North America		✓			
G4S	United Kingdom	Europe (excl. the Netherlands)					✓
GAP	United States	North America					✓
GENERAL ELECTRIC	United States	North America	✓				
General Mills, Inc.	United States	North America			✓		
GENERAL MOTORS	United States	North America		✓			
GERDAU PN	Brazil	Rest of the world					✓
GGP, Inc.	United States	North America	✓	✓			✓
GlaxoSmithKline plc	United Kingdom	Europe (excl. the Netherlands)	✓	✓	✓		
GLENCORE PLC	Jersey	Europe (excl. the Netherlands)					✓
GLOBAL TELECOM HOLDING SAE	Egypt	Rest of the world					✓
GOLDMAN SACHS GROUP	United States	North America	✓				
GOODYEAR TIRE & RUBBER	United States	North America					✓
Grasim Industries	India	Asia		✓			
GRUPA AZOTY AS	Poland	Europe (excl. the Netherlands)	✓				
GRUPO MEXICO	Mexico	Rest of the world					✓
GRUPO TELEVISA	United States	North America	✓				
GUANGZHOU AUTOMOBILE GROUP	China	Asia	✓				
HABIB BANK	Pakistan	Asia	✓				

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
HANWHA CHEMICAL CORP	South Korea	Asia					✓
HARMONY GOLD	South Africa	Rest of the world		✓			
HASBRO	United States	North America					✓
HEIDELBERGCEMENT	Germany	Europe (excl. the Netherlands)					✓
HENNES & MAURITZ	Sweder	Europe (excl. the Netherlands)					✓
HERSHEY	United States	North America					✓
HINDALCO	India	Asia					✓
HON HAI PRECISION INDUSTRY CO	Taiwan	Asia		✓			
Honda Motor Co., Ltd.	Japan	Asia	✓				
HSBC HOLDINGS	United Kingdom	Europe (excl. the Netherlands)	✓				
HUADIAN FUXIN ENERGY CORP	China	Asia					✓
HUGO BOSS	Germany	Europe (excl. the Netherlands)					✓
HYUNDAI HEAVY INDUSTRIES CO LTD	South Korea	Asia					✓
HYUNDAI MOTOR CO LTD	South Korea	Asia	✓				
IBERDROLA SA	Spain	Europe (excl. the Netherlands)					✓
IMPALA PLATINUM HOLDINGS	South Africa	Rest of the world					✓
INCITEC PIVOT LTD	Australia	Rest of the world					✓
INDIAN OIL CORPORATION LIMITED	India	Asia					✓
INDOFOOD SUKSES MAKMUR	India	Asia					✓
INDUSTRIAL & COMMERCIAL BANK OF CHINA	China	Asia	✓				
ING Groep NV	Netherlands	the Netherlands	✓				
JASTRZEBSKA SPOLKA WEGLOWA	Poland	Europe (excl. the Netherlands)					✓
JBS SA	Brazil	Rest of the world	✓				
JOHNSON & JOHNSON	United States	North America					✓
KASIKORNBANK	Thailand	Asia					✓
KELLOGG CO	United States	North America					✓
KEPPEL CORP LTD	Singapore	Asia	✓				
KGHM	Poland	Europe (excl. the Netherlands)					✓
KINDER MORGAN	United States	North America					✓
KONINKLIJKE PHILIPS NV	Netherlands	the Netherlands	✓				
KOREA AEROSPACE INDUSTRIES	South Korea	Asia	✓				
KOREA ELECTRIC POWER CORPORATION	South Korea	Asia					✓
KOREAN AIR LINES CO LTD	South Korea	Asia	✓				

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
KRUNG THAI BANK LTD THB5.15 (NVDR)	Thailand	Asia					✓
LAFARGEHOLCIM	Switzerland	Europe (excl. the Netherlands)					✓
LG CHEMICAL	South Korea	Asia		✓			
LG CORP	South Korea	Asia	✓				
LG ELECTRONICS	South Korea	Asia		✓			
Liberty Global Inc. Cl A	United States	North America	✓				
LINDT & SPRUENGLI AG	Switzerland	Europe (excl. the Netherlands)					✓
MARUHA NICHIRO CORP	Japan	Asia					✓
MATTEL	United States	North America					✓
MCDONALD'S CORP	United States	North America					✓
McKesson Corporation	United States	North America	✓				
Medtronic plc	Ireland	Europe (excl. the Netherlands)	✓		✓		
Merck & Co., Inc.	United States	North America	✓		✓		
METALLURGICAL CORPORATION OF CHINA	China	Asia		✓			
MEXICHEM SAB DE CV	Mexico	Rest of the world					✓
MMC NORILSK NICKEL	United States	North America		✓			
MMG LTD	Hong Kong	Asia					✓
MONDELEZ INTERNATIONAL	United States	North America					✓
MOTOROLA SOLUTIONS	United States	North America					✓
Mylan N.V.	United Kingdom	Europe (excl. the Netherlands)			✓		
NESTLE	Switzerland	Europe (excl. the Netherlands)					✓
NEWCREST MINING LTD	Australia	Rest of the world		✓			
NEWMONT MINING CORP	United States	North America					✓
NEXT	United Kingdom	Europe (excl. the Netherlands)					✓
NINTENDO CO	Japan	Asia		✓			
NISOURCE	United States	North America					✓
Nissan Motor Co., Ltd.	Japan	Asia	✓				
NORDEA BANK	Sweder	Europe (excl. the Netherlands)	✓				
NORSK HYDRO	Norway	Europe (excl. the Netherlands)		✓			
Novartis AG	Switzerland	Europe (excl. the Netherlands)			✓		
NRG ENERGY	United States	North America		✓			
NTPC	India	Asia					✓
NUTRIEN LTD	Canada	North America					✓

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
OCADO GROUP	United Kingdom	Europe (excl. the Netherlands)					✓
OIL & NATURAL GAS CORP	India	Asia					✓
OJI HOLDINGS CORPORATION	Japan	Asia		✓			
OLYMPUS CORP	Japan	Asia	✓				
Oracle	United States	North America	✓				
PANASONIC CORPORATION	Japan	Asia	✓				
PEGATRON	Taiwan	Asia					✓
PEPSICO	United States	North America					✓
PETROBRAS	Brazil	Rest of the world	✓				
Pfizer Inc.	United States	North America	✓		✓		
PG&E CORP	United States	North America					✓
PHILLIPS 66	United States	North America					✓
PKN ORLEN	Poland	Europe (excl. the Netherlands)					✓
POSCO	South Korea	Asia					✓
POSCO DAEWOO	South Korea	Asia					✓
PROCTER & GAMBLE CO	United States	North America					✓
PTT PCL	Thailand	Asia		✓			
QUANTA COMPUTER	Taiwan	Asia					✓
RATCHABURI ELECTRICITY GENERATING HOLDING	Thailand	Asia					✓
RECKITT BENCKISER	United Kingdom	Europe (excl. the Netherlands)					✓
RELIANCE INDUSTRIES	India	Asia					✓
RENAULT	France	Europe (excl. the Netherlands)					✓
RESTAURANT BRANDS INTL INC	Canada	North America		✓			
RHEINMETALL	Germany	Europe (excl. the Netherlands)					✓
RIO TINTO	Australia	Rest of the world		✓			
ROSNEFT	Russia	Rest of the world					✓
Royal Dutch Shell Plc Class A	Netherlands	the Netherlands	✓	✓			✓
SAAB	Sweder	Europe (excl. the Netherlands)	✓				
SAINSBURY	United Kingdom	Europe (excl. the Netherlands)					✓
SAMSUNG C&T CORP	South Korea	Asia	✓				
SAMSUNG ELECTRONICS	South Korea	Asia	✓				
SAMSUNG HEAVY INDUSTRIES	South Korea	Asia					✓
SAMSUNG SDI	South Korea	Asia		✓			

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
SANTANDER CONSUMER USA HOLDI	United States	North America	✓				
SAP SE	Germany	Europe (excl. the Netherlands)	✓				
SEMPRA ENERGY	United States	North America					✓
Shionogi & Co., Ltd.	Japan	Asia			✓		
SHIRE LTD	Jersey	Europe (excl. the Netherlands)	✓				
SIAM COMMERCIAL BANK P-NVDR	Thailand	Asia					✓
SIBANYE-STILLWATER	South Africa	Rest of the world					✓
SIEMENS	Germany	Europe (excl. the Netherlands)					✓
SIEMENS GAMESA RENEWABLE ENERGY SA	Spain	Europe (excl. the Netherlands)					✓
SINA CORP	China	Asia					✓
SINGAPORE TECHNOLOGIES ENGINEERING	Singapore	Asia	✓				
SINOPEC SHANGHAI PETROCHEM-H	China	Asia					✓
SK HOLDINGS CO LTD	South Korea	Asia	✓				
SOCIEDAD QUIMICA Y MINERA DE CHILE	Chile	Rest of the world					✓
SOUTH32 LTD	Australia	Rest of the world					✓
SOUTHERN COPPER CORPORATION	United States	North America					✓
STEEL AUTHORITY OF INDIA	India	Asia					✓
STRYKER CORP	United States	North America	✓				
SUMITOMO CORP	Japan	Asia					✓
SUMITOMO METAL MINING CO LTD	Japan	Asia		✓			
SUN HUNG KAI PROPERTIES	Hong Kong	Asia					✓
SUZANO PAPEL E CELULOSE	Brazil	Rest of the world					✓
T-MOBILE US	United States	North America	✓				
Taishin Financial Holdings Co., Ltd.	Taiwan	Asia	✓		✓		
Takeda Pharmaceutical Co. Ltd.	Japan	Asia					✓
TATA POWER COMPANY LTD	India	Asia					✓
TATA STEEL	India	Asia		✓			
TDK CORP	Japan	Asia					✓
Tesco PLC	United Kingdom	Europe (excl. the Netherlands)					✓
TESLA INC	United States	North America					✓
THAI UNION FROZEN PROD-NVDR	Thailand	Asia	✓				
THE PEOPLE'S INSURANCE CO	China	Asia	✓				
THYSSENKRUPP	Germany	Europe (excl. the Netherlands)					✓

Name organisation	Country (headquarters location)	Region	Good Corporate Governance	Climate Change, Pollution and Emissions	Health-care	Water Scarcity	Human Rights
TIGER BRANDS	South Africa	Rest of the world					✓
TOKYO ELECTRIC POWER COMPANY	Japan	Asia		✓			
TOSHIBA CORP	Japan	Asia		✓			
Total SA	France	Europe (excl. the Netherlands)		✓			
TOYOTA MOTOR CORPORATION	Japan	Asia		✓			
TRANSCANADA CORP	Canada	North America		✓			
TURKIYE GARANTI BANKASI	Turkey	Rest of the world					✓
TURKIYE HALK BANKASI	Turkey	Rest of the world					✓
TWENTY FIRST CENTURY FOX INC	United States	North America					✓
Tyson Foods, Inc. Class A	United States	North America		✓		✓	
UNILEVER	Netherlands	the Netherlands					✓
UNITED TECHNOLOGIES CORP	United States	North America					✓
UPL LIMITED	India	Asia					✓
VALE SA	Brazil	Rest of the world					✓
VEOLIA ENVIRONNEMENT SA	France	Europe (excl. the Netherlands)	✓				
VISTRA ENERGY CORP	United States	North America		✓			
VOLKSWAGEN AG	Germany	Europe (excl. the Netherlands)		✓			
Vonovia SE	Germany	Europe (excl. the Netherlands)	✓	✓			✓
VTB BANK	Russia	Rest of the world		✓			
WARTSILA OYJ ABP	Finland0	Europe (excl. the Netherlands)					✓
Wells Fargo & Company	United States	North America	✓				
WESFARMERS	Australia	Rest of the world					✓
WILMAR INTERNATIONAL LIMITED	Singapore	Asia					✓
WOORI BANK	South Korea	Asia	✓				
WYNN RESORTS	United States	North America					✓
YAHOO JAPAN CORP	Japan	Asia		✓			
ZIJIN MINING GROUP CO LTD	China	Asia		✓			
ZIMMER BIOMET HOLDINGS INC	United States	North America	✓				
ZTE CORP-H	China	Asia		✓			

Appendix 3 Accountability

In this 2018 Annual Responsible Investment Report, we provide information for our clients, their participants and other interested parties on the activities undertaken in the field of responsible investment in 2018. Where we refer to clients in this report we mean both the clients participating in the PGGM funds and the clients for whom we manage mandates. If we state that we invest in a certain portfolio, we always mean that we do so on behalf of our clients. The information in this annual report only covers responsible investment activities carried out by PGGM. More extensive information on PGGM N.V. and PGGM Coöperatie U.A., and about sustainability at the PGGM N.V. level is available on PGGM's website and in the 2018 PGGM N.V. Annual Report. This PGGM Annual Responsible Investment Report provides information on the 2018 financial year running from 1 January to 31 December 2018. The report is a progress report and does not provide a comprehensive overview of activities and current investments. It is limited to the responsible investment activities carried out by PGGM Vermogensbeheer B.V. in 2018.

Reporting and Transparency

We publish our Annual Responsible Investment Report every year on our website. We also provide quarterly reports to our clients and write online blogs that explain our position on specific topics. Finally, we also enable our clients to provide their participants and other stakeholders with annual information on the investment portfolio and on the parties with which we do business on their behalf.

Guidelines Followed

In compiling the PGGM 2018 Annual Responsible Investment Report we have broadly adhered to the international reporting principles of the Global Reporting Initiative (GRI), the GRI Standards. The GRI standards relate to both content choices (materiality, involvement of stakeholders, the sustainability context, completeness) and the quality of the reporting (balance, comparability, accuracy, timeliness, clarity, reliability). We did not follow the GRI to the letter in this report. We adhered as much as possible to the reporting principles specified in the GRI in compiling this annual report. The GRI standards do not fully apply to this annual report, because this report concerns asset management activities and is not relevant at the PGGM N.V. level. Further information on the sustainability activities at the corporate level can be found in the PGGM N.V. Annual Report, which fully adheres to the GRI reporting guidelines. The 6 principles of the PRI were also used as a reporting guideline. As a signatory to the PRI, we report on our activities to the PRI each year. The corresponding public report is available on PRI's website.

Selection of material subjects

We have selected the relevant subject areas on the basis of a materiality analysis. During the process of identifying the material subject areas we consulted our clients, our key stakeholders. Internally, we consulted the asset management organisation, as well as the client advisory organisation. In addition, we conducted a media analysis of our own and our auditor conducted an external media analysis. We assigned a higher priority to subject areas that received a great deal of media attention.

In defining relevant subject areas we took external developments into account. The key sustainability subject areas, relevant laws and regulations and international agreements in each chapter form the framework, a broader context within which our activities take place.

The table below contains the key material subject areas for 2018.
We consider it essential for these subject areas to be dealt with in the 2018 Annual Responsible Investment Report.

Material Subject Areas 2018
Climate research
Impact management project
ING
IMVB
Sustainable Development Investments (SDI)

Review

KPMG Sustainability has reviewed the PGGM 2018 Annual Responsible Investment Report. See the Assurance Report in Appendix 4.

Appendix 4 Assurance report of the independent auditor

To the readers of the Annual Responsible Investment Report 2018 of PGGM Vermogensbeheer B.V.

Our conclusion

We have reviewed the Annual Responsible Investment Report 2018 (hereafter: the Report) of PGGM Vermogensbeheer B.V. (hereafter: 'PGGM') based in Zeist. A review is aimed at obtaining a limited level of assurance.

Based on our procedures performed, nothing has come to our attention that causes us to believe that the Report is not prepared, in all material respects, in accordance with the reporting criteria as included in the section 'reporting criteria'.

Basis for our conclusion

We have performed our review on the Report in accordance with Dutch law, including Dutch Standard 3000A 'Assurance-opdrachten anders dan opdrachten tot controle of beoordeling van historische financiële informatie (attest-opdrachten)' (Assurance engagements other than audits or reviews of historical financial information (attestation engagements)).

Our responsibilities under this standard are further described in the 'Our responsibilities for the review of the Report' section of our report.

We are independent of PGGM Vermogensbeheer B.V. in accordance with the 'Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

We believe that the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Reporting criteria

The information in the Report needs to be read and understood together with the reporting criteria. PGGM is solely responsible for selecting and applying these reporting criteria, taking into account applicable law and regulations related to reporting.

The reporting criteria used for the preparation of the information in the Report are based on the principles of the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) supplemented with internally developed reporting criteria.

Limitations to the scope of our review

The Report includes prospective information such as ambitions, strategy, plans, expectations, estimates and risk assessments. Inherently the actual future results are uncertain. We do not provide any assurance on the assumptions and achievability of prospective information in the Report.

The references to external sources or websites in the Report are not part of the information itself as reviewed by us. We therefore do not provide assurance on this information.

Responsibilities of Management and the Supervisory Board for the Report

Management is responsible for the preparation of the Report in accordance with the reporting criteria as included in section 'Appendix 3 Accountability', including the identification of stakeholders and the definition of material matters. The choices made by Management regarding the scope of the Report and the reporting policy are summarized in section 'Appendix 3 Accountability'.

Management is also responsible for such internal control as Management determines is necessary to enable the preparation of the Report that is free from material misstatement, whether due to fraud or error.

The Supervisory Board is responsible for overseeing the reporting process of PGGM.

Our responsibilities for the review of the Report

Our objective is to plan and perform the review in a manner that allows us to obtain sufficient and appropriate assurance evidence for our conclusion.

Procedures performed to obtain a limited level of assurance are aimed to determining the plausibility of information and vary in nature and timing from, and are less in extent, than for a reasonable assurance engagement. The level of assurance obtained in review engagements with a limited level of assurance is therefore substantially less than the assurance obtained in audit engagements.

Misstatements can arise from fraud or errors and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users taken on the basis of the information in the Report. The materiality affects the nature, timing and extent of our review procedures and the evaluation of the effect of identified misstatements on our conclusion.

We apply the 'Nadere voorschriften kwaliteitssystemen' (NVKS, Regulations on quality management systems) and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have exercised professional judgement and have maintained professional scepticism throughout the review, in accordance with the Dutch Standard 3000A, ethical requirements and independence requirements.

Our review engagement included, among others, the following procedures:

- Performing an analysis of the external environment and obtaining an understanding of relevant themes and issues, and the characteristics of the company;
- Evaluating the appropriateness of the reporting criteria used, their consistent application and related disclosures in the Report. This includes the evaluation of the results of the stakeholders' dialogue and the reasonableness of estimates made by the Management Board;
- Obtaining an understanding of the reporting processes for the information, including obtaining a general understanding of internal control relevant to our review;
- Identifying areas in the Report with a higher risk of misleading or unbalanced information or material misstatements, whether due to fraud or error. Designing and performing further assurance procedures aimed at determining the plausibility of the information in the Report responsive to this risk analysis. These procedures included among others:
  - Interviewing relevant staff at corporate level responsible for the responsible investment policy and results;
  - Interviewing relevant staff responsible for providing the information for, carrying out internal control procedures on, and consolidating the data in the information;
  - Obtaining assurance information that the information in the Report reconciles with underlying records of the company;
- Reviewing, on a limited test basis, relevant internal and external documentation.
- Evaluating the presentation, structure and content of the Report; To consider whether the information in the Report as a whole, including the disclosures, reflects the purpose of the reporting criteria used.

We communicate with the Management regarding, among other matters, the planned scope and timing of the review and significant findings that we identify during our review.

Amsterdam, 29 April 2019
KPMG Sustainability,

Part of KPMG Advisory N.V.

W.J. Bartels,
Partner

Disclaimer

We provide the PGGM Annual Responsible Investment Report 2018 a service for our client and other interested parties. Although we have taken the utmost care in compiling this report, we cannot guarantee the the information is complete and/or accurate in all cases. Nor do we guarantee that its use will lead to the correct analysis for specific purposes. Therefore, we can in no case be held liable for – among other things but not exclusively – any eficiencies, inaccuracies and/or ubsequent amendments. The use of this report is not permitted without our prior written consent, other than for the stated purpose for which we have compiled this report. In the event of discrepancies between different versions of the PGGM Annual Responsible Investment Report 2018, the Dutch version shall prevail.