Still Undermining our Future?

Fair Finance Guide Netherlands

27 November 2018

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The Dutch Fair Finance Guide is a coalition of the following organizations:

Amnesty International, FNV, Milieudefensie, Oxfam Novib, PAX and World Animal Protection

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Summary

Climate change is not just an environmental problem. It is a disruptive global development concretely impacting the lives of people, especially of the poorest people in developing countries. Their harvests are lost, their homes flooded, their sources of income depleted. The use of fossil fuels for electricity and other energy needs is largely to blame. The lending and investment choices of financial institutions around the globe with regard to renewable energy and fossil fuels therefore play a role when it comes to mitigating the impacts of climate change for all people on this planet.

The role of financial institutions

By making responsible lending and investment choices, banks and insurance companies could play a major role in accelerating the phase out of fossil fuels and the further development of renewable energy generation. Against this backdrop, and in preparation for the COP24 climate summit in Katowice in Poland in December 2018, this study examines the changes since the Paris Agreement on climate change (December 2015) in the lending and investment patterns of Dutch financial institutions, when it comes to renewable energy and fossil fuels.

Objective and scope of this study

This study focuses on loans to, and investments in, energy companies and projects by the seven most important banks and the seven most important insurance companies operating on the Dutch consumer market. For the two-year period 2016-2017, this study estimates the percentage of all energy loans and investments geared towards fossil fuels and the percentage geared towards renewable energy. The analysis focusses on the financing of 292 global and national energy companies, active in fossil fuels and/or in renewable energy, and 85 renewable energy projects, through loans, underwriting and investments in shares and bonds.

For each of the companies and projects, this study first estimated which proportion of their investments can be attributed to fossil fuels, to renewable energy, and to other activities inside and outside the energy sector. Using these proportions made it possible to attribute a percentage of each loan to, and each investment in, the selected companies and projects to fossil fuels, to renewable energy and to other activities.

To understand if the percentages of financing geared toward fossil fuels and to renewable energy have changed since the Paris Agreement, the average findings for the Dutch banks for the 2016-2017 period were compared with findings for the 2013-2014 period as published in November 2015 in the study *Undermining our Future*. This previous study did only analyse the financing activities of banks. Investments by insurance companies have not been analysed before for the Fair Finance Guide.

Modest trend towards renewable energy

Overall, this study points to a trend among Dutch banks and insurance companies towards more financing for renewable energy, both in the values of loans and investments and in the percentage of energy loans and investments going to renewable energy. But although the trends are positive towards renewable energy, the percentage of energy sector financing attributable to fossil fuels remains dominant for each form of financing when we look at the results for the selected banks and insurance companies collectively.

Energy financing by Dutch banks

Loans by Dutch banks to renewable energy increased by 51% in the research period, from USD 1.6 billion in 2016 to USD 2.4 billion in 2017. The proportion of all energy loans attributable to renewable energy increased from 22% in 2016 to 28% in 2017. Compared to the average 22% share of renewable energy in energy loans by Dutch financial institutions in 2013-2014, we now found an average 25% share for 2016-2017.

Loans by Dutch banks to fossil fuels increased by 14% in the research period, from USD 5.5 billion in 2016 to USD 6.3 billion in 2017. The proportion of all energy loans attributable to fossil fuels decreased from 78% in 2016 to 72% in 2017. Compared to the average 78% share of fuels in energy loans by Dutch financial institutions in 2013-2014, we now found an average 75% share for 2016-2017.

Underwriting by Dutch banks for renewable energy increased by 15% in the research period, from USD 307 million in 2016 to USD 352 million in 2017. The proportion of all energy underwriting attributable to renewable energy increased from 33% in 2016 to 44% in 2017. Compared to the average 10% share of renewable energy in energy underwriting by Dutch banks in 2013-2014, we now found an average 38% share for 2016-2017.

Underwriting by Dutch banks for fossil fuels decreased by 30% in the research period, from USD 638 million in 2016 to USD 447 million in 2017. The proportion of all energy underwriting attributable to fossil fuels decreased from 67% in 2016 to 56% in 2017. Compared to the average 90% share of fossil fuels in energy underwriting by Dutch banks in 2013-2014, we now found an average 62% share for 2016-2017.

Energy investments by insurance companies and banks

On average over the 2016-2017 period, insurance companies and banks operating on the Dutch market owned or managed more than USD 15 billion in shares attributable to fossil fuels compared with USD 1.2 billion attributable to renewable energy. As of the third quarter of 2016 the value of shareholdings attributable to fossil fuels owned or managed by the insurance companies and banks has fallen below the baseline. This indicates a divestment trend away from fossil fuels.

The value of shareholdings attributable to renewable energy increased slightly stronger than the baseline during the research period (2016-2017), indicating that the insurance companies and banks have been investing more in the shares of companies attributable to renewable energy. The percentage of renewable energy in shareholding values has increased from 6% in the last quarter of 2014 to 8% in the last quarter of 2017. The percentage of fossil fuels in shareholding values has decreased from 94% in the last quarter of 2014 to 92% in the last quarter of 2017.

With regards to bondholdings, no trend could be identified during the research period, due to limited data availability. At the end of 2017, the value of bondholdings attributable to renewable energy amounted to USD 1.1 billion, or 6% of all energy bondholdings owned or managed by the insurance companies and banks. This means that 94% of all energy bondholdings owned or managed by the insurance companies and banks, with a value of USD 18.2 billion, is attributable to fossil fuels.

Climate change commitments

All of the researched 14 banks and insurance companies have signed at least one statement expressing the need to reduce greenhouse gas emissions in order to halt climate change. Overall, the results of this study indicate that the Dutch financial sector as a whole is inclined to live up to these commitments and move their financing towards renewable energy. But given the dominant percentages of all loans and investments still supporting fossil fuels, much more needs to be done for the Dutch financial sector to take its responsibility in contributing to the mitigation of climate change.

Results individual banks and insurance companies

This study also shows individual banks and insurance companies staying far behind in the average trend towards increasing renewable energy financing. ING Bank accounts for USD 8.0 billion of fossil fuel financing (loans and underwriting). Although down from 87% in 2013-2014, this still accounts for 83% of ING Bank's total energy financing in the 2016-2017 research period. ABN Amro was responsible for USD 3.4 billion of fossil fuel financing, representing 82% of its total energy financing in the 2016-2017 research period - up from 68% in the 2013-2014 period!

For 10 out of 12 insurance companies and banks owning or managing energy shares, the proportion of fossil fuels in the value of their energy shareholdings was more than 80% on average throughout the 2016-2017 research period. Only Triodos Bank and De Volksbank invested 100% in renewable energy. Three financial institutions actually increased their investments in shares attributable to fossil fuels during this period: ABN Amro, Van Lanschot Kempen and Vivat. In contrast, three other financial institutions (Allianz, ING Bank and NN Group) improved the proportion of the value of their shareholdings attributable to renewable energy during the research period, mainly by making net divestments from their shareholdings attributable to fossil fuels.

For the 9 insurance companies and banks holding bonds, except for Triodos Bank, the proportion of bondholdings attributable to fossil fuels averaged between 76% and 95%.

As climate change is already impacting the lives of people severely, especially of the poorest people in developing countries, all banks and insurance companies should urgently shift all forms of energy loans and investments towards renewable energy.

Introduction

Climate change is not just an environmental problem. It is a disruptive global development concretely impacting the lives of people, especially of the poorest people in developing countries. Their harvests are lost, their homes flooded, their sources of income depleted. The use of fossil fuels for electricity and other energy needs is largely to blame, as this represents the single biggest source of greenhouse gas emissions globally. Based on current trends, the world will be in the best case 3°C - and in the worst case even 4 to 6°C - hotter by the end of the century. Such temperatures will cause untold human devastation and exacerbate poverty and hunger, firstly in developing countries.

Despite some steps in the right direction to tackle climate change by governments and the private sector, much more is needed to make the transition that is needed. Not only governments should act, but private sector actors such as financial institutions should take their own responsibility as well. With their loans and investments, banks and insurance companies are major distributors of capital. By making responsible lending and investment choices, they could play a major role in accelerating the phase out of fossil fuels and the further development of renewable energy generation.

The urgency for governments and private sector actors to act on climate change, became particularly clear around the COP21 climate summit in December 2015 in Paris when the *Paris Agreement* on climate change, was agreed by more than 190 countries. Just before this summit, Fair Finance Guide International (FFGI) published *Undermining our Future*, a study analysing the trends in financing renewable energy and fossil fuels by financial institutions assessed by the FFGI. Around COP21 many financial institutions expressed their commitments to mitigate their impact on climate change, and to fulfil their role in achieving the global goal of keeping global warming below 1.5°C above pre-industrial levels.

Against this backdrop, and in preparation for the COP24 climate summit in Katowice (Poland) in December 2018, this report examines the changes since COP21 in the lending and investment patterns of financial institutions when it comes to renewable energy and fossil fuels. Together with the Fair Finance Guide coalitions in Sweden and France, the Dutch Fair Finance Guide (Eerlijke Geldwijzer) has initiated this research project. It aims to quantify in which energy sources the main financial institutions from these countries are investing in: are they still putting their money in fossil fuels, or have they shifted their funds towards forms of renewable energy? This research project aims to quantify the loans and investments by financial institutions used for the generation of different forms of energy, rank them on the share of fossil fuels in their portfolios and compare the findings with the 2015 study.

This report presents and analyses the findings of the research project for the main seven banks and seven insurance companies operating in the Netherlands (see Table 2), comparing these findings with the results of the 2015 study as well. In Chapter 1 background information is provided on the impacts of climate change on the poorest people in developing countries. Also, the role and responsibility of the financial sector in this respect is discussed, as well as the collective commitments made by the Dutch financial sector. Chapter 2 discusses the methodology used for this research project. Chapter 3 presents the results in separate sections for each financial institution. Also, the commitments made with regard to climate change made by each bank and by each insurance company are discussed. 4.6 summarizes the results for all Dutch financial institutions and ranks their performance in different investment categories. A summary of the findings of this report can be found on the first pages of this report.

The Fair Finance Guide (Eerlijke Geldwijzer) is a partnership between Amnesty International, Dutch labour union FNV, Friends of the Earth Netherlands, Oxfam Novib, PAX and World Animal Protection. Not all partners of the Fair Finance Guide work on all themes and/or sectors on which the research of the Fair Finance Guide focuses. Reports on specific themes therefore do not necessarily reflect the opinion of all partners of the Fair Finance Guide.

Chapter 1 Background: Climate change and the poor

1.1 How climate change affects the global poor

The climate on earth is changing: globally, the temperature is increasing. As a result, ecosystems are changing, and societies are at risk of being struck by floods, droughts and cyclones, particularly in the developing world. This process is a direct result of human activities that continuously increase the concentration of greenhouse gases in the atmosphere.[1]

According to the Intergovernmental Panel on Climate Change (IPCC), globally the temperature in the 21st century will increase between 0.3°C and 4.8°C on average, depending on future developments. This will increase the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. To reduce climate change risks, both mitigation and adaptation are necessary. In order to limit the global rise in temperature to 2°C, it is necessary for emissions to be reduced with 40 to 70% by 2050 compared to the level of emissions in 2010.[2]

While in 2020 the energy related emission of CO_2 should not exceed 32 Gigatonnes, in 2014 global energy related emissions already reached 32.2 Gt. As early as 2015, the IEA warned of the challenges in reaching the objective to not increase the average temperature on earth by more than 2°C if CO_2-emissions kept increasing at this speed.[3]

Indeed, fossil fuels are the single biggest driver of climate change; if the world is to avoid exceeding dangerous global warming of 2°C, up to 80 percent of known fossil fuel reserves need to stay in the ground.[4] The major problem in this drama is coal. Coal-fired power plants are the biggest source of man-made CO_2 emissions. In the absence of unprecedented discontinuation or reduction in the global use of fossil fuels, there is a serious risk that the world is on track for a 4°C to 6°C temperature rise by the end of the century, exceeding even the worst-case scenarios outlined by the IPCC.[5]

Such elevated global temperature will severely impact millions of peoples' lives through drought, floods, food shortages, spread of communicable diseases, biodiversity loss, forced resettlement of communities and widespread loss of livelihood. This will impact firstly those who have contributed little to the current levels of greenhouse gases in the atmosphere, are most vulnerable and have the fewest options to adapt to a changing environment. This is likely to jeopardise – if not decimate – food and water availability and security for up to 400 million people across some of the poorest countries by the middle of the century, with 25 million additional malnourished children.[6]

Peru

The Quechua farmwomen grow their crops at a height of nearly 4,000 metres, nestled between the mountaintops and glaciers of the Andes. But these women are very concerned about extreme weather conditions. The melting ice caps are causing numerous landslides and the melted water regularly brings flooding. Potatoes grow well at this high altitude but are threatened by the extreme weather. Through rising temperatures and a rainy season that comes earlier and earlier, plant diseases can thrive at ever-increasing altitudes.

Photo: Ilvy Njiokiktjien

In the latest update of the State of Food Security and Nutrition in the World, the FAO finds that exposure to more complex, frequent and intense climate extremes is threatening to erode and reverse progress made in ending hunger and malnutrition in several regions. New evidence continues to show a rise in world hunger and a reversal of trends after a prolonged decline.

In 2017 the number of undernourished people is estimated to have increased to 821 million – around one out of every nine people in the world. Climate variability and extremes are among the key drivers behind this recent uptick in global hunger and one of the leading causes of severe food crises. The cumulative effect of

Niger

Hasan tends his mother's goat herd. His father has headed east with their herd of cows and camels, in search of food and water for the cattle. Hasan hopes to have his own herd of animals someday, just like his father. Life in Niger was never really easy, but climate change has made getting by in this poor country in the Sahel region even more difficult. The cattle herders have been hit especially hard by the extreme drought in recent years. The lack of water and food has led to starvation of their animals and to conflicts with other tribes over scarce water sources and grazing land.

Every year the cattle herders must travel farther and are away from their villages longer to find grazing land for their herds. They are on the move for half the year and only come home after the rainy season in the hope that the rains have come and turned their villages green. For those who remain – women, the elderly, and young children – the dry period is a time of scarcity. Climate change has directly led to extreme poverty in vulnerable countries such as Niger. More than 65% of its population has been forced to live on less than $1 per day.

Photo: Tom Saater

changes in climate is undermining all dimensions of food security – food availability, access, utilization and stability.[7]

Food shortages and malnutrition are not the only risks linked to ongoing climate change. There are many ways in which climate change already impacts the lives of people around the world and will continue to do so. From severe water scarcity to armed conflict over resources, climate change leads to misery for millions and poses a challenge that should be viewed within the context of this misery. In short: it is a moral challenge and it must be tackled by all parties involved with drastic and far-reaching efforts.

Avoiding devastating impacts is impossible without a rapid and global transition to low-carbon economies. Public policy responses to climate change brought hope with the Paris Agreement on climate change, as more than 190 countries in December 2015 for the first time committed to climate action. The summit has created more attention for climate change since then, with countries and parts of the business community, including financial institutions, making announcements toward tackling climate change. However, this response has been inconsistent: the deal is not sufficient to ensure a 3°C world.[8] The poorest and most vulnerable people are still to be exposed to the reality of rising sea-levels, floods, and droughts and to the projects of the fossil fuel industry, such as mines.

1.2 Role and responsibility of the financial sector

Similar to other private sector actors, financial institutions should take their responsibility with regard to climate change and act in their own sphere of influence. Gradually, this is being acknowledged more and more in the financial sector. Already, the view on climate change risks has evolved from being seen as part of 'extra-financial criteria' or ESG-criteria to a potential major financial risk threatening the business models of companies, and financial stability in general. The need to integrate climate change risks in financial decision making is becoming more apparent.

In 2014, the United Nations Environment Programme (UNEP) initiated an Inquiry into the Design of a Sustainable Financial System (UNEP Inquiry) which since has published various reports. They present policy options to deliver a step change in the financial system's effectiveness in mobilizing capital towards a green and inclusive economy that also addresses climate change risks.[9]

In December 2015, the Financial Stability Board (FSB), an international body that monitoring the global financial system, created an industry-led Task Force on Climate-Related Financial Disclosures (TCFD) to identify which financial assets will lose value due to climate related risks and to "develop voluntary, consistent climate-related financial disclosures for use by companies in providing information to lenders, insurers, investors and other stakeholders".[10] In June 2017 the TCFD published its Recommendations.

What becomes clear in all these studies, is that the challenge for financial institutions is to deal with climate change risks in a proactive way, by measuring and reporting the carbon footprint of their financial portfolios and presenting strategies to make their portfolio's consistent with the internationally agreed 2°C limit of temperature increase. This also requires having a strategy for the transition to a low-carbon economy, including the switch from using fossil fuel to renewable energy sources.

To complement their efforts to encourage companies in which they invest to measure, disclose and reduce emissions, it is the view of the Fair Finance Guide that financial institutions should also phase-out investment in and finance of activities with unacceptable high emissions. Therefore, the Fair Finance Guide pays special attention to the characteristics of the commitments made by financial institutions in their climate change policies. Furthermore, an investment and finance policy regarding climate change should include criteria for compensation, adaptation and lobbying against governmental climate change regulations.

Bangladesh

Floods come regularly to the village where Lipia and Zeyda live. Poor residents are extra vulnerable to the damage that is done by the flooding. People live in constant fear of losing their possessions and loved ones. They have no money to relocate and rebuild their lives in a safe place. Bangladesh, with its many rivers and deltas, is extremely vulnerable to climate change. Floods and cyclones ravage the poor country every year.

Photo: Gideon Mendel

1.3 Dutch financial institutions and climate change

Encouraged by the Fair Finance Guide and other government and civil society actors, the Dutch financial sector over the past few years has made several commitments to measure, disclose and reduce the climate change emissions they are financing:

- **Statement by Dutch Bank Directors**

  Just before the Copenhagen Climate Conference (COP) in 2009, most Dutch banks undersigned the *Copenhagen Communiqué* that called for an ambitious agreement to be concluded in Copenhagen. The Copenhagen Communiqué was published by The Prince of Wales's Corporate Leaders' Group on Climate Change and the University of Cambridge. It got broad support from business leaders across the world.

  The directors of the main Dutch banks additionally also signed a *Directors' statement* in which they pledged to support the deployment of renewable energy.

- **NVB Climate Statement**

  In November 2015, the Dutch Association of Banks (NVB) issued a *Climate Statement* in which they encourage the Dutch government to support a climate agreement that includes binding measures and to stimulate transparency about carbon emissions of companies. Such transparency would enable banks to bring their lending portfolio in line with climate change targets. The Climate Statement of the NVB has been renewed twice since then, as they are progressing with measuring financed climate change emissions.

- **DNB publications**

  In the past few years De Nederlandsche Bank (DNB), which is responsible for prudential supervision of the Dutch financial sector, has given attention to climate change risks in various statements and publications. In the latest publication, in October 2018, DNB published the results of a first stress test on financial institutions (banks, insurers, pension funds) looking at four different energy transition scenarios: "The stress test results suggest that the losses for financial institutions in the event of a disruptive energy transition could be sizeable, but also manageable. Individual financial institutions can mitigate the risks for their portfolio by taking energy transition risks into account. In addition, policy makers can help to avoid unnecessary losses by implementing timely, reliable and effective climate policies. As stress testing energy transition risks is a relatively new field of study, future work could help to further refine the results."

- **Spitsbergen Ambition**

  In the spring of 2018, the CEOs of a number of Dutch banks and insurance companies (ABN Amro, Actiam, Aegon, De Volksbank, ASR, Triodos, ING and Rabobank) together made a trip to Spitsbergen, to view the impacts and to discuss the steps they could take. As a result, in June 2018 they released the *Spitsbergen Ambition 2018-2020*. This is a commitment between Dutch financial institutions wishing to collectively combat climate change via their loans and investments. To make this possible they commit to the following concrete steps:

  - active measurement and external reporting on their climate impacts for all measurable loans and investments and using the results for sustainable investment strategies;
  - using climate scenario analyses and science-based targets to support financing and investment policies and strategies in order to comply with the Paris Agreement;
  - supporting governments in achieving their national climate targets. The financial institutions commit to the climate change targets set by the Dutch government: 49% CO2 reduction in 2030, 100% in 2050, and where possible sooner.

Chapter 2 Methodology

2.1 Introduction

This chapter provides an overview of the methodology used for this research project. First section 2.2 discusses the objective and scope of the research project. Section 2.3 then presents the selection of Dutch banks and insurance companies, while section 2.4 discusses which energy sectors are included in this research project as well as the companies selected within these sectors. Section 2.5 describes the types of financing and investments analysed in this research project, and section 2.6 is explaining how specific financing and investment amounts are assigned to each financial institution. Finally, section 2.7 discusses the data sources used and the currency used to report on the research findings.

2.2 Objective and scope

The objective of this research project is to quantify how the main banks and insurance companies in the Netherlands are dealing with their responsibility to mitigate climate change, by analysing their loans to, and investments in, companies active in various ways of energy generation. These loans and investments are grouped in four categories:

- Loans;
- Underwritings;
- Shareholdings; and
- Bondholdings.

The research project focuses on all global economic sectors involved in energy generation, categorised in three categories:

- Climate change mitigating sectors;
- Climate change inducing sectors; and
- Other energy sectors.

For the two-year period 2016-2017 the research project calculates, for each financial institution and for each category of loans and investments, the proportion of financing geared towards *Climate change mitigating sectors* and the proportion geared towards *Climate change inducing sectors*. For ease of communication, these two groups of sectors are indicated as “Fossil fuels” and “Renewable energy” in the analyses in this report.

All credits and underwritings provided by the selected financial institutions to the selected energy companies from January 2016 to the end of December 2017 are taken into account. For shareholdings and bondholdings the available quarterly data in this time period were used, which also allows for a trend analysis within the two year-period.

The financial institutions are ranked on the basis of their *Fossil fuels* proportions and the consolidated financing proportions for the full group are calculated for each loan and investment category. And where possible a comparison is made with the findings of the Fair Finance Guide International study *Undermining our Future*, published in November 2015, which focused on banks. This comparison aims to assess if banks have changed their financing and investment patterns after the Paris Agreement on climate change (concluded in December 2015).

While this study focuses on the way in which the main banks and insurance companies in the Netherlands are dealing with their responsibility to mitigate climate change, for practical reasons the scope of the research project does not include all aspects which could be of relevance. The study is clearly focused on direct loans to, and investments in, energy generating companies and their direct equipment suppliers. This means that, inter alia, the following aspects are not included in the scope of this research project:

- Indirect financing of energy companies, for instance through investments in bonds issued by other financial institutions (including multilateral development banks);

- The financing of companies engaged in research and development directed towards reducing the impact of existing energy sources or developing new sustainable energy sources;
- The GHG emissions caused by financial institutions through their own operations (offices, travel, etc.), as these are limited compared to financed emissions;
- Loans to, and investments in, other economic sectors which also might have an important impact on global GHG emissions;
- (Mortgage) loans to private customers and advisory services linked to these.

Included in this research project, but in a qualitative way rather than in a quantitative way, are programs and commitments of financial institutions to support climate change mitigation. Such programs and commitments are summarized as reference points in the sections for each financial institution in Chapter 3.

2.3 Selection of financial institutions

The *Fair Finance Guide International* consists of coalitions of civil society organizations from nine countries. Three coalitions participated in this research project: France, the Netherlands and Sweden. Each coalition focuses their study on several financial institutions with local operations in the coalitions' respective countries. All financial institutions selected by the participating coalitions were included in the research project. With duplicate financial institutions removed, this amounts to 31 financial institutions. Table 1 provides an overview of the coalition countries and the number of selected financial institutions per country.

Table 1 Number of selected financial institutions per coalition

Country	Number of selected financial institutions
France	8
Netherlands	14
Sweden	9
Total	**31**

Table 2 provides an overview of the financial institutions selected by the Dutch *Fair Finance Guide (Eerlijke Geldwijzer)* coalition. Seven banks and seven insurance companies were selected for this research project. The findings on these financial institutions are discussed in this report. The loans and investments of all subsidiaries, inside and outside the Netherlands, of these banks and insurance companies were included in the research.

Table 2 Selected financial institutions operating in the Netherlands

Banks	Insurance companies
ABN Amro	Achmea
ING Bank	Aegon
NIBC	Allianz
Rabobank	APG
Triodos Bank	ASR
Van Lanschot Kempen	NN Group
De Volksbank	Vivat

All selected financial institutions were given the opportunity to provide feedback on the draft findings of the research project. The collected financial data identified for each of the selected financial institutions was sent to these institutions for verification. In addition, financial institutions were requested to provide details on their additional investments in renewable energy projects. Generally, the Dutch selected financial institutions responded as follows:

- Most of the banks were interested in our findings, but declined to make comments;
- A number of insurance companies pointed to their own publications on ESG frameworks and other efforts towards sustainability, including their participation in the Dutch ICSR agreement for the insurance sector;
- Three financial institutions provided additions or corrections to the data, on shareholdings, bondholdings and renewable energy projects. These data were integrated into the dataset used for this research project;
- One financial institution noted that this study does not discuss green bonds separately. However, where companies selected for this study have issued green bonds, they are included in the analyses of underwritings and bondholdings in the same way as other bonds;
- Finally, it was also noted that this study looks at and compares various types of financial institutions - banks and insurance companies - which have different regulatory requirements, varying asset classes in investments and varying reporting methods. It is therefore important, when comparing the financial institutions included in this study, to compare them within the same asset class or investment universe.

2.4 Selection of sectors and companies

This section provides an overview of the approach behind the selection of the companies included in this study. Section 2.4.1 explains which sectors - and within these sectors: which energy sources - are included in this study. It also explains which sectors and energy sources are considered as *Climate change mitigating sectors* and which sectors and energy sources are considered as *Climate change inducing sectors*. Section 2.4.2 details which energy sources and sectors are seen as *Other energy sectors*, which means that loans to and investments to companies operating in these sectors are not taken into account in this research project.

2.4.1 Selected sectors and energy sources

According to the United Nations Framework Convention on Climate Change (UNFCCC), in 2016 81% of all GHG emissions (excluding land-use, land use change and forestry, LULUCF) [i] were attributable to the use of energy. Within this sector, 36% of GHG emissions originated from power generation, 26% from transport, 14% from manufacturing industries and construction, 12% from other sectors, 10% from fugitive emissions from the production of fuels and 2% from other sources not specified.[11]

As of 2016, electricity and heat generation accounted for 36% of total GHG emissions in the energy sector, and 29% of total GHG emissions (excluding LULUCF) for countries party to the UNFCCC. As such, power generation constitutes the core sector of this research. This study further focuses on sectors that can be considered as inputs for power generation and/or for energy used in transport, manufacturing industries and construction, and fugitive emissions from the production of fuels. Together these sectors are relevant for more than 60% of GHG emissions attributable to energy use and 49% of total global GHG emissions.[12]

[i] LULUCF refers to GHG emissions from land-use, land use change and forestry. More information on the definition and inclusion of LULUCF in GHG emission calculations can be found here: https://unfccc.int/land_use_and_climate_change/lulucf/items/1084.php.

The following paragraphs further explain which sectors and energy sources were selected and whether they are considered as *Climate change inducing sectors* or as *Climate change mitigating sectors*. Furthermore, for each sector the scope of company selection within those sectors and the selection strategy is explained.

- **Power generation**

  Power (also called electricity) can be generated through various sources. Not all sources of power generation emit GHGs. Power generation sources include, but are not limited to, the following:

  - Biomass
  - Coal
  - Gas
  - Geothermal energy
  - Hydro power
  - Nuclear energy
  - Ocean energy
  - Oil
  - Solar
  - Wind

  A growing number of power generation companies are diversifying the composition of their generating capacities across different energy sources. This is partly stimulated by awareness of climate change issues, partly through consumer and shareholder pressure and partly through government incentives.

  From the sourcing of materials or fuels, to construction, to operation and waste management, different electricity generation technologies emit different levels of GHG. When emissions of all these processes are taken together, they are known as the life-cycle emissions of a certain electricity generation technology. In the context of its fifth assessment report on climate change mitigation, Working Group III of the IPCC assessed different electricity generation technologies and developed an overview of the life-cycle emissions, as shown in Table 3. The GHG emissions are expressed in grams of CO_2-equivalent, comparing their climate change impact per gram to that of CO_2. The grams of CO_2-equivalent emitted per kiloWatthour produced are then calculated (gCO_2eq/kWh).

  There has been some debate regarding steps in the life-cycles of some technologies not being included, and that technological advances that occurred while IPCC was conducting its study have also not been included. Alternative evaluations of life-cycle emissions also exist. However, the IPCC assessment is currently the most comprehensive. It is therefore the basis for our assessment of different sectors and energy sources in this research project.

Table 3 Life-cycle emissions of electricity generation technologies (gCO_2eq/kWh)

Current commercially available technology	Minimum	Median	Maximum
Coal – pulverized coal	740	820	910
Gas – combined cycle	410	490	650
Biomass – co-firing	620	740	890
Biomass – dedicated	130	230	420
Geothermal	6	38	79
Hydropower	1	24	2,200
Nuclear	3.7	12	110
Concentrated Solar Power (CSP)	8.8	27	63
Solar PV – rooftop	26	41	60

Current commercially available technology	Minimum	Median	Maximum
Solar PV – large-scale projects	18	48	180
Wind onshore	7	11	56
Wind offshore	8	12	35

Source: Intergovernmental Panel on Climate Change (2015, February), Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, New York: Cambridge University Press, p. 1,335.

Table 4 provides an overview of the electricity generation technologies that this research considers as Climate change mitigating sectors, because of median life-cycle emissions of below 50 grams of CO_2 equivalent per kilowatt hour, and which are considered as Climate change inducing sectors. It further provides an overview of other electricity generation technologies, which are not included of either of these two categories (explained further in section 2.4.2).

Table 4 Climate change inducing and mitigating electricity generation technologies

Climate change mitigating	Climate change inducing	Other
Geothermal	Coal – pulverized coal	Biomass – co-firing
Concentrated solar power (CSP)	Gas – combined cycle	Biomass – dedicated
Solar PV – rooftop	Oil	Hydropower
Solar PV – power generation		Nuclear power
Wind onshore		
Wind offshore		
Ocean and tidal energy		

For the company selection for this research project, a list of the 25 largest power generation companies worldwide was developed based on their total installed capacity as of 2016 and 2017. This selection was developed based on previous research and annual reporting from the companies.

Additionally, this research developed a selection of power generation companies accounting for 75% of the domestic market of each of the FFG coalition countries participating in this study. This list was selected based on company reports, industry reports and Thomson Reuters Eikon.

As most power generation company make use of different power generation technologies, the loans to and investments is these companies need to be distributed over the three sectors we distinguish: *Climate change mitigating sectors*, *Climate change inducing sectors* and *Other energy sectors*. How this distribution is done, is discussed in section 2.6.2.

- **Coal mining**

Coal is used as an input for power generation, which accounts for 36% of all GHG emissions in the energy sector, and 29% of total GHG emissions in 2016 for countries party to the UNFCCC.[13] Coal is also used as input for other industrial processes. The most significant other uses of coal are in steel production, cement manufacturing and liquid fuel. As such its impact on GHG emissions is far greater than simply as an input in power generation.

As Table 3 shows, coal used for electricity has a median life-cycle GHG emission of 820 grams of CO_2 equivalent per kilowatt hour. It is therefore considered a climate change inducing source of electricity. Coal mining can also have negative impact on the environment through damage to ecosystems, deforestation, and pollution. Additionally, coal mining can also have negative impacts on communities, including land grabs, loss of livelihoods, and forced displacement.

For the company selection of this research, a list of companies accounting for an average of 75% of the global coal mining industry by revenues and assets was developed using Bloomberg, Thomson Reuters Eikon and the Platts Top 250 Global Energy Company Rankings.

- **Oil and gas production and refining**

  Oil and gas are used in both the transport and the power generation sectors. Together, these sectors accounted for 62% of GHG emissions in the energy sector, and 51% of total GHG emissions. [14] Oil and gas are also used as energy sources in many other sectors and as inputs for other chemical processes.

  As shown in Table 3, gas as an input for electricity generation has a median life-cycle GHG emission of 490 grams of CO_2 equivalent per kilowatt hour. While this is lower than coal, it is still well above the threshold of this study of 50 grams of CO_2 equivalent per kilowatt hour. It is therefore considered a Climate change inducing source of electricity. Furthermore, oil and gas extraction can have negative impacts on the environment through damage to ecosystems, deforestation, and pollution. Additionally, oil and gas extraction can also have negative impacts on communities including land grabs, loss of livelihoods, earthquakes, and forced displacement.

  For the company selection of this research, a list of companies accounting for an average of 75% of the global oil and gas exploration and production industry by revenues and assets was developed using Thomson Reuters Eikon and the Platts Top 250 Global Energy Company Rankings.

- **Solar power equipment manufacturers**

  Solar power is a renewable source of energy. Solar power can be derived from solar photovoltaic panels and from concentrating solar thermal power. Different sources of solar electricity have different levels of GHG emissions (see Table 3). Concentrated solar power has a median life-cycle GHG emission of 27 grams of CO_2 equivalent per kilowatt hour. Large-scale solar PV has a median life-cycle GHG emission of 48 grams of CO_2 equivalent per kilowatt hour. Rooftop solar PV has a median life-cycle GHG emission of 41 grams of CO_2 equivalent per kilowatt hour. Manufacturing solar power equipment is thus considered a climate change mitigating sector.

  The process of manufacturing photovoltaic cells can include the use of toxic chemicals. In addition, the production process is linked to potential issues identified generally in the production of most electronic goods. Given that the assumption that the potential impact is less than the overall benefit produced, and that solar power equipment manufacturing has low life-cycle emissions, this sector is included in this study.

  For the company selection of this research, a list of companies considered the leading producers of solar PVs was developed using REN21 publications and Thomson Reuters Eikon. A list was similarly developed of the leading producers of concentrated solar thermal power (CSP) using REN21 publications.

- **Wind turbine manufacturers**

  Wind power is a renewable source of energy. Different sources of wind generated electricity have different levels of GHG emissions (see Table 3). Onshore wind power has a median life-cycle GHG emission of 11 grams of CO_2 equivalent per kilowatt hour. While offshore wind power has a median life-cycle GHG emission of 12 grams of CO_2 equivalent per kilowatt hour. Manufacturing wind turbines is thus considered a climate change mitigating sector.

  For the company selection of this research, a list of companies considered leading producers of wind turbines was developed using REN21 publications.

- **Geothermal energy equipment manufacturers**

  Geothermal energy is renewable source of energy. As demonstrated in Table 3, geothermal energy has a median life-cycle GHG emission of 38 grams of CO_2 equivalent per kilowatt hour. Manufacturing geothermal equipment is thus considered a climate change mitigating sector.

For the company selection of this research, a list of major geothermal energy engineering companies and geothermal power plant operators was developed using REN21 publications and industry reports.

- **Ocean energy engineering**

  Ocean energy is an emerging energy sector. Both tidal stream generators and barrage tidal energy are methods to capture ocean energy. Tidal stream generators function similarly to wind turbines as they capture the incoming and outgoing stream of energy from tides. Barrage tidal energy is similar to hydroelectric dams, as structures are built across bays and estuaries to force tidal energy through turbines situated in the barrage.

  As with hydro power, the impact on the environment, particularly on natural ecosystems, is potentially significant. Nevertheless, a review on studies on the life-cycle GHG emissions of ocean energy estimates that the median is around 17 grams of CO_2 equivalent per kilowatt hour (gCO_2/kWh) and could be as low as 8 gCO_2/kWh.[15] Given these results and the technical potential of this energy source as an alternative source of energy, ocean energy has been included in this study as a climate change mitigating sector.

  For the company selection of this research, a list of major ocean energy engineering companies was developed using REN21 publications.

2.4.2 Other energy sectors

Apart from the *Climate change inducing sectors* and the *Climate change mitigating sectors* defined in section 2.4.1, three sources of energy are not taken in consideration in this research project: nuclear energy, hydropower and bio energy. These sources of energy are not considered viable alternatives to fossil fuels for energy used in power generation and transport as they are considered to have a high impact on the environment or because there is limited consensus on the impact level of these energy sources. This section further discusses these three other energy sources and the rationale not to include them in this research project.

- **Nuclear energy**

  Nuclear power is seen by some as a sustainable source of energy because its energy generation is climate-neutral. It produces relatively insignificant amounts of GHGs, is comparatively cheap to run, and is a stable source of energy. However, many controversies surround nuclear power.

  Recent studies suggest that as uranium ore grades decrease, fossil fuel inputs in the nuclear fuel cycle will increase. As such, within a few decades, the GHG emissions in the nuclear fuel cycle will be similar to that of traditional coal-fired or gas-fired power plants.

  Further risks include the risks and environmental damage from uranium mining, processing and transport, the risk of nuclear weapons proliferation, the unsolved problem of nuclear waste and, although many countries have a good track record, the potential hazard of a serious accident.

  As shown in Table 3, current estimations suggest that nuclear energy has a median life-cycle GHG emission of 12 grams of CO_2 equivalent per kilowatt hour. However, due to the potential negative impacts, and the consensus among FFG coalition partners that nuclear power is not a viable alternative to traditional fossil fuels, nuclear energy is not included in this study.

- **Hydropower**

  Hydropower is often considered a sustainable source of energy, because as a renewable source, it has less GHG emissions from energy generation than traditional fossil fuels. However, hydro power is often controversial. Hydropower projects, both large and small, have a significant impact on the environment, altering habitats, as well as having a potentially great impact on communities and their socioeconomic conditions. Communities are often displaced without (or with inadequate) compensation, and livelihoods are lost. It is therefore not sustainable in the social and economic sense

of the word, and does not respect human rights, in all contexts.

As Table 3 demonstrates, hydropower has a median life-cycle GHG emission of 24 grams of CO_2 equivalent per kilowatt hour, which is quite low. However, hydropower also has a maximum life-cycle GHG emission of 2,200 grams of CO_2 equivalent per kilowatt hour. This is more than double the maximum life-cycle GHG emission of pulverized coal. Such high levels of life-cycle GHG emission per kilowatt hour are generally reached by large-scale hydropower. Few countries are still constructing such large-scale hydropower projects.

Small-scale run-of-the-river hydro power is seen as having fewer negative social and environmental impacts than large-scale hydropower. However, different countries and organizations use different minimum thresholds to differentiate between small-scale and large-scale hydropower. Table 5 provides an overview of the different definitions of small-scale hydropower.

Table 5 Country definitions of small-scale hydropower

Country	Threshold (MW)
Brazil	⩽ 30
Canada	< 50
China	⩽ 50
European Union	⩽ 20
India	⩽ 25
Norway	⩽ 10
Sweden	⩽ 1.5
United States	5-100
WWF	< 15

Source: Kumar, A., T. Schei, A. Ahenkorah, et al. (2011), "Hydropower", in O. Edenhofer, R. Pichs-Madruga, et al. (eds), *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation*, Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, p. 450; WWF (2003), *Hydropower in a Changing World*, p.3.

Many other factors influence the amounts emitted, depending on the geographical location, the age of the reservoir, external inputs of carbon and nutrients, and characteristics of the reservoir such as water flow, turnover time, area, depth, water level fluctuations and the positioning of the turbines and spillways. Dams in tropical areas for example emit more methane than do those in temperate or boreal areas.[16] Experts also suggest that the environmental impact per megawatt (MW) is dependent on the measures taken to mitigate the negative impact. It is beyond the scope of this research to investigate the impact per MW of each hydropower plant in the power generation portfolios of all selected power generation companies for the period under study. Moreover, as there is no consensus on the definition of small-scale hydropower, it was decided that hydropower would not be included in this study.

- **Bio energy**

Biomass energy and biofuels are derived from various sources. The term refers to biological matter that can be used as fuel for electricity generation and for transport. This can range from wood and plants to alcohol. Biomass is turned into energy through burning.

Biomass is regarded by some as a renewable energy source because the carbon in biomass is considered as part of the natural carbon cycle. This is because trees take in carbon dioxide from the atmosphere and convert it into biomass and when they die it is released back into the atmosphere. Whether trees are burned or whether they decompose naturally, the same amount of carbon dioxide is released. The idea is that if trees harvested as biomass are replanted as fast as the wood is burned, new trees take up the carbon produced by the combustion, the carbon cycle theoretically remains in

balance, and no extra carbon is added to the atmospheric balance sheet. Therefore, biomass is considered "carbon neutral." Replacing fossil fuels with biomass is thought to result in reduced carbon emissions.

However, whether or not biomass is truly carbon neutral depends on a number of factors:

- what type of biomass is used,
- the combustion technology,
- which fossil fuel is being replaced, and
- what forest management techniques are employed where the biomass is harvested.

Combustion of biomass and fossil fuels both produce carbon dioxide. When annual crops and other short-term biomass are burned, the carbon generated can generally be absorbed by the growing of new plants. However, when the biomass comes from wood and trees, the re-growing and thus the recapture of carbon take years or decades, and the carbon equation would need to take into consideration the carbon that the trees would have naturally stored if left untouched. This is particularly problematic as the majority of existing biomass power plants currently use wood residue.

Furthermore, as with biofuels, described below, biomass is affected by a number of social and environmental issues. As described above, biomass can include agricultural waste, production forest wood chips, and wood pellets, among other things. Issues generally tend to arise when wood is being cultivated in order to produce wood pellets. There are numerous reports of forest destruction (also leading to CO_2 emissions) for monoculture development, as well as of land grab and loss of livelihoods related to such developments.

Another form of bio energy is biofuels. Biofuels can come in different forms, including ethanol and biodiesel. They are derived from different feed stocks including sugar beets, sugar cane, soy, palm oil, wheat, corn, and jatropha. However, the biofuels sector is afflicted by numerous controversies. Again, there are significant concerns including issues regarding food security, deforestation, legality of operations, human rights and labour issues, community displacement and land grabs, loss of livelihoods, the impact of monoculture on ecosystems, and soil degradation.

Due to these controversial issues regarding biomass and biofuels, and the consensus among FFG coalition partners that bio energy is not a clear-cut viable alternative to traditional fossil fuels it is not included in this research project.

2.4.3 Final selection of sectors and companies

Table 6 presents the final categorisation of energy sources and sectors for the purpose of this study. The *Climate change inducing sectors* are referred to as "Fossil fuels" in the financing analysis, while *Climate change mitigation sectors* are referred to as "Renewable energy". Based on the discussion in section 2.4.2, three sources of energy are defined as *Other energy sectors* and are not taken into account in the financing analysis.

Table 6 Categorisation of Climate change mitigating and Climate change inducing sectors

Climate change mitigating sectors	Climate change inducing sectors	Other energy sectors
Geothermal energy equipment manufacturing	Coal mining	Bioenergy
Solar panel manufacturing (PV and CSP)	Oil (production and refining)	Hydropower
Wind turbine manufacturing	Gas (production and refining)	Nuclear power
Ocean energy engineering	Coal-fired power generation	
Geothermal energy generation	Gas-fired power generation	
Solar energy generation	Oil-fired power generation	

Climate change mitigating sectors	Climate change inducing sectors	Other energy sectors
Wind power generation Ocean energy generation		

For each of the sectors identified in Table 6, a large number of companies was selected for this research project, based on the selection criteria explained in section 2.4.1. Several of the selected companies have significant activities in multiple sectors and are therefore repeated for each of the sectors relevant to this study in which they are active. The full overview of the 292 selected companies is provided in Table 10 in Appendix 1.

2.4.4 Renewable energy projects

In several countries, the most significant drivers of a shift to renewable energy are not the established power generation companies which account for the dominant share of the national power generating capacity. Rather, renewable energy generation is developed by small and medium sized enterprises, and special purpose vehicles focussing specifically on developing renewable energy projects.

Given the relevance of these renewable energy projects to this study on the trends of financing to renewable energy and fossil fuels, a separate selection of renewable energy projects was made for this research project. Only renewable energy projects based on geothermal, solar and wind energy sources were included.

The top-10 projects by value were included per coalition country - France, the Netherlands and Sweden - per year between 2016 and 2017. Additionally, the top-25 projects globally per year between 2016 and 2017 that met the above specified criteria were also included. Financial institutions in each coalition country were given the opportunity to add relevant renewable energy projects to the list. Overlap occurred sometimes for two reasons:

- Some projects selected for a coalition country also figured in the global top 25 of projects; and
- Some projects were developed by a (subsidiary of) a power generation company already included in the company selection.

In cases of overlap, the next project on the list was included. Table 11 in Appendix 1 provides an overview of the 85 selected renewable energy projects. This list does not include additional projects that were taken into account after being provided directly by financial institutions.

Information available from the commercial database IJGlobal was used to identify relevant projects, the involved financial institutions, and their financial commitments. Only deals that have been finalised were included. The analysis of the loans provided by financial institutions to these renewable energy projects is integrated in the analysis of loans provided to the selected energy companies (Table 10) and is not discussed separately. Although syndicated equity can be a significant source of financing for such projects, this could not be included as the participants are often not disclosed. Due to lack of data availability, this type of financing was not included.

2.5 Types of investments and financing

Financial institutions such as banks and insurance companies can be involved in financing the selected companies through providing them loans and other credits, discussed in section 2.5.1. They can also help companies raising capital by underwriting share issuances (section 2.5.2) or bond issuances (section 2.5.3). Financial institutions can also invest - on their own behalf or on behalf of their clients - in the equity and debt of a company by holding shares (section 2.5.4) or bonds (section 2.5.5). The following sub-sections outline the different types of financing and investments, how data were collected and how trends are analysed in this report.

2.5.1 Loans and other credits

Companies can borrow money from a bank, through a loan or other form of credit. Loans can be either short-term or long-term in nature. Short-term loans (e.g. trade credits, current accounts, leasing agreements) have a maturity of less than a year. They are mostly used as working capital for day-to-day operations. Short-term loans are often provided by a single commercial bank.

A long-term loan has a maturity of at least one year, but more often of three to ten years. Long-term corporate loans are particularly useful to finance expansion plans, which only generate rewards after a certain period. The proceeds of corporate loans can be used for all activities of the company. Long-term loans are frequently extended by a loan syndicate, which is a group of banks brought together by one or more arranging banks. The loan syndicate will only undersign the loan agreement if the company can provide certain guarantees that interest and repayments on the loan will be fulfilled.

- **Project finance**

  One specific form of corporate loans is project finance. This is a loan that is earmarked for a specific project and often is tied to specific conditions. In this research, the purpose of each project finance provided to the selected companies is investigated to determine to which of the three energy sectors it can be attributed (see Table 6).

  Additionally to project finance loans extended to the companies in Table 10, in this research project also the project finance loans to the renewable energy projects included in Table 11. All data on project financing for the renewable energy projects in Table 11 is analysed in combination with other relevant loans to *Climate change mitigating sectors*.

- **Loan for general corporate purposes / working capital**

  Long-term loans to companies are often not earmarked for specific projects. In that case, the loan will be reported as being used for “general corporate purposes” or for “working capital”. In this research project, for companies which are active in different sectors a method is used to distribute this type of financing over the three energy sectors listed in Table 6. How this is done is discussed in section 2.6.

- **Revolving credit facility**

  Another type of loan is a revolving credit facility. A revolving credit facility provides a company with an option to take up a loan from a bank (or more often a banking syndicate) when it has an urgent financing need. Its function resembles a credit card. Companies can use the revolving facility up to a certain limit, but don’t have to. When a company is issuing bonds, investors see the fact that the company has concluded a revolving credit facility with a banking syndicate as a kind of insurance which guarantees that the company can meet its obligations in terms of interest payments and bond repayments.

  The syndicate of banks providing the facility do have the obligation to provide the entire amount of money when the company asks for it. Therefore, even if the company ends up never using the facility, the banks were still involved with the company during the period of the revolving credit facility and would have provided the company with the money when they asked for it. Therefore revolving credits agreed during the research period are considered in the same way as other corporate loans in this research project.

2.5.2 Share issuances

Issuing shares on the stock exchange gives a company the opportunity to increase its equity, by selling the shares to new or existing shareholders. This doesn’t only bring more risk-taking capital to the company, but also opens the possibility to attract more loans - as banks usually require a certain minimum equity-debt ratio.

When a company offers its shares on the stock exchange for the first time, this is called an Initial Public Offering (IPO). When a company's shares are already traded on the stock exchange, this is called a secondary offering of additional shares. To arrange an IPO or a secondary offering, a company needs the assistance of one or more investment banks, which will price the shares, write a prospectus and use their network to find buyers.

The most important part of the role of the investment bank in share issuances is the so-called underwriting. This means that the investment bank guarantees to the company that it will buy all issued shares for a guaranteed price at the issuing date. On the same day or in the following days, the investment bank sells the shares for a higher price to private and institutional investors which it has approached in the preceding weeks. The role of the investment bank therefore is only temporary. Nevertheless, its assistance to companies in share issuances is crucial. The investment bank provides the company with access to capital markets (private and institutional investors) and a guarantee that the company can sell its shares at a pre-determined minimum price.

2.5.3 Bond issuances

Issuing bonds can best be described as cutting a large loan into small pieces and selling each piece separately. Bonds are issued on a large scale by governments, but also by companies. Like shares, bonds are traded on the stock exchange. The process of issuing bonds is similar to that of issuing shares. The company needs the assistance of one or more (investment) banks which underwrite a certain number of bonds and sell them to investors.

2.5.4 Shareholdings

Institutional investors, such as insurance companies, pension funds, private banks and asset managers (which sometimes are subsidiaries of a bank), can buy shares of companies listed on the stock exchange, which makes them part-owners of the company. They can do they this with money on their balance sheet, or by external funds managed by them on behalf of their clients. Both options give the institutional investor a certain level of influence over the company's strategy. The magnitude of this influence depends on the size of the shareholding and the question whether the funds are managed on behalf of a third party.

Shares traded on the stock exchange can easily be bought and sold, which means that (the investment and asset management subsidiaries of) some banks and insurance companies are continuously changing their shareholdings. And even when the financial institution does not buy or sell, the value of their shareholdings can fluctuate because of changes in the share prices. This makes it difficult to analyse if a financial institution is increasing or decreasing its shareholdings in *Climate change mitigating sectors* as well as in *Climate change inducing sectors*.

Therefore, in this research project the development trend of the shareholding values is researched for each bank or insurance company by looking at the values reported at the end of each quarter in the two-year period 2016-2017. Then the *baseline* value development during the two-year period is calculated for the exact number of shares managed by the bank or insurance company at the beginning of the period. The baseline will show an increase or decrease of the shareholding values, purely based on changes in the shareprices.

Comparing the actual development trend of shareholding values with the baseline trend, therefore shows if the value of the shareholdings of the bank or insurance company are increasing or decreasing more than can be explained by share price developments. If this is the case, this points to additional investments or to disinvestments made by the bank or insurance company. This research project compares these trends separately for the shareholdings of each bank and insurance company in *Climate change mitigating sectors* and his shareholdings in *Climate change inducing sectors*.

The number of shares owned or managed by a certain bank or insurance company were preferably retrieved from financial databases on the fund level, after which the shareholdings for the different funds under control of the financial institution were combined. The funds researched include the following three fund categories:

- In-house managed own funds;
- Funds managed on behalf of clients;
- Externally managed own funds.

This may mean that the shareholdings in a specific fund are counted twice, both with the financial institution managing the fund (as a "fund managed on behalf of clients") and with the financial institution owning and marketing the fund (as an "externally managed own fund").

For banks or insurance companies who don't manage funds, data were retrieved at the subsidiary level for all subsidiaries of the financial institution owning or managing shares (such as private banks).

2.5.5 Bondholdings

Institutional investors can also buy bonds of a certain company. The main difference between owning shares and bonds is that owner of a bond is not a co-owner of the issuing company; the owner is a creditor of the company. The buyer of each bond is entitled to repayment after a certain number of years, and to a certain interest during each of these years.

Similar to shares, bonds can be bought and sold from one moment to the next. In financial databases only data on the most recent bondholdings are available, which means that for this research project no analysis of the value development over the two-year period 2016-2017 could be made. The value of bondholdings is therefore only analysed at the end of 2017 date.

The number of bonds owned or managed by a certain bank or insurance company were preferably retrieved from financial database on the fund level, after which the bondholdings for the different funds under control of the financial institution were combined. The funds researched include the following three fund categories:

- In-house managed own funds;
- Funds managed on behalf of clients;
- Externally managed own funds.

This may mean that the bondholdings in a specific fund are counted twice, both with the financial institution managing the fund (as a "fund managed on behalf of clients") and with the financial institution owning and marketing the fund (as an "externally managed own fund").

For banks or insurance companies who don't manage funds, data were retrieved at the subsidiary level for all subsidiaries of the financial institution owning or managing bonds (such as private banks).

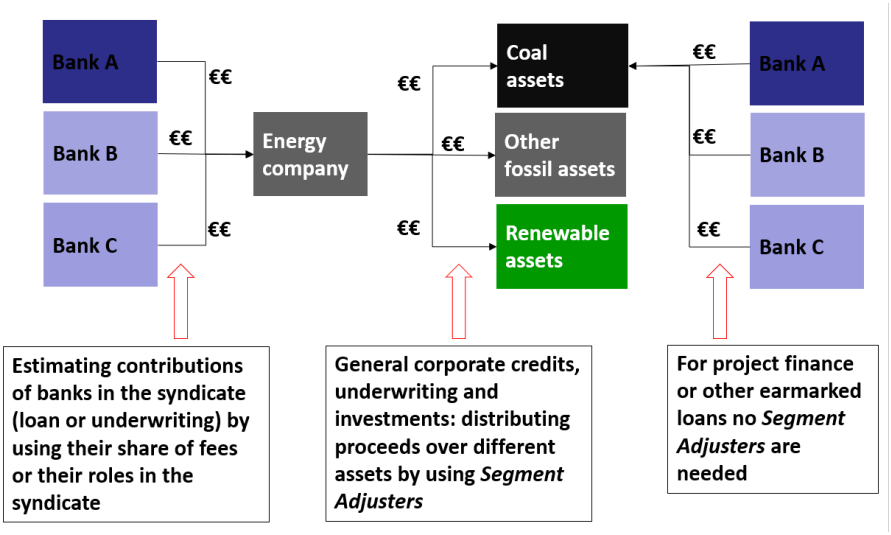
2.6 Assigning loans and investments to the different sectors

This research projects aims to determine which proportion of the energy sector loans and investments of the researched banks and insurance companies was geared towards *Climate change mitigating sectors* and which proportion was geared towards *Climate change inducing sectors* in the research period 2016-2017. To make this analysis, the data collected on loans to, and investments in, the selected companies (Table 10) and projects (Table 11) need to be adjusted in two ways:

- in case of syndicated loans and underwritings, the contribution of each individual bank needs to be assessed: this is discussed in section 2.6.1;
- for companies and projects active in more than one (energy sector), the loan or investment value needs to be distributed across the different sectors in which the company is active: this is discussed in section 2.6.2.

Schematically, these two adjustment steps are clarified in Figure 1.

Figure 1 Assigning loans and investments to the different sectors



2.6.1 Contributions of individual banks in a syndicate

For some syndicate loans and underwritings, the financial databases detail the contributions of all individual banks involved to the total value of the deal. When these contributions are not known, an estimate needs to be made. Usually, the total value of a loan or issuance (the principal amount) is known, as well as the names and roles of all banks that participate in the deal. Sometimes, the feed received per bank are also known. In that case, the ratio of a bank's management fee tis used to estimate its financial contribution to the loan or issuance. This is calculated as follows:

$$\text{Bank's contribution: } \left(\frac{individual\ bank's\ fee}{sum\ of\ all\ banks'\ fees} * \ deal\ value\right)$$

When the fee is unknown for one or more participants in a deal, the *bookratio* is used first to determine the distribution between the number of bookrunners (the banks arranging the deal) and the other banks participating more passively in the syndicate. The *bookratio* is calculated as follows:

$$\textit{Bookratio}: \ \frac{number\ of\ banks - number\ of\ bookrunners}{number\ of\ bookrunners}$$

Table 7 shows which part of the total deal value is assigned to the bookrunners, depending on the bookratio calculated. It shows that for loan syndicates, the share that is attributed to the bookrunners decreases when the number of total banks in the syndicate increases. For issuance syndicates this is not the case. The percentages included in Table 7 are based on experience gained by Profundo over the years with analysing thousands of loan and issuance syndicates for which the contribution of individual banks were known.

Table 7 Contributions assigned to the bookrunners in loan and issuance syndicates

Bookratio	Loans	Issuances
> 1/3	75%	75%
> 2/3	60%	75%
> 1.5	40%	75%
> 3.0	< 40%*	< 75%*

For loan and issuance syndicates with a bookratio of more than 3.0, we use a formula which gradually lowers the commitment assigned to the bookrunners as the bookratio increases. The formula used for this:

$$\frac{1}{\frac{\sqrt{bookratio}}{1.443375673}}$$

The number in the denominator is used to let the formula start at 40% in case of a bookratio of 3.0. As the bookratio increases the formula will go down from 40%. In case of issuances the figure in the denominator is 0.769800358.

2.6.2 Distribution across the different activities of a company

As explained in section 2.4, the companies in Table 10 in Appendix 1 were selected as a result of their activities in the relevant sectors for this study. However, a number of the selected companies are active in both *Climate change mitigating sectors* and in *Climate change inducing sectors*, and sometimes also in sectors outside the energy industry. For example: many power generation companies operate both fossil fuel-fired power plants and wind farms. Some power generation companies were also active in coal mining, oil and gas, and other sectors. A few oil and gas companies were also engaged in renewable energy. Numerous of the selected mining companies mine for other minerals in addition to coal. Solar equipment manufacturers sometimes also make other, non-energy products.

In the case of project finance this does not require any adjustments. When project finance was identified, this research investigated the purpose of the identified project finance to determine whether it fell within the scope of this research and how to attribute it, to *Climate change mitigating sectors* to *Climate change inducing sectors* or to another sector which is not further researched. If, for example, an oil and gas company attracted project finance for a wind farm, then this financing was attributed to *Climate change mitigating sectors*.

But for other types of financing and investments, *segment adjusters* were used as a way to represent financial institutions' financing of fossil fuels or renewable energy. A general corporate loan to a power company, or an investment in the shares of that same company, can be used by the power company to finance all types of activities it is active. In financial reporting, companies are often required the *segments* they are active in and report their income, costs and investments separately for each segment.

For general corporate loans and investments provided to companies active in more than one segment, this research therefore aimed to estimate which part of the loan or investment was used for *Climate change mitigating sectors,* which part for *Climate change inducing sectors* and which part for other sectors which are not further researched int his research project. To estimate this, this research project calculates *segment adjusters* for each company active in more than one sector.

Due to a lack of data availability, segment adjusters were not calculated in the same way for each company. Preferably, data on the annual capital expenditure (capex) per sector or segment in which the company is active were used. These data are also referred to as the annual addition to non-current assets per sector/segment.

For some companies, capex-data per segment were not available, or the segment classification used by the company was too rough to distinguish between *Climate change mitigating sectors* and *Climate change inducing sectors*. In these cases, the following proxies were used in order of preference:

- for power companies: the installed power generation capacity broken down by energy source;
- segment distribution of assets;
- segment distribution of costs;
- segment distribution of profits;
- an estimate based on the description of the company's activities.

The segment distribution of capex, assets, costs and/or revenues were primarily identified through company filings or investor presentations. Segment adjusters were calculated annually for the period of study, 2016-2017.

After identifying the segment adjusters, these were then multiplied by the financing and shareholding values for the relevant periods. For example, Oil Company A receives a loan from Bank A for USD 100 million in 2017. During this financial year, 95% of Oil Company A's assets were in oil, 3% in wind power, and 2% in not relevant sectors. USD 95 million was therefore attributed to fossil fuels, USD 3 million to renewable energy, and USD 2 million was not included in the analysis.

As the example shows, this research project primarily looks at the proportion of financing attributable to *Climate change inducing sectors* (Fossil fuels) and financing attributable to *Climate change mitigating sectors* (Renewable energy). As all financing attributable to *Other energy sectors* as well as to other non-energy sectors is ignored, the total financing analysed will usually be lower than the actual financing provided to the selected companies.

2.7 Data sources and currencies

2.7.1 Data sources

Information sources used to select companies for this project were annual reports published by the selected companies and industry rankings from Platts and REN21. Renewable energy projects were selected from the IJGlobal database.

Loans, issuances, shareholdings and bondholdings were researched using the financial databases Thomson Reuters Eikon and Bloomberg. Project finance of renewable energy projects was researched using the IJGlobal database.

2.7.2 Currencies

Within this research, all financing identified is discussed in United States dollars (USD). This is the primary currency used by Thomson Reuters Eikon, Bloomberg and IJGlobal databases. Additionally, given the global selection of companies that report in various currencies, for consistency purposes this research project presents the data in United States dollars.

Chapter 3 Results per bank

This chapter provides an analysis of the loans, underwriting services and investments in shares and bonds in selected companies that can be attributed to renewable energy and fossil fuels for each of the seven most important banks active on the Dutch market (see Table 2). The banks are ordered alphabetically by name.

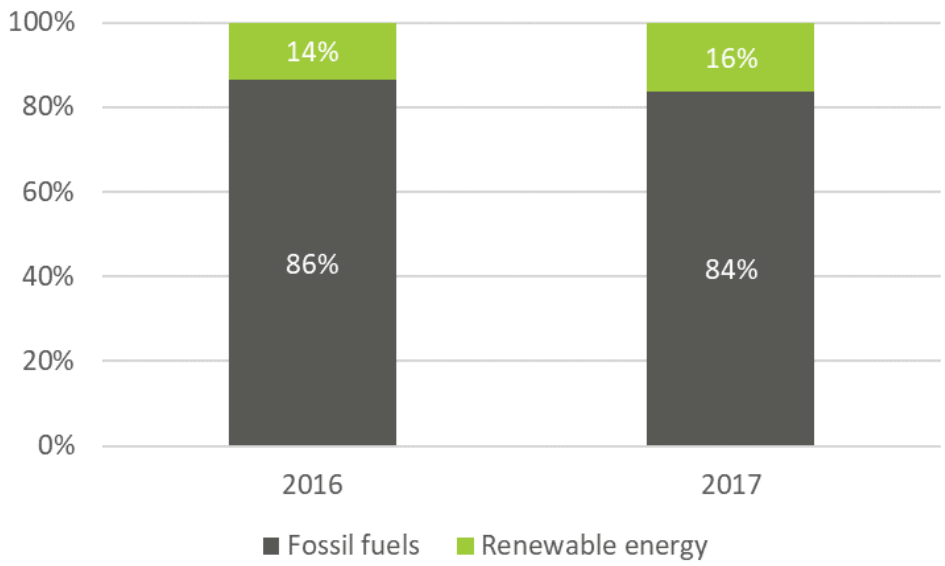
3.1 ABN Amro

This section provides an analysis of the loans and investments by ABN Amro that can be attributed to renewable energy and fossil fuels. ABN Amro did not provide any feedback on the data.

3.1.1 Loans and underwriting

Between 2016 and 2017, ABN Amro has provided loans attributable to fossil fuels and renewable energy amounting to USD 3.4 billion. From 2016 to 2017, ABN Amro's provision of loans and renewable energy project finance saw a decline in the proportion attributable to fossil fuels from 86% to 84% and an increase in the proportion attributable to renewable energy from 14% to 16%.

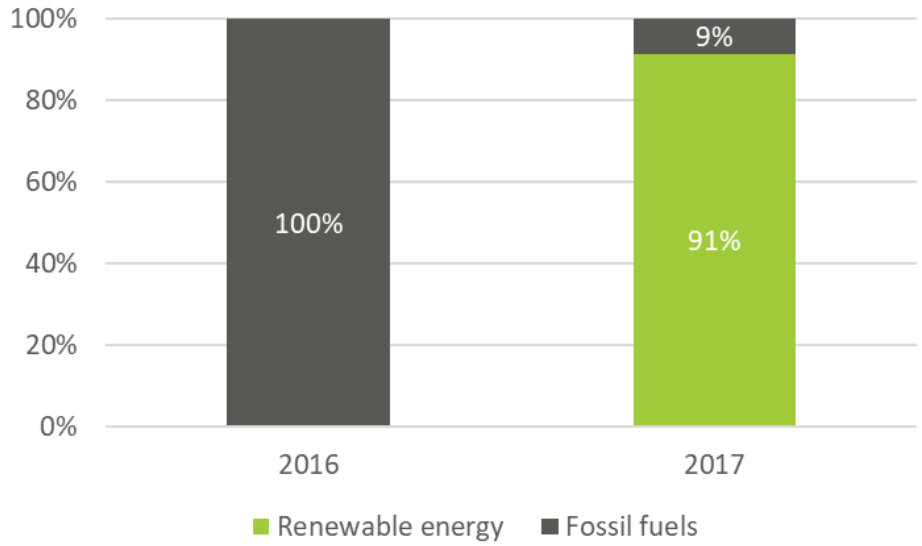
Figure 2 ABN Amro loans by energy sector (2016-2017)



In the two-year period 2016-2017, ABN Amro has provided underwriting services attributable to fossil fuels and renewable energy amounting to USD 238 million. From 2016 to 2017, ABN Amro's provision of underwriting services saw a decline in the proportion attributable to fossil fuels from 100% to 9% and an increase in the proportion attributable to renewable energy from 0% to 91%. However, this is partially due to an overall 96% increase in ABN Amro's underwriting services to the energy sector. In 2016, the value of underwriting attributable to fossil fuels and renewable energy totalled only USD 5 million, compared to USD 133 million in 2017.

In the period 2013-2014, 68% of the identified loans of ABN Amro were attributable to fossil fuels, and 32% to renewable energy. Whereas, in the period 2016-2017, 85% of the identified loans to the selected companies were attributable to fossil fuels, and 15% to renewable energy.

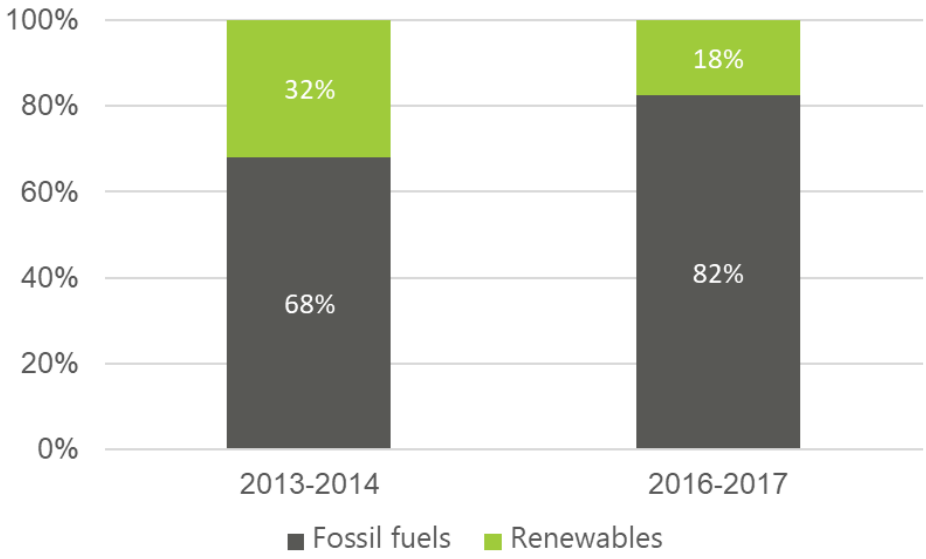
Figure 3 **ABN Amro underwriting services by energy sector (2016-2017)**



In the period 2013-2014 no underwriting services were identified for ABN Amro. Whereas, in the period 2016-2017, 12% of the identified underwriting services were attributable to fossil fuels, and 88% to renewable energy.

Figure 4 provides a comparison of the proportion of loans and underwriting services attributable to renewable energy and fossil fuels in the previous study (focussing on the last two years, 2013 and 2014) and the present research period (2016-2017). It shows that ABN Amro's proportion of loans and underwriting to companies engaged in fossil fuels has increased. While in the period 2013-2014 68% of loans and underwriting was attributable to fossil fuels, in the current study 82% of loans and underwriting provided to the selected companies is attributable to fossil fuels.

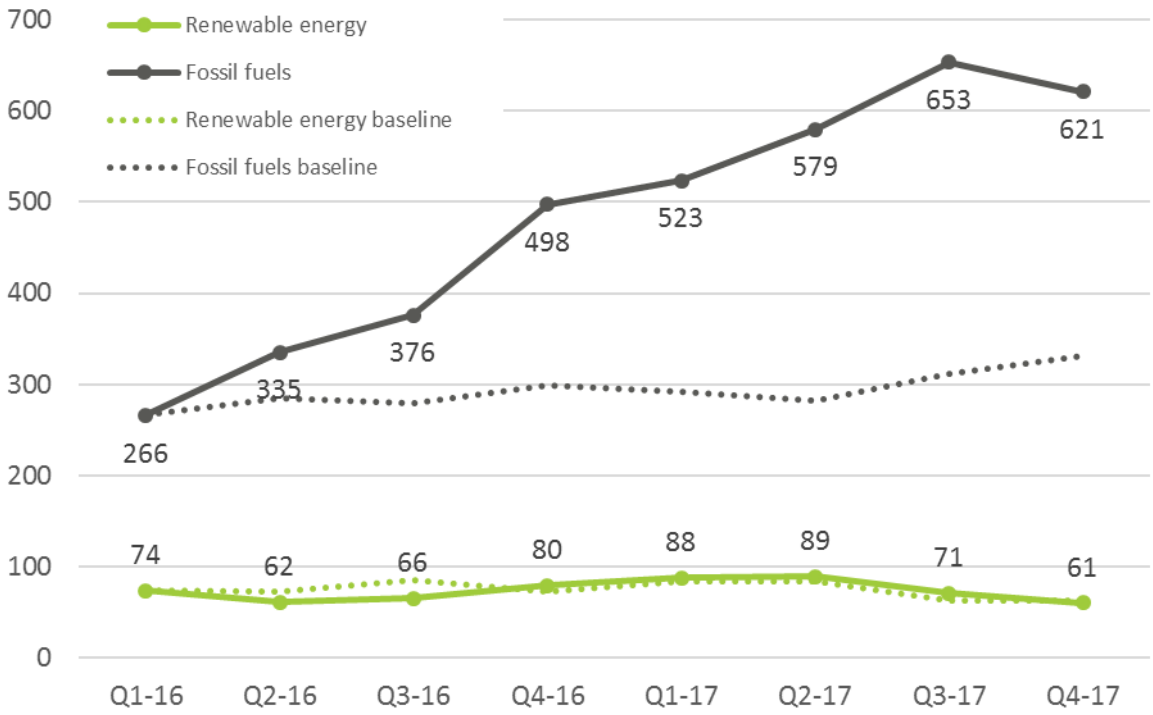
Figure 4 **ABN Amro: comparison 2013-2014 and 2016-2017 loans and underwriting by energy sector**



3.1.2 Shareholdings

In the two-year period 2016-2017, the value of ABN Amro's shareholdings attributable to renewable energy has fluctuated in correspondence with the baseline. The value of investments attributable to renewable energy decreased by 18% in the same period, from USD 74 million to USD 61 million. On the other hand, the value of ABN Amro's shareholdings attributable to fossil fuels has increased by 134% between the beginning and the end of the period of this study, from USD 266 million in the first quarter of 2016 to USD 621 million in the final quarter of 2017. Fossil fuels then accounted for 91% of the total value of shareholdings, while renewable energy accounted for 9%. As this increase is much stronger than the baseline, it points to additional investments by ABN Amro in shareholdings attributable to fossil fuels.

Figure 5 ABN Amro shareholdings by energy sector (2016-2017, in USD million)

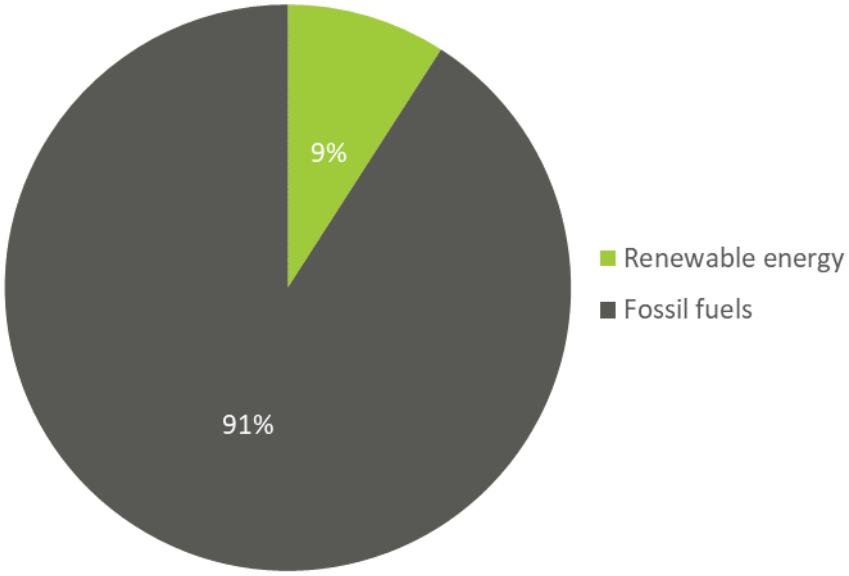


The previous study found that in the last quarter of 2014, 6% of identified shareholdings by ABN Amro was attributable to renewable energy, and 94% to fossil fuels.

3.1.3 Bondholdings

Figure 6 provides an overview of the distribution of ABN Amro's identified bondholdings attributable to fossil fuels and renewable energy, at the end of 2017. The value of bondholdings attributable to fossil fuels and renewable energy amounted to USD 556 million, with USD 75 million attributable to renewable energy and USD 481 million attributable to fossil fuels.

Figure 6 Overview of ABN Amro's bondholdings by energy sector (end of 2017)



3.1.4 Commitments

ABN Amro has not yet published any strong commitments to systematically reduce its carbon footprint by decreasing investment in fossil fuels. It does however have a policy commitment not to finance new coal-fired power plants.[17] The bank positions itself as a green leader especially in the field of circular economy and green buildings.[18] ABN Amro signed the 'Spitsbergen Ambitie' in 2018.[19] It is also one of the founding members of PCAF, a method to account the carbon emissions linked to credits.[20] It however does not use this method to report about its own credit portfolio yet.

3.2 ING Bank

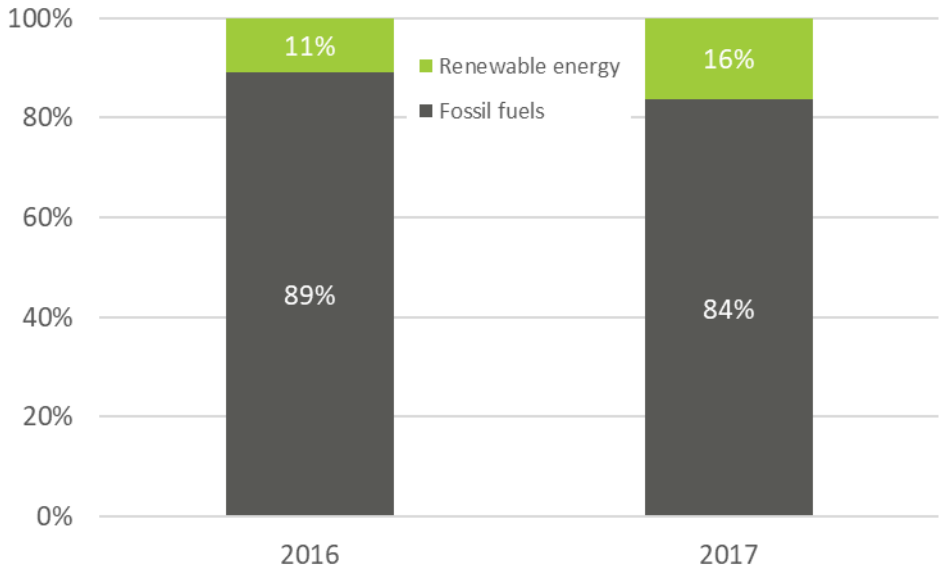
This section provides description of the loans and investments by the ING Bank that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. ING Bank did not provide any feedback on the data.

3.2.1 Loans and underwriting

ING's loans attributable to fossil fuels increased by 7% between 2016 and 2017, from USD 3.4 billion to USD 3.6 billion. Loans and project financing attributable to renewable energy increased by 69%, from USD 413 million in 2016 to USD 698 million.

Figure 7 provides a detailed overview of ING Bank's loans and project finance attributable to renewable energy and loans attributable to fossil fuels. Although the proportion attributable to fossil fuels decreased by 5% in 2017, it continues to dominate over loans and project finance attributable to renewable energy, accounting for 89% in 2016 and 84% in 2017. Concurrently, loans and project finance attributable to renewable energy increased by 5%, accounting for 11% in 2016 and 16% in 2017.

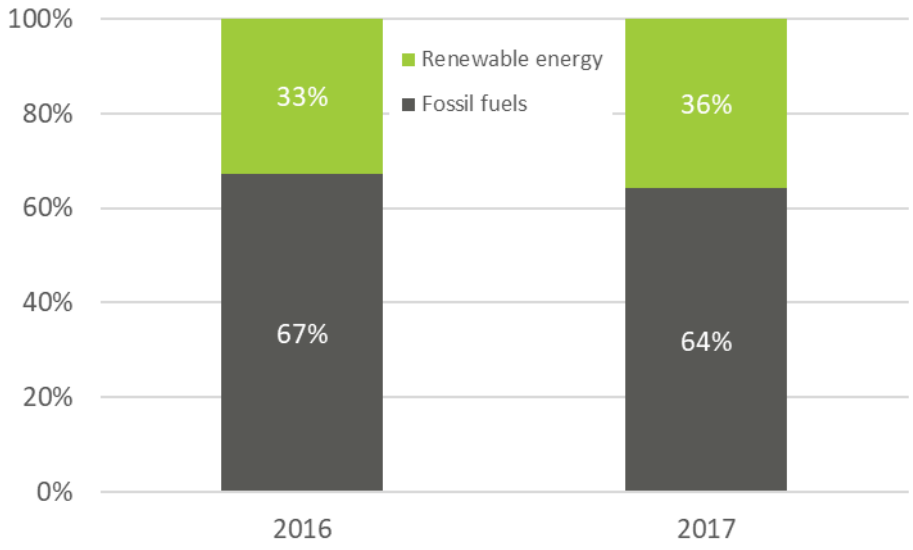
Figure 7 ING Bank loans by energy sector (2016-2017)



In the period 2013-2014, 86% of ING Bank's loans were attributable to fossil fuels, and 14% to renewable energy. In the period 2016-2017 these proportions remained the same.

Figure 8 provides an overview of the annual changes in the proportions of ING group's underwriting services attributable to renewable energy and fossil fuels. Underwriting services attributable to renewable energy amounted to USD 307 million and USD 230 million, in 2016 and 2017 respectively, whereas underwriting services attributable to fossil fuels amounted to USD 633 million and USD 411 million over the same period. The proportion of renewable energy in ING's underwriting services increased from 33% in 2016 to 36% in 2017.

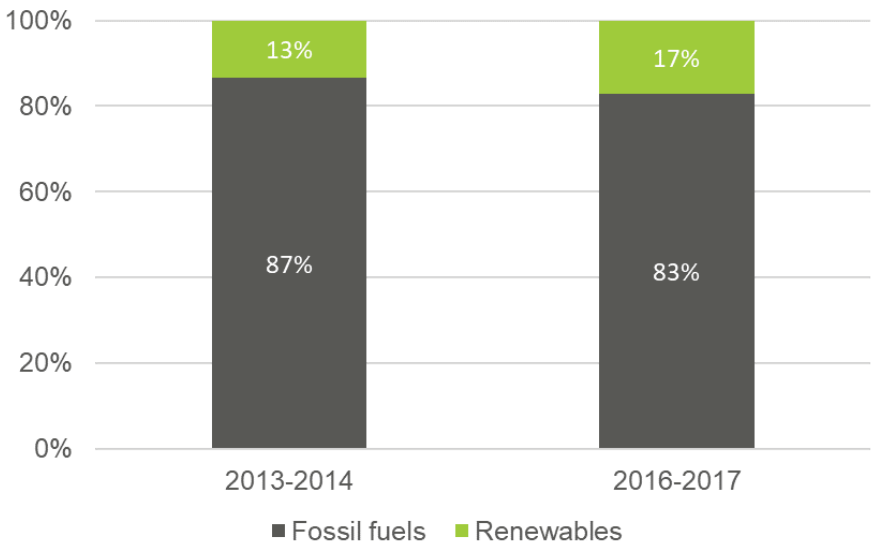
Figure 8 ING Bank underwriting services by energy sector (2016-2017)



In the period 2013-2014, 90% of ING Bank's underwriting services were attributable to fossil fuels, and 10% to renewable energy. Whereas, in the period 2016-2017, 66% of the identified underwriting services of ING Bank were attributable to fossil fuels, and 34% to renewable energy.

Figure 9 provides a comparison of the proportion of loans and underwriting services attributable to renewable energy and fossil fuels in the previous study (focussing on the last two years, 2013 and 2014) and in the current study (2016-2017). It shows that the proportion of loans and underwriting by ING Bank to companies engaged in fossil fuels has decreased. While in the period 2013-2014 87% of loans and underwriting provided to the selected companies was attributable to fossil fuels, in the current study 83% of loans and underwriting provided to the selected companies is attributable to fossil fuels.

Figure 9 ING Bank: comparison 2013-2014 and 2016-2017 loans and underwriting per energy sector



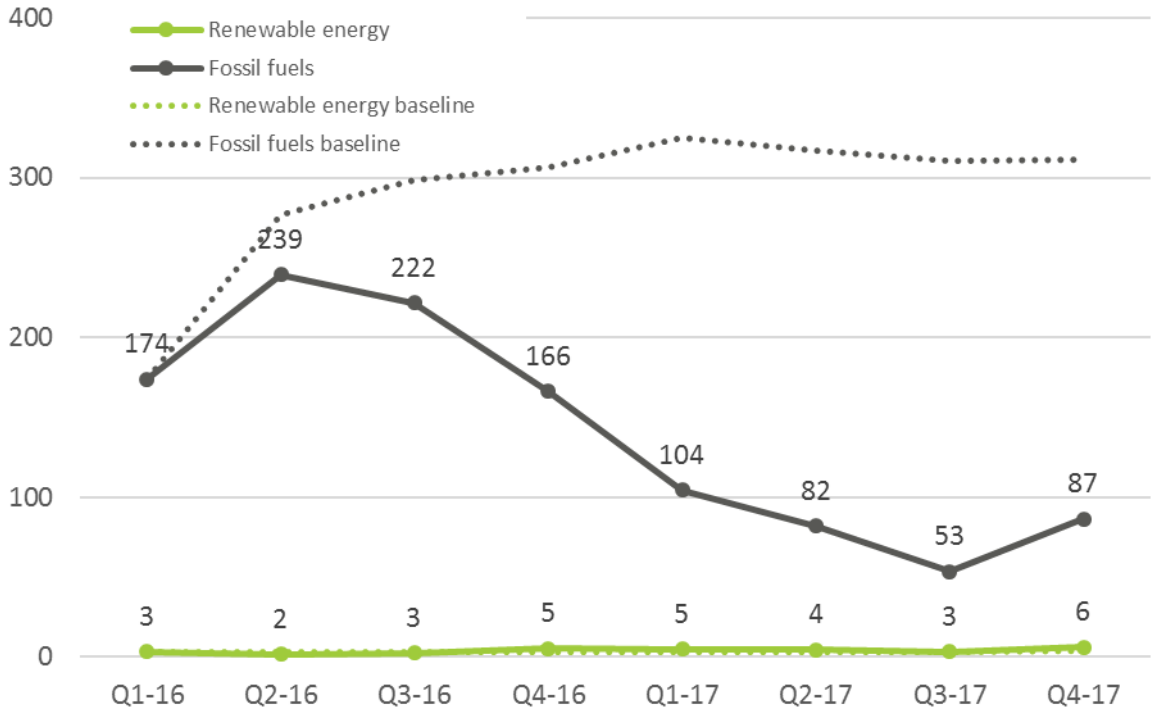
3.2.2 Shareholdings

ING Bank does not manage funds. The shareholdings found are the result of ING's private banking activities. Figure 10 shows a sharp decline in shareholdings attributable to fossil fuels after the second quarter of 2016, with an increase at the fourth quarter of 2017. During the second quarter of 2016, ING divested from Williams Partners and Williams Companies, accounting for the decline in the value of shareholdings identified for ING attributable to fossil fuels. In the fourth quarter of 2017, however, ING increased its investments in ExxonMobil shares by 610%.

In contrast, the value of ING Bank's shareholdings attributable to renewable energy fluctuated marginally, and in line with the baseline. The value of investments attributable to renewable energy increased by 88% between the first quarter of 2016 and the fourth quarter of 2017, from USD 3 million in USD 6 million. On the other hand, shareholdings attributable to fossil fuels have decreased by 50% between the beginning and the end of the period of this study, from USD 174 million in the first quarter of 2016 to USD 87 million in the final quarter of 2017. This declining trend is clearly below the trend and points to a net divestment by ING from fossil fuel shares.

This divestment is still only limited in scale, as fossil fuels accounted for 94% of the total value of ING Bank's shareholdings at the end of the fourth quarter of 2017, while renewable energy accounted for 6%. The previous study found that in the last quarter of 2014, 2% of identified shareholdings by ING Bank was attributable to renewable energy, and 98% to fossil fuels.

Figure 10 ING Bank shareholdings by energy sector (2016-2017, in USD million)



3.2.3 Bondholdings

This research did not identify any investments by ING Bank in the bonds of the selected companies.

3.2.4 Commitments

ING Bank signed the 'Spitsbergen Ambitie' in June 2018 and committed to phase out coal by 2025 and not invest in any new coal projects or coal companies in December 2017.[21] In 2015 it announced to stop financing new coal plants.[22] Furthermore, in September 2018 ING announced that it will steer its total lending portfolio towards the Paris Climate Agreement, to well below 2 degrees target, however there is no mention of the 1.5 maximum yet.[23]

3.3 NIBC Holding

This section provides an analysis of the loans and investments by NIBC Holding that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. Initially, shareholdings were identified for NIBC, but were confirmed by the financial institution as having been sold and were removed from the study. NIBC Holding did not provide any additional data for this study.

3.3.1 Loans and underwriting

NIBC Bank does provide loans to the Offshore Energy sector. These are suppliers of the oil and gas industry and for the renewable energy sector, but none of these companies was selected for this research project (see Table 10).

NIBC does not provide underwriting services.

3.3.2 Shareholdings

No relevant shareholdings were identified for NIBC.

3.3.3 Bondholdings

No relevant bondholdings were identified for NIBC.

3.3.4 Commitments

NIBC has made policy commitments to reduce its carbon footprint by applying a 0% investment and financing threshold for coal mining and coal power generation. Furthermore, the bank does not invest in or finance companies involved in oil and tar sands or shale oil and gas.[24] NIBC did not sign the Paris Pledge for Action and has not participated in the Spitsbergen Ambition.[25]

3.4 Rabobank

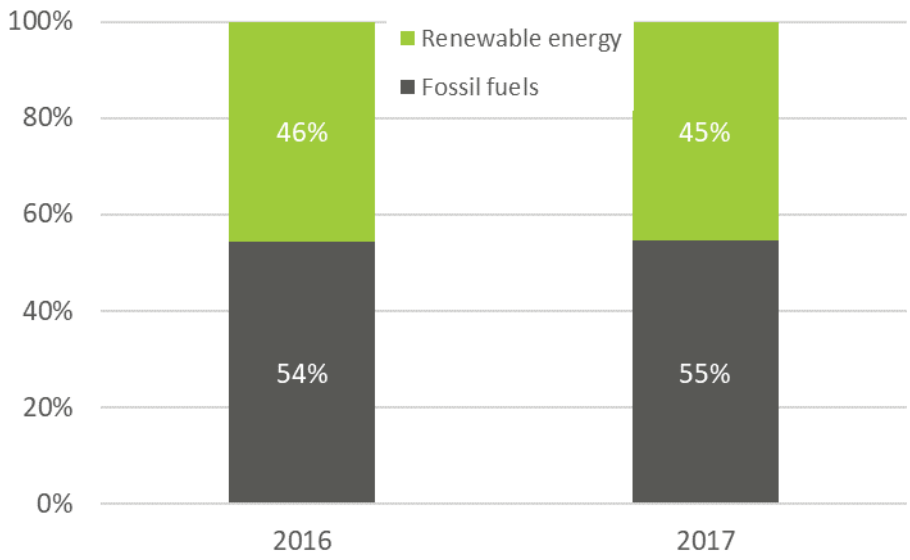
This section provides a description of the loans and investments by the Rabobank that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. Rabobank did not provide any feedback on the data.

3.4.1 Loans and underwriting

Overall, Rabobank's loans and renewable energy project finance to the selected companies increased, both in the financing attributable to fossil fuels and to renewable energy. As shown in Figure 11, this resulted in a decrease of 1% in the proportion of this financing attributable to renewable energy from 46% to 45% and a concurrent 1% increase in the proportion attributable to fossil fuels, from 54% to 55%.

Total loans and project finance attributable to renewable energy amounted to USD 564 million in 2016 and USD 727 million in 2017, resulting in a 29% increase from the first year. On the other hand, loans attributable to fossil fuels amounted to USD 872 million in 2017, a 30% increase from the previous year when loans attributable to fossil fuels amounted to USD 669 million.

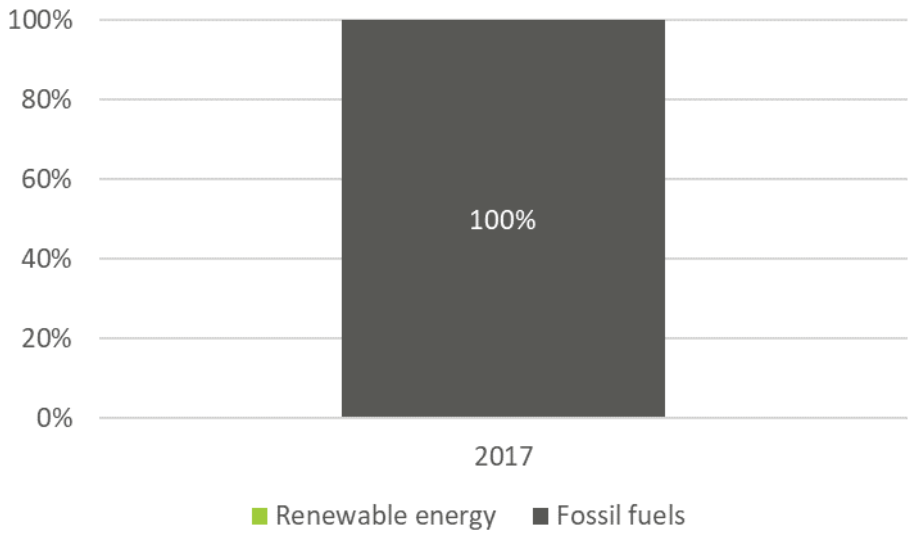
Figure 11 Rabobank loans by energy sector (2016-2017)



In the period 2013-2014, 48% of Rabobank's loans were attributable to fossil fuels, and 52% to renewable energy. Whereas, in the period 2016-2017, 54% of the identified loans were attributable to fossil fuels, and 46% to renewable energy.

Figure 12 shows that 100% of the underwritings by Rabobank in the research period were attributable to fossil fuels. Total underwriting services identified amounted to USD 24 million and were provided in 2017. No provision of underwriting services could be identified for Rabobank in 2016.

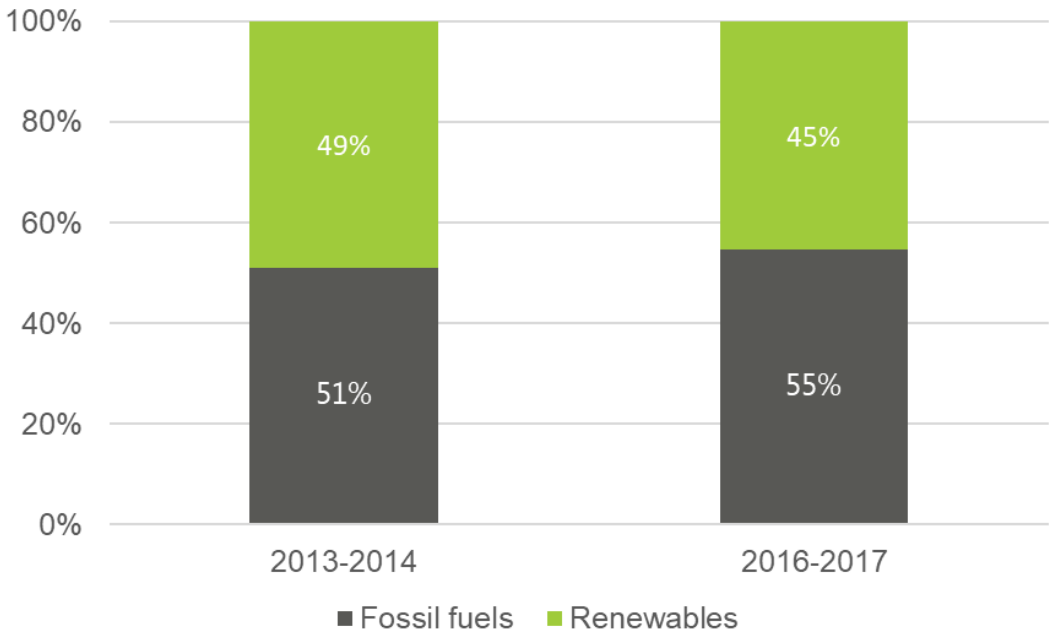
Figure 12 Rabobank underwriting services by energy sector (2016-2017)



Similar to this current study, in the previous study for the period 2013-2014, all identified underwriting services by Rabobank were attributable to fossil fuels.

Figure 13 provides a comparison of the proportion of loans and underwriting services attributable to renewable energy and fossil fuels in the previous study (focussing on the last two years, 2013 and 2014) and the current study (2016-2017). It shows that the proportion of loans and underwriting to companies engaged in fossil fuels has increased. While in the period 2013-2014 51% of loans and underwriting was attributable to fossil fuels, in the current study 55% of loans and underwriting is attributable to fossil fuels.

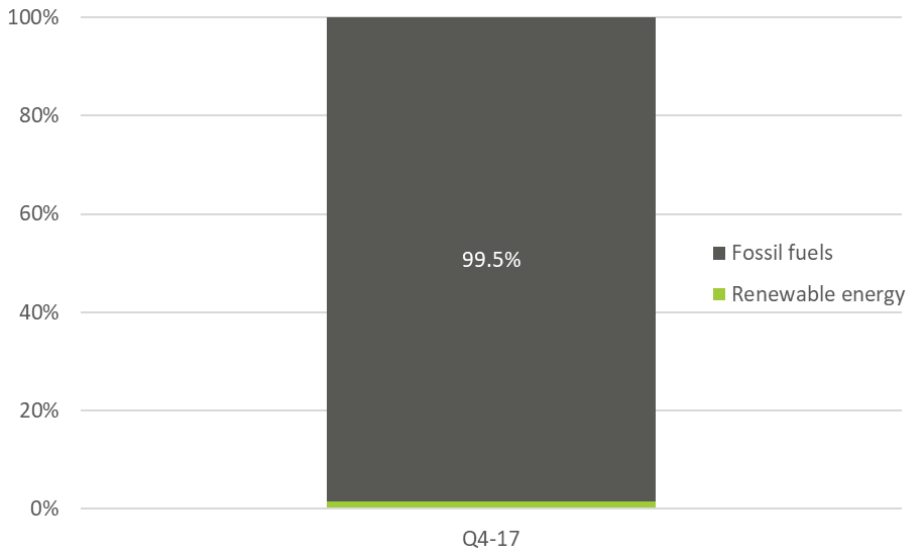
Figure 13 Rabobank: comparison 2013-2014 and 2016-2017 loans and underwriting per energy sector



3.4.2 Shareholdings

Rabobank does not manage funds, shareholdings found relate to its private banking activities. Within all shareholdings identified for 2016 and 2017, Rabobank only invested in the shares of one of the selected companies in the fourth quarter of 2017, which amounted to USD 3.32 million. As Figure 14 shows, within this investment, 99.5% was attributable to fossil fuels and 0.5% was attributable to renewable energy.

Figure 14 Rabobank shareholdings by energy sector (2016-2017)



The previous study found that in the last quarter of 2014, 100% of Rabobank's shareholdings by Rabobank was attributable to fossil fuels.

3.4.3 Bondholdings

This research did not identify any bondholdings provided by Rabobank to the selected companies.

3.4.4 Commitments

Rabobank has made some policy commitments to reduce its carbon footprint by not financing or investing in shale gas or tar sands companies. The bank also excludes direct financing for coal mining and coal-fired power generation.[26]

In 2017, Rabobank joined a pilot group of banks working to implement the recommendations of the Task Force on Climate-related Financial Disclosures.[27] In 2017 Rabobank did not report on its Scope 3 emissions, but stated that it expects to do so in 2018.[28] In 2018, Rabobank signed the Spitsbergen Ambition. However, it is not a signatory of the Paris Pledge for Action.[29]

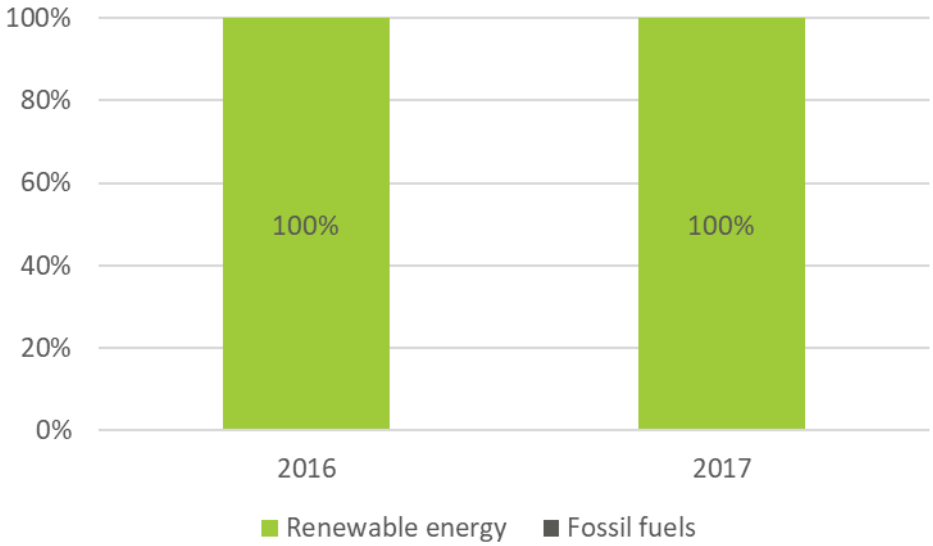
3.5 Triodos Bank

This section provides an analysis of the loans and investments of Triodos Bank that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. Triodos Bank did not provide any feedback on the data.

3.5.1 Loans and underwriting

As demonstrated in Figure 15 Triodos Bank provided project financing to three renewable energy projects within the period of this study. In both years, these loans amounted to a value of USD 61 million.

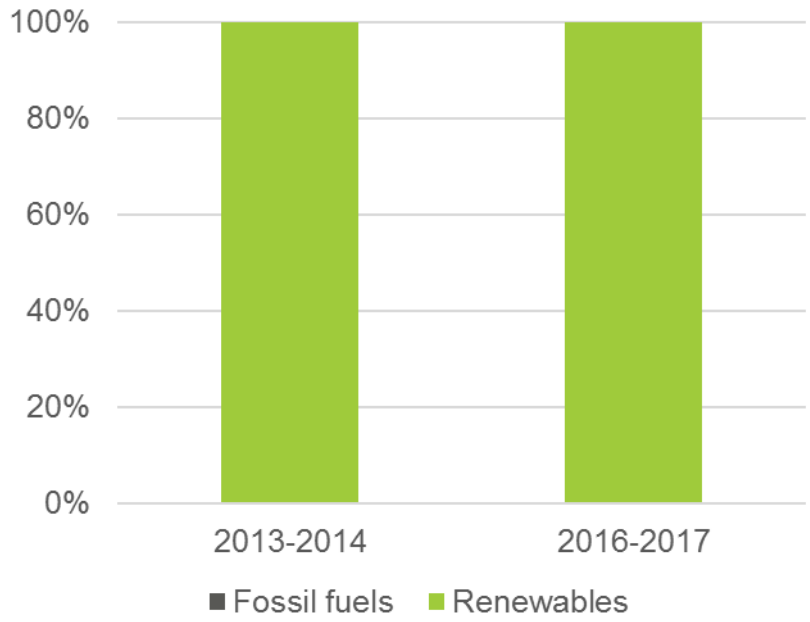
Figure 15 Triodos Bank's loans by energy sector (2016-2017)



This research project did not identify any underwriting services provided by Triodos Bank to the selected companies, as Triodos Bank does not have investment banking activities.

Figure 16 provides a comparison of the proportion of loans attributable to renewable energy and fossil fuels in the previous study (focussing on the last two years, 2013 and 2014) and the current study (2016-2017). In both periods no loans by Triodos Bank attributable to fossil fuels were identified.

Figure 16 Triodos Bank: comparison 2013-2014 and 2016-2017 loans and underwriting per energy sector

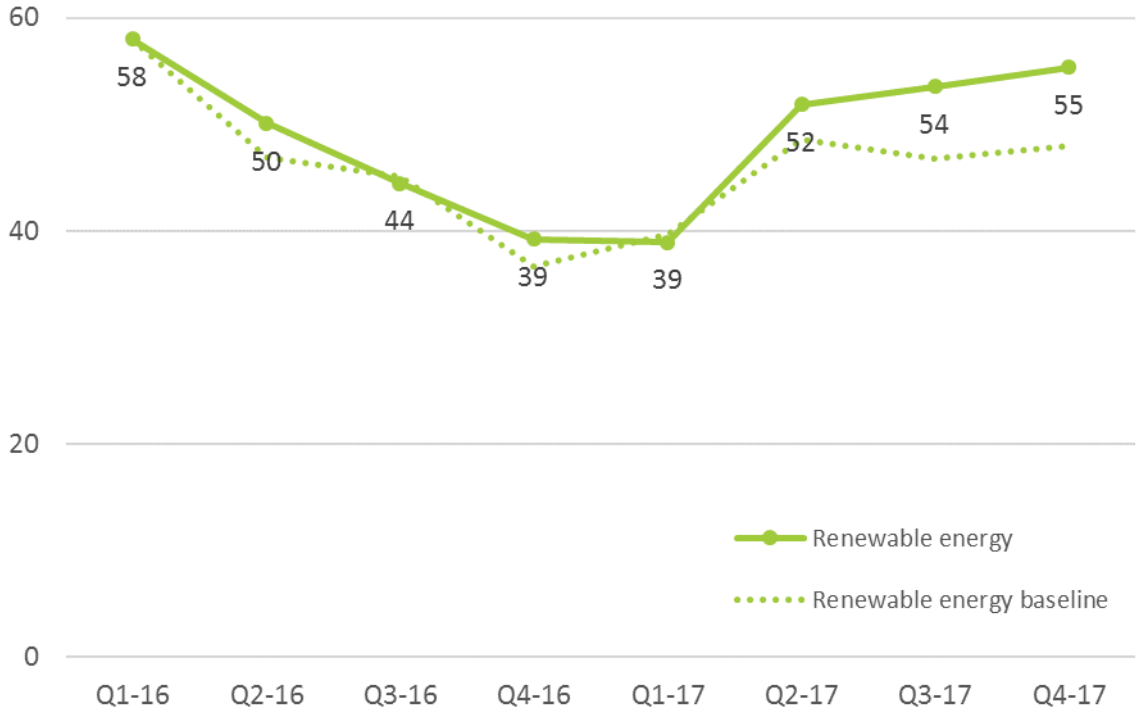


3.5.2 Shareholdings

During the period 2016-2017, the value of Triodos' shareholdings attributable to renewable energy fluctuated generally in line with the baseline until the second quarter of 2017. From then on, the value of Triodos' investments attributable to renewable energy exceed the baseline. This points to additional investments by Triodos Bank in renewable energy shares.

But because the baseline decreased more, the value of Triodos Bank's shareholdings attributable to renewable energy showed a net decrease with 5% from USD 58 million in the first quarter of 2016 to USD 55 million in the fourth quarter of 2017. As in the previous study, no investments attributable to fossil fuels were identified.

Figure 17 Triodos Bank shareholdings by energy sector (2016-2017, in USD million)



3.5.3 Bondholdings

The value of bondholdings identified for Triodos Bank amounted to only USD 3,000, all attributable to renewable energy

3.5.4 Commitments

Triodos Bank has one clear commitment: "We invest in Renewable Energy". The bank does not invest or finance fossil fuel companies.[30]

In 2015, Triodos Bank signed the Paris Pledge to Quit Coal, an initiative by BankTrack, and in 2018, Triodos Bank became a signatory of the Spitsbergen Ambition.[31]

3.6 Van Lanschot Kempen

This section provides an analysis of the loans and investments of Van Lanschot Kempen that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. Van Lanschot Kempen did not provide any feedback on the data.

3.6.1 Loans and underwriting

This research did not identify any loans or underwriting provided by Van Lanschot Kempen to the selected companies.

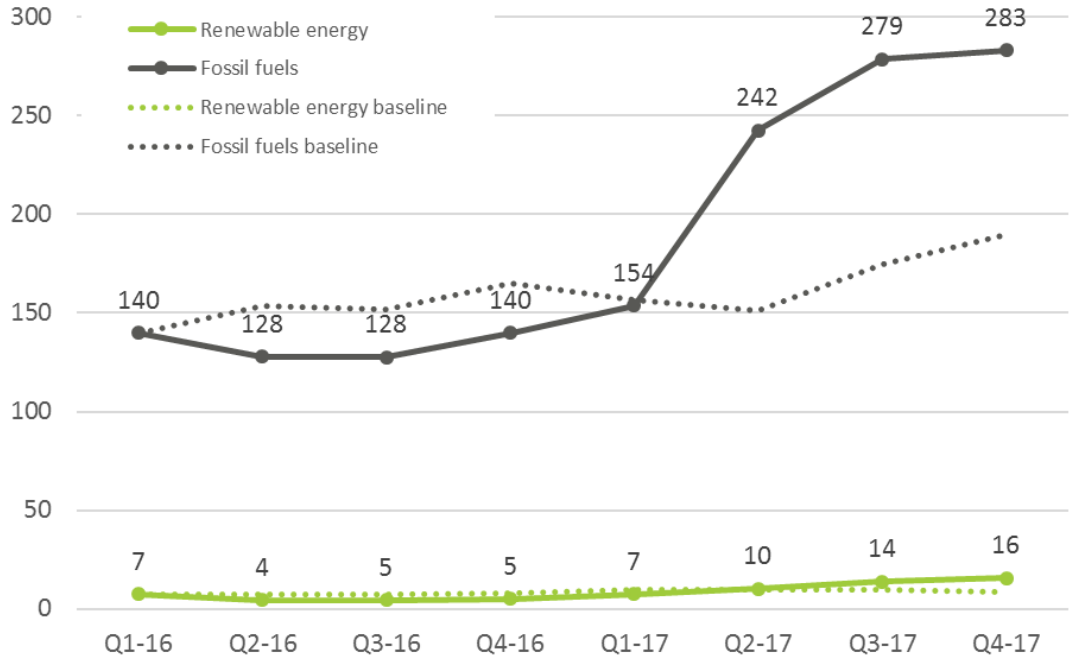
3.6.2 Shareholdings

In 2016 the value of Van Lanschot Kempen's investments attributable to fossil fuels fell below the baseline. However, the value of these investments increased sharply from the first quarter of 2017, exceeding the baseline. The value of investments attributable to fossil fuels increased by 102% from USD 140 million in the first quarter of 2016 to USD 283 million in the fourth quarter of 2017. This clearly points towards additional investments by Van Lanschot Kempen in fossil fuel shares.

On the other hand, the value of Van Lanschot Kempen's shareholdings attributable to renewable energy fluctuated around the baseline. Only as of the third quarter of 2017 did the value of shareholdings attributable to renewable energy exceeded the baseline, pointing to some additional investments in renewable energy shares. The value of shareholdings attributable to renewable energy increased 110% from USD 7 million in the first quarter of 2016 to USD 16 million in the fourth quarter of 2017.

The previous study found that in the last quarter of 2014, 100% of identified shareholdings by Van Lanschot Kempen was attributable to fossil fuels. In the last quarter of 2017, 95% of Van Lanschot Kempen's shareholdings was attributable to fossil fuels and 5% to renewable energy.

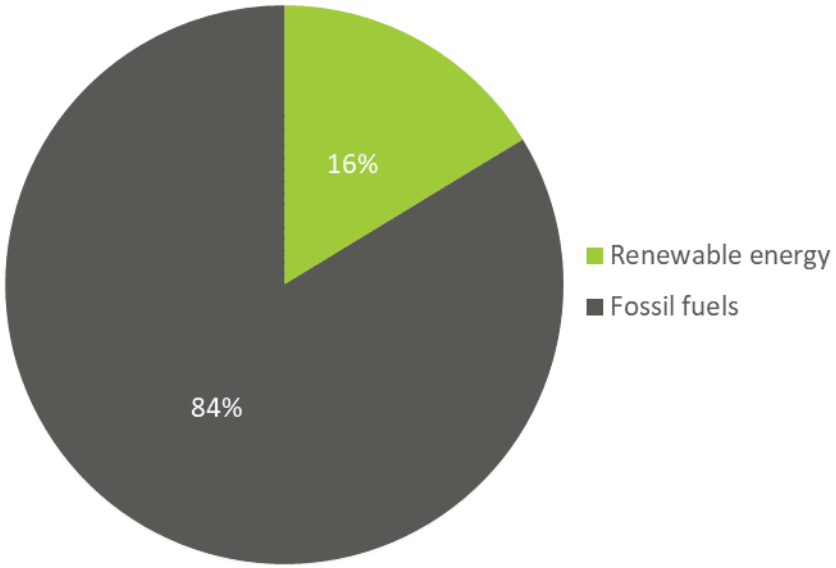
Figure 18 Van Lanschot Kempen's shareholdings by energy sector (2016-2017, in USD million)



3.6.3 Bondholdings

Figure 19 provides an overview of the distribution of Van Lanschot identified bondholdings attributable to fossil fuels and renewable energy. The value of the bondholdings of Van Lanschot amounted to USD 132 million, of which 16% was attributable to renewable energy and 84% to fossil fuels.

Figure 19 Overview of Van Lanschot bondholdings by energy sector (end of 2017)



3.6.4 Commitments

Van Lanschot Kempen does not have many clear commitments to reduce the impacts of its investments and financing on climate change. Van Lanschot has stated that ensuring access to affordable, reliable, sustainable and modern energy for all is one of the SDGs they focus on.[32] Van Lanschot Kempen says it contributes to SDG 7 by, among others:[33]

- "Screening (including their value chain) our client assets on environmental issues and engaging via our client investments with laggard companies in carbon-intensive sectors to combat climate change, e.g. through renewable energy and energy efficiency. We also offer our clients opportunities to combat climate change through discretionary management and impact investing.
- Launching a Global Impact Pool for clients that invest in companies that contribute to several SDGs, including SDG 7.
- Voting at Shell's AGM in favour of the "Follow This" resolution, the aim of which was to set carbon emission targets in alignment with the goal of the Paris Climate Agreement.
- Advising Merchant Bank clients active in sustainable energy (advising OrangeGas)."

However, the bank has no clear policy commitment regarding coal mining, coal-fired power generation or the oil and gas industry. Van Lanschot Kempen did vote for the shareholders' resolution of Follow This, urging Shell to set long-term (2050) and quantitative targets aligned with the goals of the Paris Climate Agreement.[34]

Van Lanschot Kempen signed the Paris Pledge to Action, but is not a signatory of the Spitsbergen Ambition.[35]

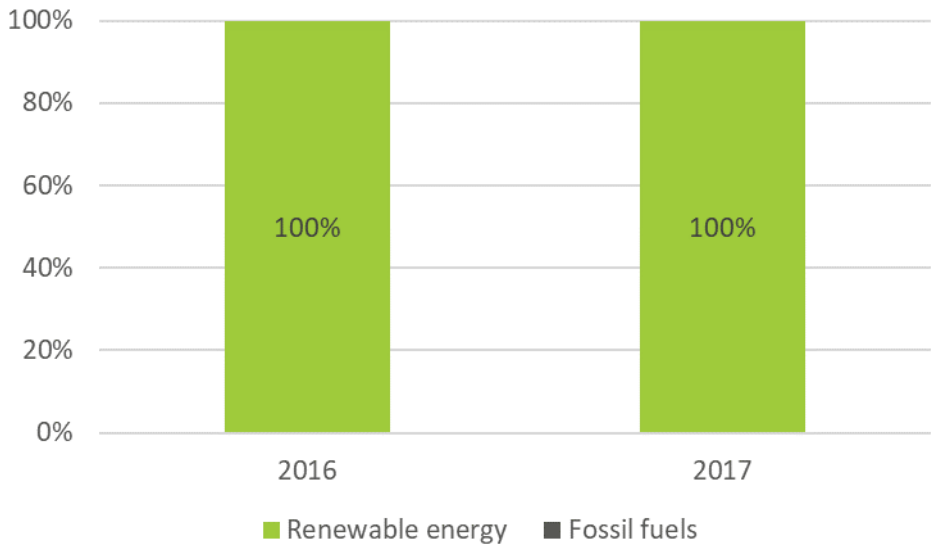
3.7 De Volksbank

This section provides a description of the loans and investments of De Volksbank (including their subsidiaries ASN Bank, SNS, RegioBank en BLG Wonen) that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. In its feedback, De Volksbank provided data on additional loans to renewable energy projects, which have been included in the results below.

3.7.1 Loans and underwriting

Figure 20 shows that the loans identified for De Volksbank pertained only to renewable energy, with a 121% increase in 2017 to total loans attributable to renewable energy of USD 559 million.

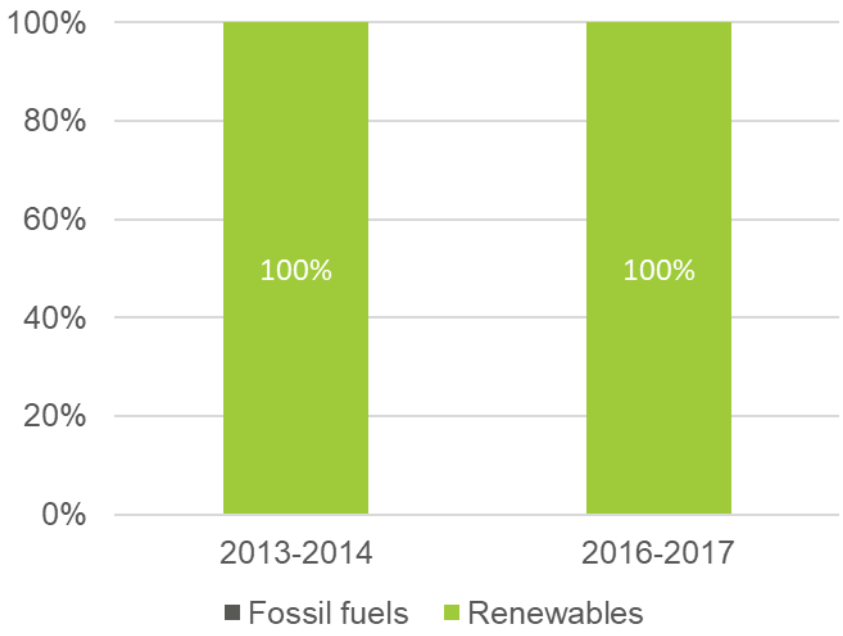
Figure 20 De Volksbank loans by energy sector (2016-2017)



This research project did not identify any underwriting services provided by De Volksbank to the selected companies, as De Volksbank does not have investment banking activities.

Figure 21 provides a comparison of the proportion of loans attributable to renewable energy and fossil fuels in the previous study (focussing on the last two years, 2013 and 2014) and the current study (2016-2017). In both periods no loans by De Volksbank attributable to fossil fuels were identified.

Figure 21 De Volksbank: comparison 2013-2014 and 2016-2017 loans and underwriting per energy sector



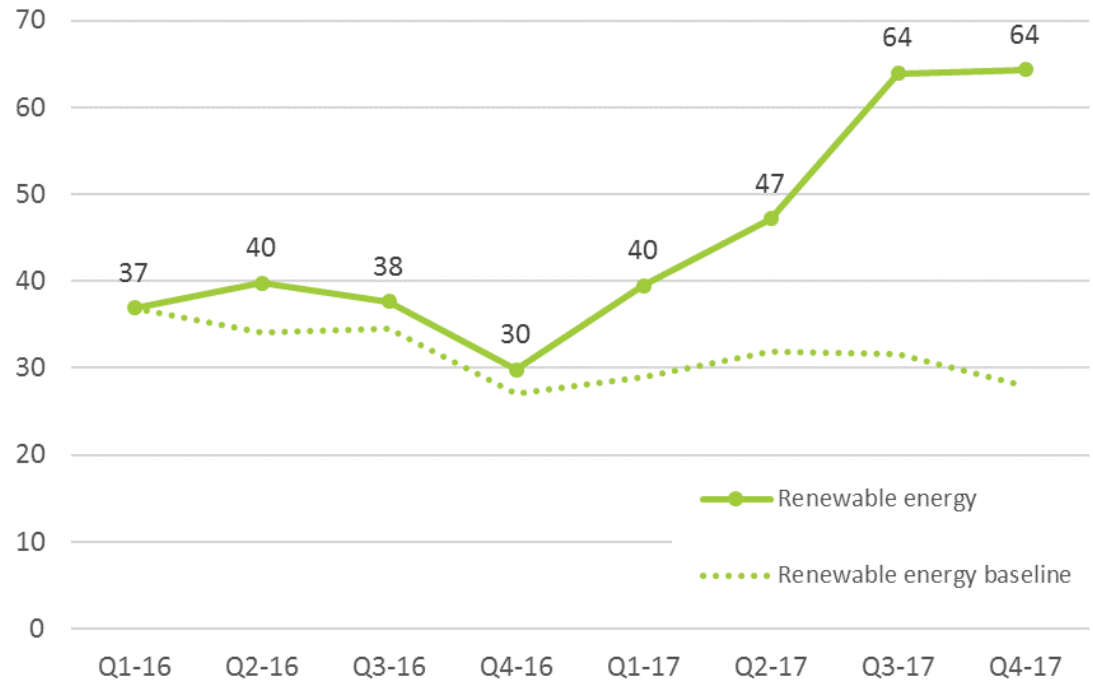
3.7.2 Shareholdings

De Volksbank focuses its equity investments in five sustainable funds, for investments through ASN Bank and SNS Bank. As confirmed by De Volksbank, as of 2018, all funds of SNS Bank were sold to asset manager Actiam - a subsidiary of Vivat (see section 4.7) - or discontinued. All investments in shares identified for De Volksbank were invested through ASN's investment funds.

In 2016, the value of De Volksbank's shareholdings attributable to renewable energy fluctuated generally in line with the baseline. As of the first quarter of 2017, the value of investments attributable to renewable energy exceed the baseline. From the third quarter of 2017 onwards, the value of investments was twice as much as the baseline. This points to additional investments by De Volksbank in shareholdings attributable to renewable energy.

The value of investments attributable to renewable energy increased with 74% from USD 37 million in the first quarter of 2016 to USD 64 million in the fourth quarter of 2017. The previous study found that in the last quarter of 2014, 100% of identified shareholdings by De Volksbank (then ASN Bank and SNS Bank) was attributable to renewable energy. In the last quarter of 2017, similarly 100% of identified shareholdings by De Volksbank was attributable to renewable energy.

Figure 22 De Volksbank shareholdings by energy sector (2016-2017, in USD million)



3.7.3 Bondholdings

This research project did not identify any investments by De Volksbank in bonds issued by the selected companies.

3.7.4 Commitments

De Volksbank does not want to invest or finance fossil fuel power generation and extraction. It has an ambition that goes beyond a fossil free credit portfolio, aiming for a carbon neutral portfolio by 2030. It uses the PCAF methodology to account for the emissions linked to the projects and clients it finances.[36] In 2015, ASN Bank signed the Paris Pledge to Quit Coal, an initiative by BankTrack and in 2018, De Volksbank became a signatory of the Spitsbergen Ambition.[37]

Chapter 4 Results per insurance company

This chapter provides an analysis of the investments in shares and bonds in selected companies that can be attributed to renewable energy and fossil fuels for each of the seven most important insurance companies active on the Dutch market (see Table 2). The insurance companies are ordered alphabetically by name.

4.1 Achmea

This section provides an analysis of the loans and investments by Achmea that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. When asked to provide feedback, Achmea provided their current value of bondholdings and shares in the selected companies. The analysis below is based entirely on the data provided by Achmea.

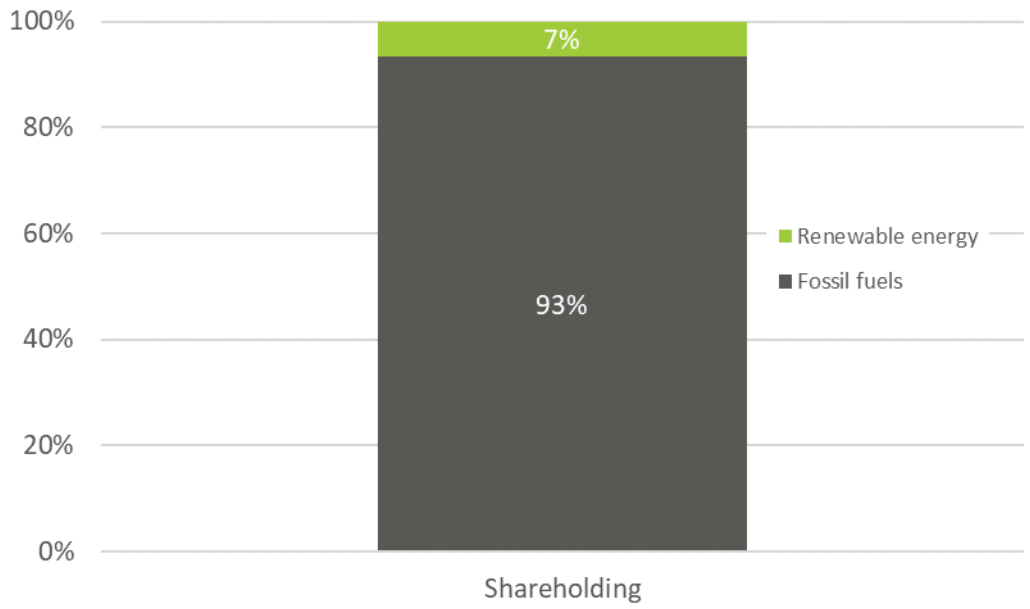
4.1.1 Loans and underwriting

This research did not identify any loans or underwriting services provided by Achmea to the selected companies, as Achmea is an insurance company and does not have corporate banking activities.

4.1.2 Shareholdings

The data below represents all investments in shares by Achmea as of the beginning of August 2018. As Achmea did not provide us with the development of their shareholdings throughout the period of 2016-2017, no trend analysis could be made. As demonstrated in Figure 23, 93% of the shares held by Achmea in the selected companies are attributable to fossil fuels, amounting to USD 80 million, whereas 7% are attributable to renewable energy, amounting to USD 6 million.

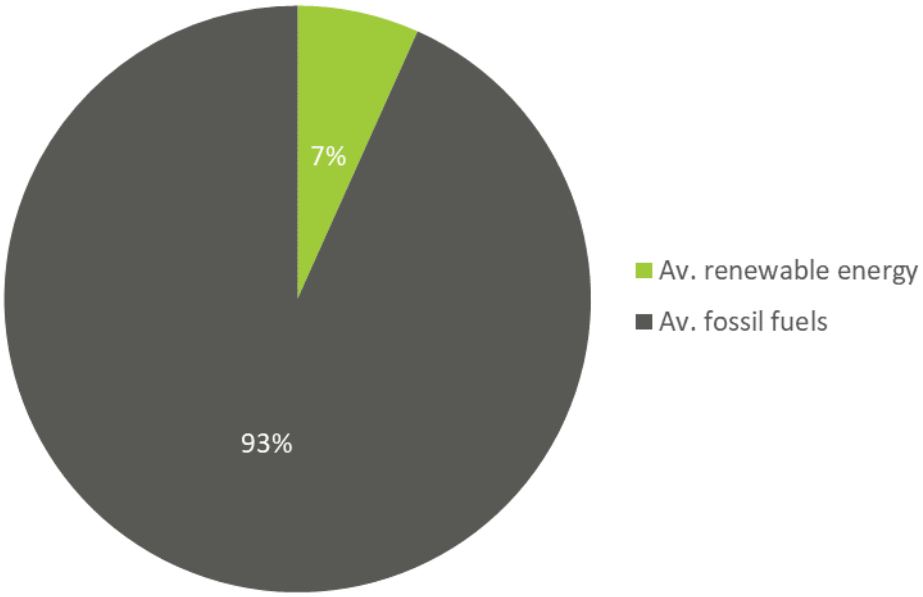
Figure 23 Achmea shareholdings by energy sector 2016-2017



4.1.3 Bondholdings

Figure 24 provides an overview of the distribution of Achmea's identified bondholdings attributable to fossil fuels and renewable energy. In the same distribution as their investments in shares, 93% of the bonds held by Achmea in the selected companies are attributable to fossil fuels, amounting to USD 3 million, whereas 7% are attributable to renewable energy, amounting to USD 0.2 million.

Figure 24 Overview of Achmea bondholdings by energy sector (end of 2017)



4.1.4 Commitments

Achmea has made a few specific commitments on climate change. In 2014 Achmea signed the UN Global Investor Statement and in 2015 Achmea signed the Paris Pledge for Action.[38] In 2015 Achmea scaled up its investment in Green Bonds. That same year Achmea reduced its shareholdings in fossil fuel companies by 10%, after conducting a carbon footprinting analysis of its shareholdings portfolio.[39] In 2018, Achmea abstained from voting on the resolution of Follow This at the Shell AGM.[40]

4.2 Aegon

This section provides an analysis of the loans and investments by Aegon that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017.

4.2.1 Loans and underwriting

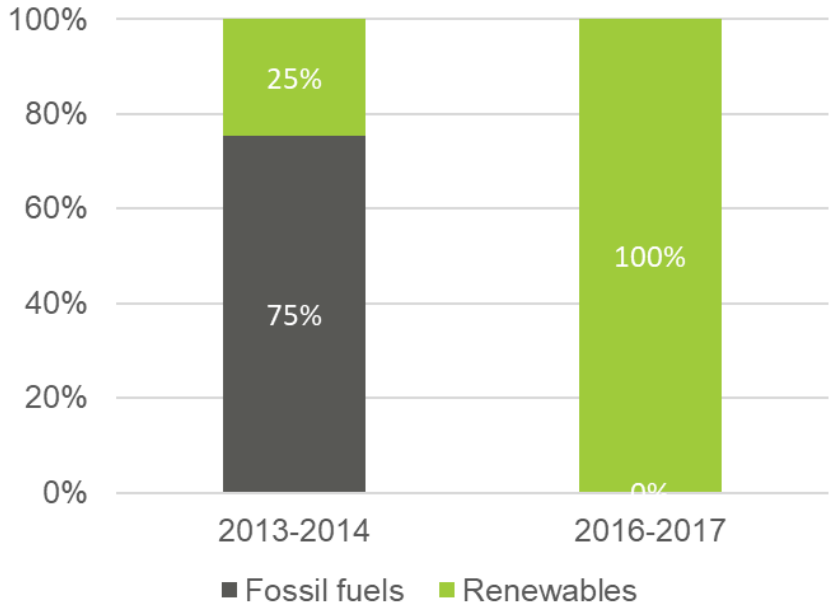
Although Aegon's core activity is not banking, this research found that the Government Related Investment Fund managed by Aegon contributed to a project finance loan to one renewable energy project in 2016, a wind farm in Norway. Aegon's contribution was estimated at USD 59 million. This means that 100% of its energy financing could be attributed to renewable energy in 2016.

As no loans by Aegon could be identified for 2017, no proportion change could be noted regarding Aegon's financing attributable to renewable energy or fossil fuels.

No underwriting services were identified, as Aegon is an insurance company.

Figure 25 provides a comparison of the proportion of loans and underwriting services attributable to renewable energy and fossil fuels in the previous study (focussing on the last two years, 2013 and 2014) and the current study (2016-2017). It shows that the proportion of loans and underwriting by Aegon to companies engaged in fossil fuels has decreased. In the period 2013-2014 three quarters of loans and underwriting provided to the selected companies was attributable to fossil fuels. The current study, as noted above, has identified one loan in 2016 attributable to renewable energy, and no loans or underwriting to attributable fossil fuels.

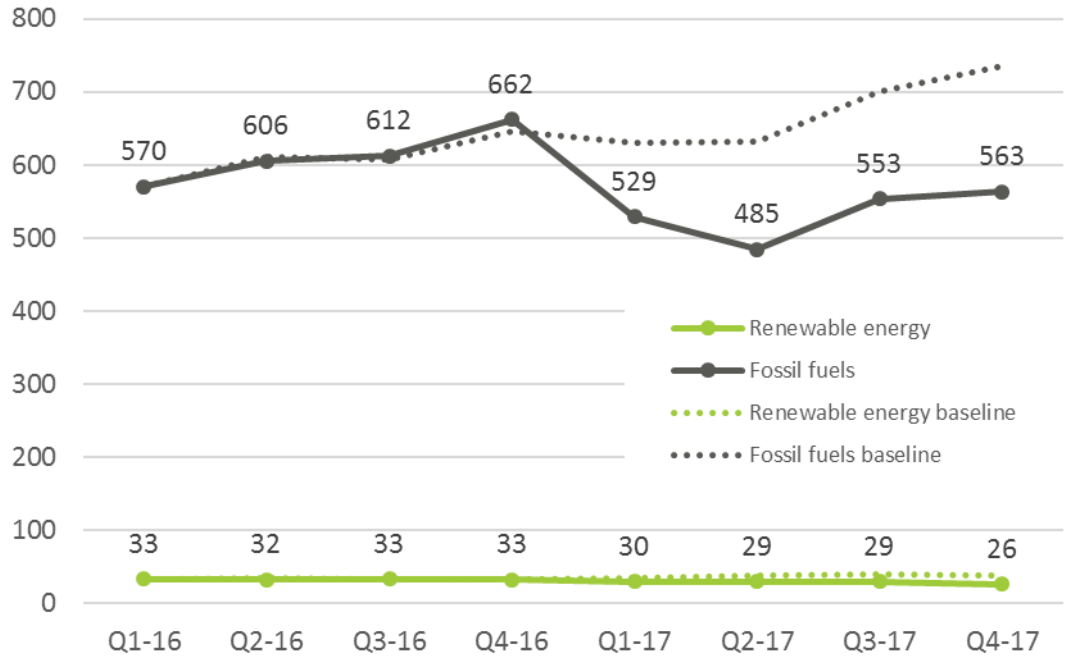
Figure 25 **Aegon: comparison 2013-2014 and 2016-2017 loans and underwriting per energy sector**



4.2.2 Shareholdings

Throughout the 2016-2017 period, the value of Aegon's shareholdings attributable to renewable energy decreased with 21% from USD 33 million in the first quarter of 2016 to USD 26 million in the fourth quarter of 2017. In contrast, the value of Aegon's shareholdings attributable to fossil fuels fluctuated more sharply: and showed a net 1% decrease between the first quarter of 2016 and the fourth quarter of 2017. Since the end of 2016 the value of Aegon's shareholdings attributable to fossil fuels dropped below the baseline trend, pointing to a net divestment from fossil fuel shares.

Figure 26 **Aegon shareholdings by energy sector (2016-2017, in USD million)**

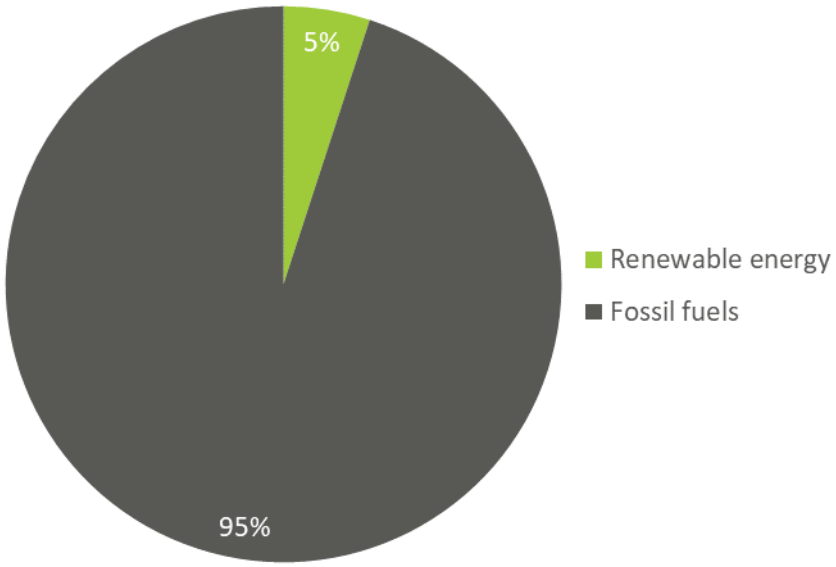


This divestment is still only limited in scale, as only 5% of identified shareholdings by Aegon was attributable to renewable energy at the end of 2017, and 95% to fossil fuels. The previous study found that in the last quarter of 2014, 2% of identified shareholdings by Aegon was attributable to renewable energy, and 98% to fossil fuels.

4.2.3 Bondholdings

Figure 27 provides an overview of the distribution of Aegon's identified bondholdings attributable to fossil fuels and renewable energy. The value of bondholdings attributable to fossil fuels and renewable energy amounted to USD 591 million, with USD 32 million attributable to renewable energy and USD 559 million attributable to fossil fuels.

Figure 27 Overview of Aegon bondholdings by energy sector (end of 2017)



4.2.4 Commitments

Aegon has made some commitments concerning climate change in recent years. In 2016 Aegon announced that it would strike coal mining off its investment list.[41] Furthermore, Aegon has urged Shell to set long-term (2050) and quantitative targets aligned with the goals of the Paris Climate Agreement, by voting for the resolution Follow This.[42] In 2015, Aegon signed the Paris Pledge for Action and in 2018, Aegon Nederland signed the Spitsbergen Ambition for Climate Agreement, committing to measure the climate impact of Aegon Nederland's financing activities and investments, in order to contribute to the Dutch climate targets: at least 49% CO_2 reduction in 2030, and 100% in 2050.[43]

4.3 Allianz

This section provides an analysis of the loans and investments by Allianz that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017.

4.3.1 Loans and underwriting

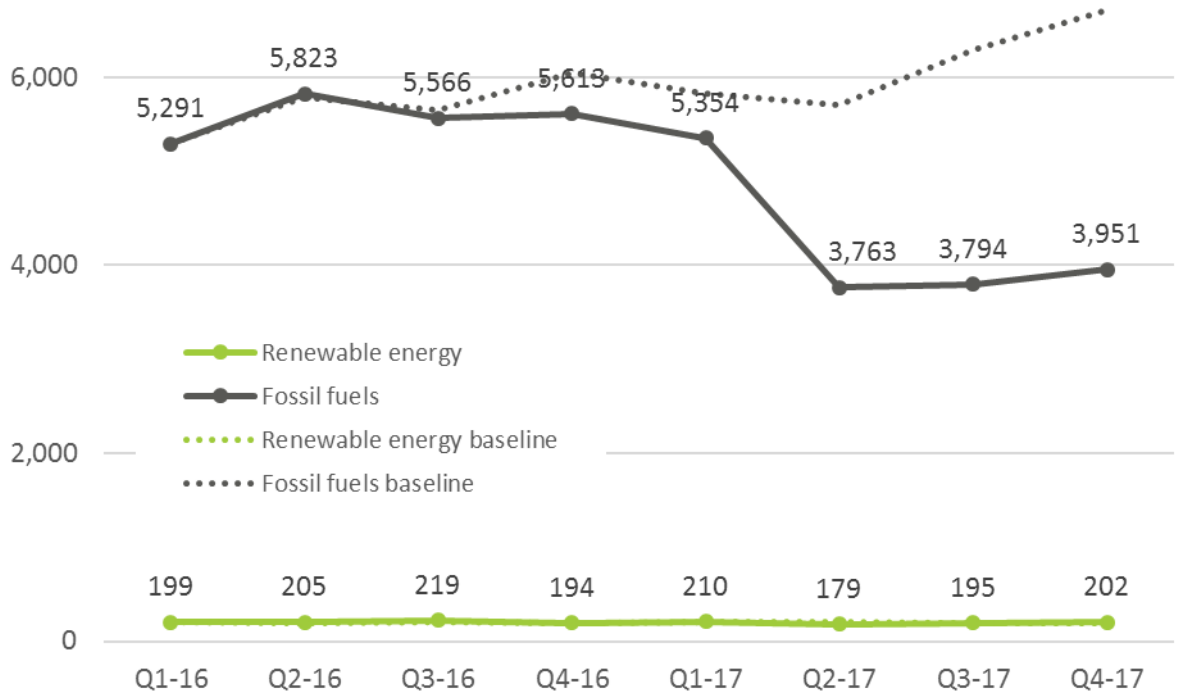
This research did not identify any loans or underwriting services provided by Allianz to the selected companies, as Allianz is an insurance company with very limited banking activities.

4.3.2 Shareholdings

Throughout the 2016-2017 period, the value of Allianz's shareholdings attributable to renewable energy increased with 2% from USD 199 million in the first quarter of 2016 to USD 202 million in the fourth quarter of 2017. In contrast, the value of Allianz's shareholdings attributable to fossil fuels fluctuated more sharply and showed a net 25% decrease between the first quarter of 2016 and the fourth quarter of 2017.

This means that the value of Allianz's shareholdings attributable to fossil fuels developed below the baseline trend, indicating a net divestment by Allianz from fossil fuel shares. This divestment is still only limited in scale, as only 5% of Allianz's shareholdings was attributable to renewable energy at the end of 2017, and 95% to fossil fuels.

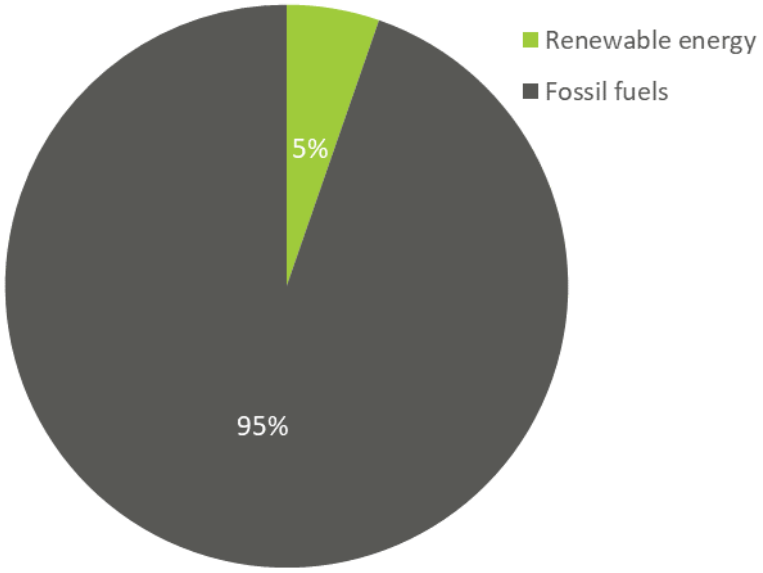
Figure 28 Allianz shareholdings by energy sector (2016-2017, in USD million)



4.3.3 Bondholdings

Figure 29 provides an overview of the distribution of Allianz identified bondholdings attributable to fossil fuels and renewable energy at the end of 2017. The value of bondholdings attributable to fossil fuels and renewable energy amounted to USD 13.1 billion, with USD 698 million attributable to renewable energy (5%) and USD 12.4 billion attributable to fossil fuels (95%).

Figure 29 Overview of Allianz bondholdings by energy sector (end of 2017)



4.3.4 Commitments

In 2018, Allianz joined the Science Based Target Initiative (SBTi) through which it sets itself long-term climate goals, which are linked to the two-degree-target of the Paris Climate Agreement.[44] Allianz also signed the Paris Pledge for Action.[45] Furthermore, Allianz has made a commitment to phase out its proprietary investments in coal based businesses, by 2040.[46] Nevertheless, in 2018 Allianz was the only insurance group that voted against the Follow This climate resolution at the Shell AGM.[47]

4.4 APG Group

This section provides description of the loans and investments by the APG Group that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017.

4.4.1 Loans and underwriting

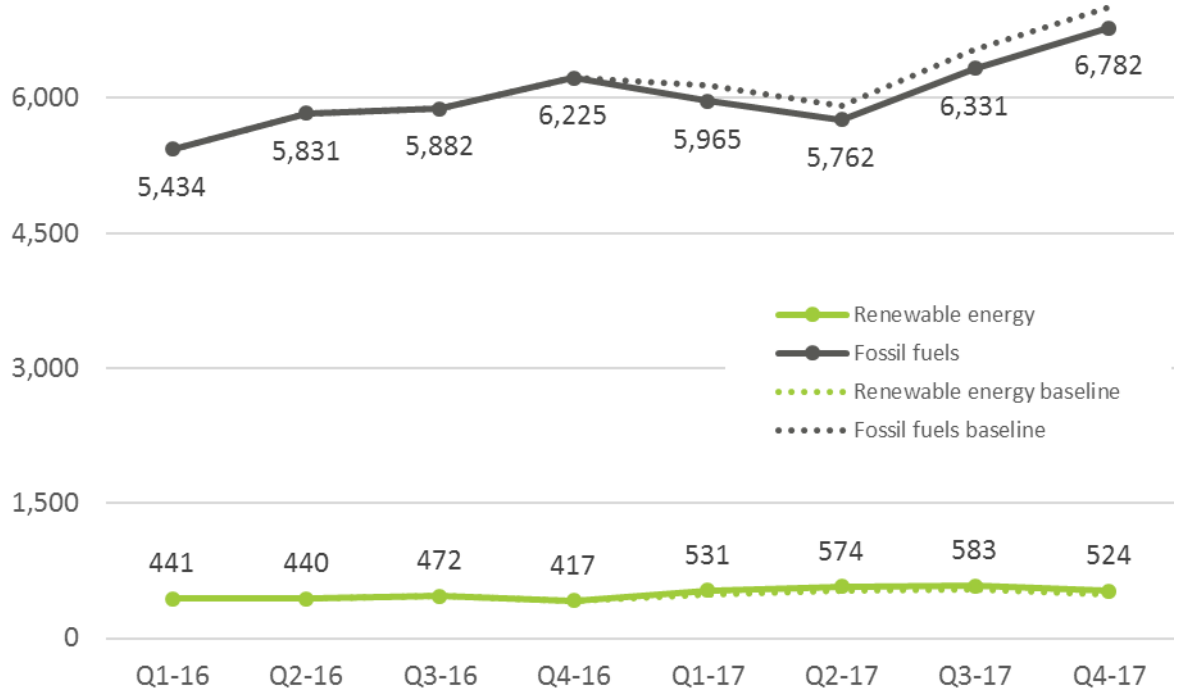
This research did not identify any loans or underwriting services provided by APG Group to the selected companies, as APG Group does not have banking activities.

4.4.2 Shareholdings

In the 2016-2017 period, the value of APG's shareholdings attributable to renewable energy increased with 19% from USD 441 million in the first quarter of 2016 to USD 524 million in the fourth quarter of 2017. The value of APG's shareholdings attributable to fossil fuels fluctuated more and showed a net 25% increase between the first quarter of 2016 and the fourth quarter of 2017.

However, the value of APG's shareholdings attributable to fossil fuels as of the fourth quarter of 2016 fell slightly below the baseline trend, indicating a slight divestment from fossil fuel shares. This divestment is still only limited in scale, as only 7% of APG's shareholdings was attributable to renewable energy at the end of 2017, and 93% to fossil fuels.

Figure 30 APG Group shareholdings by energy sector (2016-2017, in USD million)



4.4.3 Bondholdings

This research did not identify any investments in bonds from APG Group in the selected companies.

4.4.4 Commitments

APG has made the commitment to being more transparent about the climate impact of its investments. Furthermore, APG has committed to reducing its carbon footprint by 2020 to 25% below the 2014 level.[48] APG did not sign the Paris Pledge for Action. APG abstained from voting on the resolution Follow This, that urged Shell to set long-term (2050) and quantitative targets aligned with the goals of the Paris Climate Agreement.[49]

4.5 ASR

This section provides description of the loans and investments by ASR that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. Data was collected from all fund reports for ASR's own funds. As quarterly reporting of holdings was not identified, the data included examines the funds' holdings as of the second and fourth quarters of 2016 and 2017. The data were adjusted according to ASR's feedback. For most of the data, ASR did not confirm or deny the results.

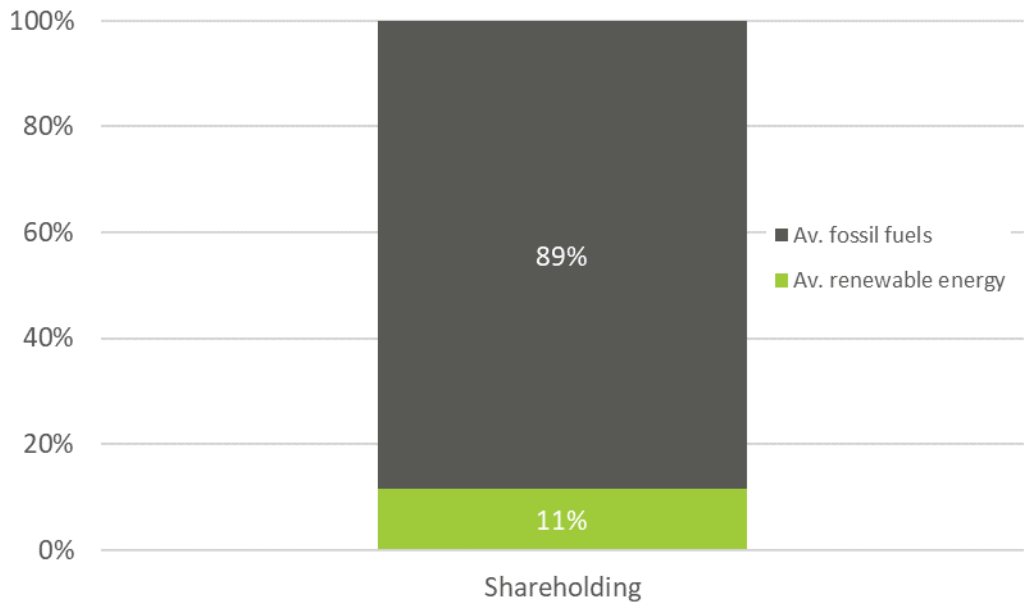
4.5.1 Loans and underwriting

This research did not identify any loans or underwriting services provided by ASR to the selected companies, as ASR does not have banking activities.

4.5.2 Shareholdings

Figure 31 provides an overview of the average distribution of the investments in shares by ASR in the selected companies attributable to fossil fuels and renewable energy. Investments in shares by ASR in the selected companies identified through ASR's fund reporting had an overall increase of 64% from USD 45 million in the second quarter of 2016 to USD 73 million in the fourth quarter of 2017 with an increase in shares attributable to renewable energy of 58% and an increase in shares attributable to fossil fuels of 65%. This overall increase is due to ASR launching a new fund in September 2017, ESG IndexPlus Aandelenfonds.

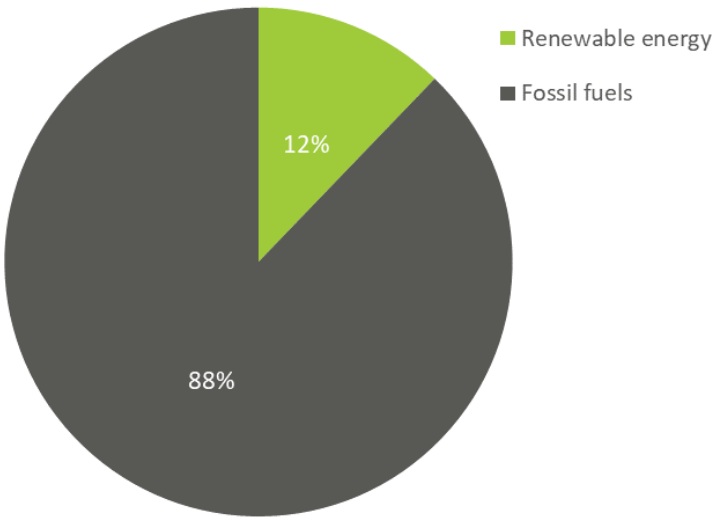
Figure 31 ASR average shareholdings by energy sector (2016-2017)



4.5.3 Bondholdings

Figure 32 provides an overview of the distribution of ASR identified bondholdings attributable to fossil fuels and renewable energy. The value of bondholdings attributable to fossil fuels and renewable energy amounted to USD 62 million, with USD 8 million attributable to renewable energy (12%) and USD 54 million attributable to fossil fuels (88%).

Figure 32 Overview of ASR bondholdings by energy sector (end of 2017, in USD million)



4.5.4 Commitments

ASR has made several commitments regarding climate change. It is a signatory of the Paris Pledge for Action and it supports the Spitsbergen Ambition.[50] ASR in 2016 also made commitments to exclude from investment companies that derive more than 30% of their revenues from coal or lignite. Since 2017, the responsible investment policy also excludes companies that derive more than 30% of their revenues from activities regarding tar sands or shale oil.[51]

4.6 NN Group

This section provides an analysis of the loans and investments by NN Group that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. In their response, NN Group commented that due to the size of the study scope, they would refrain from providing feedback on the data.

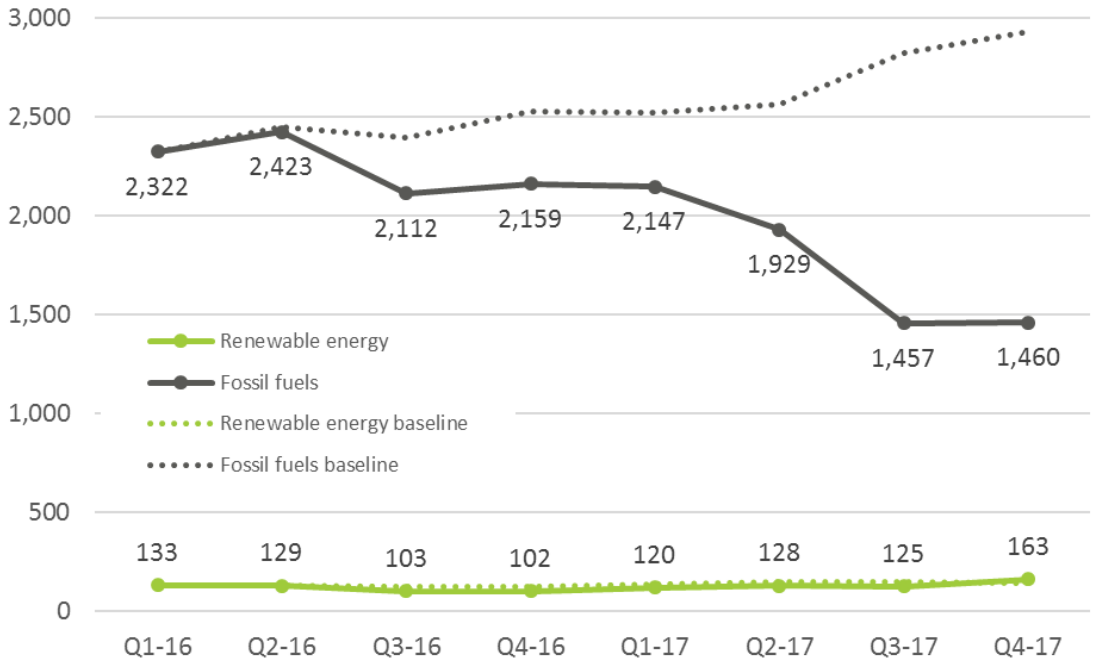
4.6.1 Loans and underwriting

This research did not identify any loans or underwriting services provided by NN Group to the selected companies, as NN Group does not have banking activities. It is primarily a provider of insurance and investment management.

4.6.2 Shareholdings

Throughout the 2016-2017 period, the value of NN Group's shareholdings attributable to renewable energy fluctuated generally in line with the baseline. The value of these holdings increased with 23% from USD 133 million in the first quarter of 2016 to USD 163 million in the fourth quarter of 2017. In contrast, the value of NN Group's shareholdings attributable to fossil fuels fluctuated more sharply and showed a net 37% decrease between the first quarter of 2016 and the fourth quarter of 2017.

Figure 33 NN Group shareholdings by energy sector (2016-2017, in USD million)

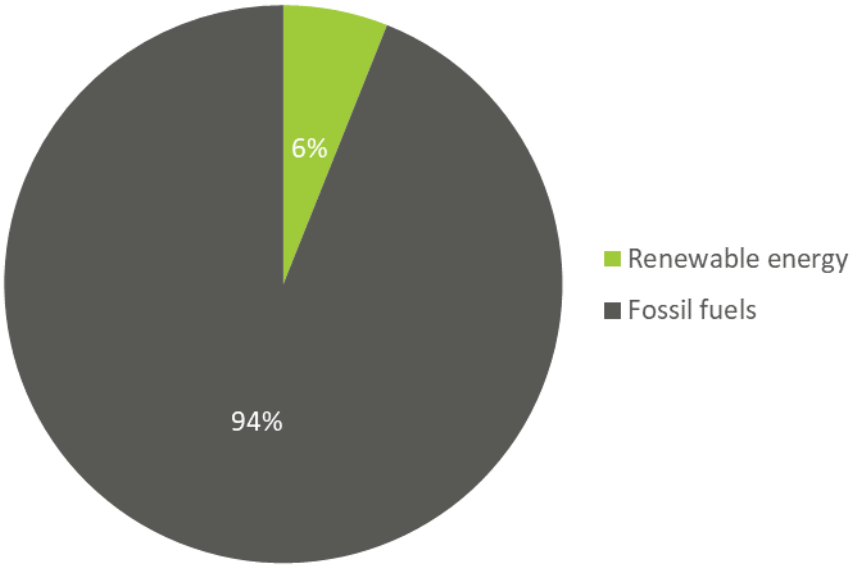


The value of NN Group's shareholdings attributable to fossil fuels developed below the baseline, indicating a net divestment. This divestment is still only limited in scale, as only 10% of NN Group's shareholdings was attributable to renewable energy at the end of 2017, and 90% to fossil fuels.

4.6.3 Bondholdings

Figure 34 provides an overview of the distribution of NN Group's identified bondholdings attributable to fossil fuels and renewable energy. The value of bondholdings attributable to fossil fuels and renewable energy amounted to USD 2.4 billion, with USD 147 million attributable to renewable energy (6%) and USD 2.3 billion attributable to fossil fuels (94%).

Figure 34 Overview of NN Group bond holdings by energy sector (end of 2017)



4.6.4 Commitments

NN Group has not made many commitments regarding climate change. NN Group does participate in the Climate Action 100+, a five-year initiative to engage with important greenhouse gas emitters and other companies across the global economy that have significant opportunities to drive the clean energy transition and help achieve the goals of the Paris Agreement.[52] In 2018, NN Investment Partners urged Shell to set long-term (2050) and quantitative targets aligned with the goals of the Paris Climate Agreement, by voting for the resolution Follow This.[53] NN Group signed the Paris Pledge for Action but it did not support the Spitsbergen Ambition.[54]

4.7 Vivat

This section provides a description of the loans and investments by Vivat that can be attributed to renewable energy and fossil fuels in the two-year period 2016-2017. Vivat's asset manager Actiam did not provide any feedback on the data.

4.7.1 Loans and underwriting

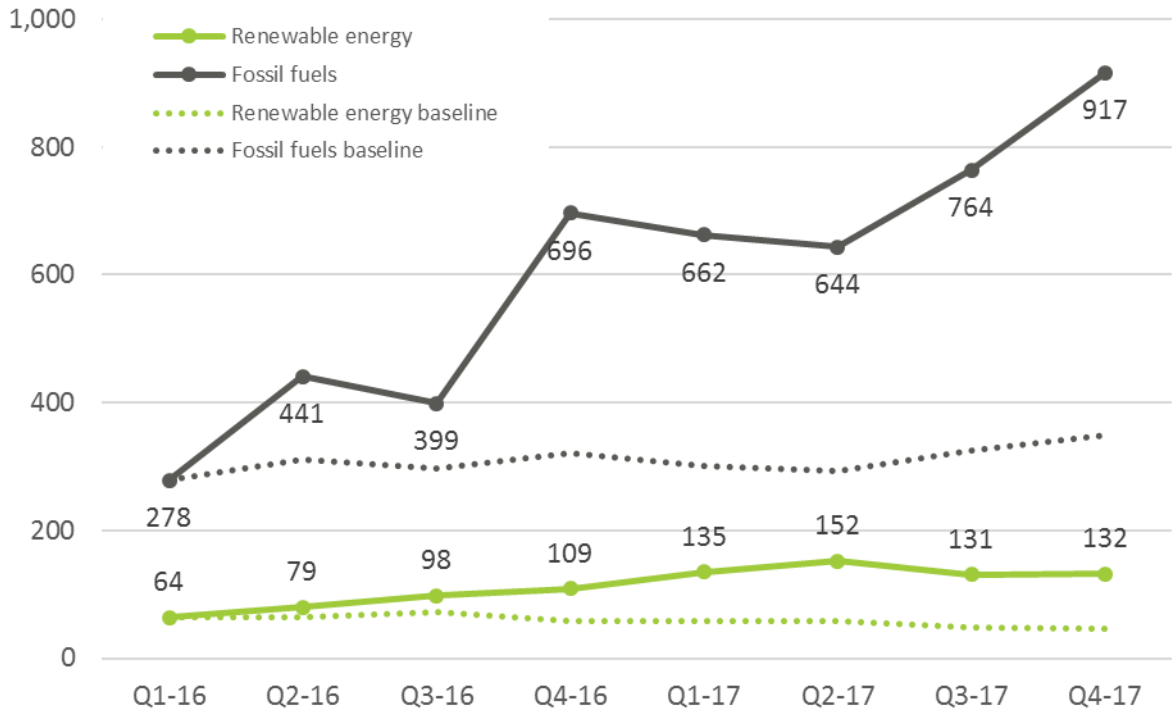
This research did not identify any loans or underwriting services provided by Vivat to the selected companies, as Vivat does not have banking activities.

4.7.2 Shareholdings

The value of Vivat's shareholdings attributable to both fossil fuels and renewable energy exceeded the baseline trend throughout the period of study. This points to additional investments by Vivat in shares attributable to fossil fuels and in shares attributable to renewable energy.

The value of shareholdings attributable to fossil fuels increased by 229% from USD 278 million in the first quarter of 2016 to USD 917 million in the fourth quarter of 2017. The value of investments attributable to renewable energy increased at a much slower pace of 105% from USD 64 million in the first quarter of 2016 to USD 132 million in the fourth quarter of 2017. In the last quarter of 2017, 87% of Vivat's shareholdings was attributable to fossil fuels and 13% to fossil fuels.

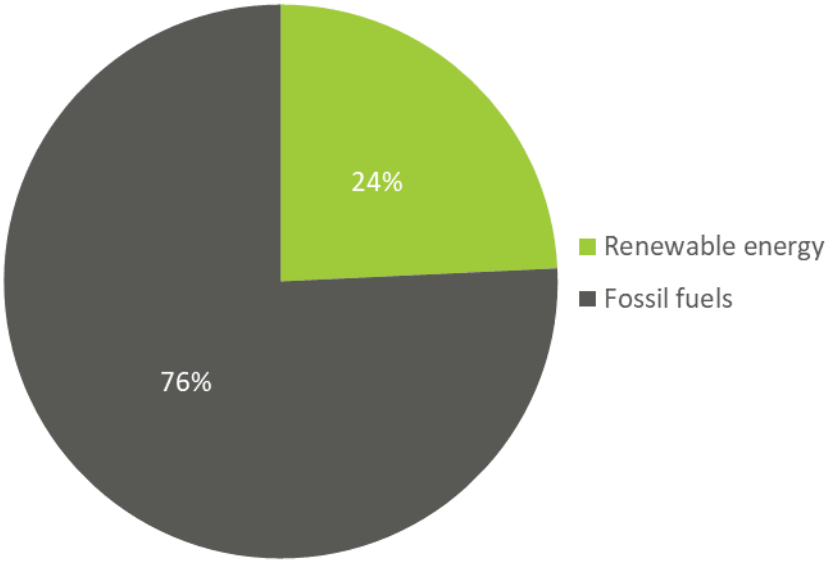
Figure 35 Vivat shareholdings by energy sector (2016-2017, in USD million)



4.7.3 Bondholdings

Figure 36 provides an overview of the distribution of Vivat's bondholdings attributable to fossil fuels and renewable energy. The value of the bondholdings amounted to USD 48 million, of which 24% was attributable to renewable energy and 76% to fossil fuels.

Figure 36 Overview of Vivat bondholdings by energy sector (end of 2017)



4.7.4 Commitments

Actiam, the asset manager of Vivat Verzekeringen, has made policy commitments to tackle climate change. Actiam does not invest in coal mining or coal power generation, as well as shale gas or tar sands. Furthermore, Actiam has set CO_2 reduction targets for its investment portfolio. In 2025 Actiam wants to have decreased the CO_2 footprint of its investments by at least 25% in relation to 2010. By 2040 the target is at least 40% in relation to 2010.[55] Actiam is a signatory of the Paris Pledge for Action and it supports the Spitsbergen Ambition.[56] In 2018, Actiam voted for the Follow This shareholder resolution at the Shell AGM, urging Shell to set long-term (2050) and quantitative targets aligned with the goals of the Paris Climate Agreement.[57]

Chapter 5 Analysis and conclusions

This chapter outlines the trends identified in the financing of energy activities by the fourteen financial institutions selected by the Dutch FFG coalition (see Table 8). This selection includes the seven most important banks operating on the Dutch market and the seven most important insurance companies operating on the Dutch market.

Table 8 Selected financial institutions operating in the Netherlands

Banks	Insurance companies
ABN Amro	Achmea
ING Bank	Aegon
NIBC	Allianz
Rabobank	APG
Triodos Bank	ASR
Van Lanschot Kempen	NN Group
De Volksbank	Vivat

For the two-year period 2016-2017 the research project has calculated, for each financial institution and for each category of loans and investments, the proportion of financing geared towards *Fossil fuels* and towards *Renewable energy*. This research is based on loans to, investments in, a selection of 292 global energy companies (Table 10) and 85 renewable energy projects (Table 11).

All credits and underwritings provided by the selected financial institutions to the selected energy companies and renewable energy projects from January 2016 to the end of December 2017 are taken into account. The results for all Dutch financial institutions together are analysed in section 5.2. For shareholdings and bondholdings the available quarterly data in this time period were used, which also allows for a trend analysis within the two year-period. The combined results for the selected financial institutions together (Table 8) are analysed in sections 5.3 and 5.4. Section 5.5 provides a brief summary of the commitments made by the Dutch financial institutions with regard to the mitigation of climate change, while section 5.6 draws conclusions.

By way of introduction, section 5.1 first discusses the findings on the portfolio composition of power generation companies by energy sector.

5.1 Portfolio composition of power generation companies by energy sector

This section provides an overview of the portfolio composition by energy sector of the 25 largest global power generation companies and the four power generation companies active in the Netherlands selected for this research project (see section 2.4).

Figure 37 provides an overview of the changes in portfolio composition of the global power generation companies selected for this research project. This figure demonstrates the continued reliance on fossil fuels, with an increase in the proportion of renewable energy capacity (wind, solar, geothermal and ocean energy) of 1% between 2016 and 2017.

Despite this marginal increase, many power generation companies are making significant efforts to change the composition of their electricity generation portfolio, such as by moving away from coal-fired to gas-fired power plants, by investing in new renewable energy plants (primarily solar and wind), or by working to improve the energy efficiency and reduce the CO_2 output of their power plants. But with a large installed capacity operating predominantly on fossil fuels which is not yet reaching the end of its lifecycle, the proportion will not change fast in the years to come. Huge investments in renewable energy would be needed to speed up this process.

Figure 37 Installed capacity by energy sector of global power generation companies

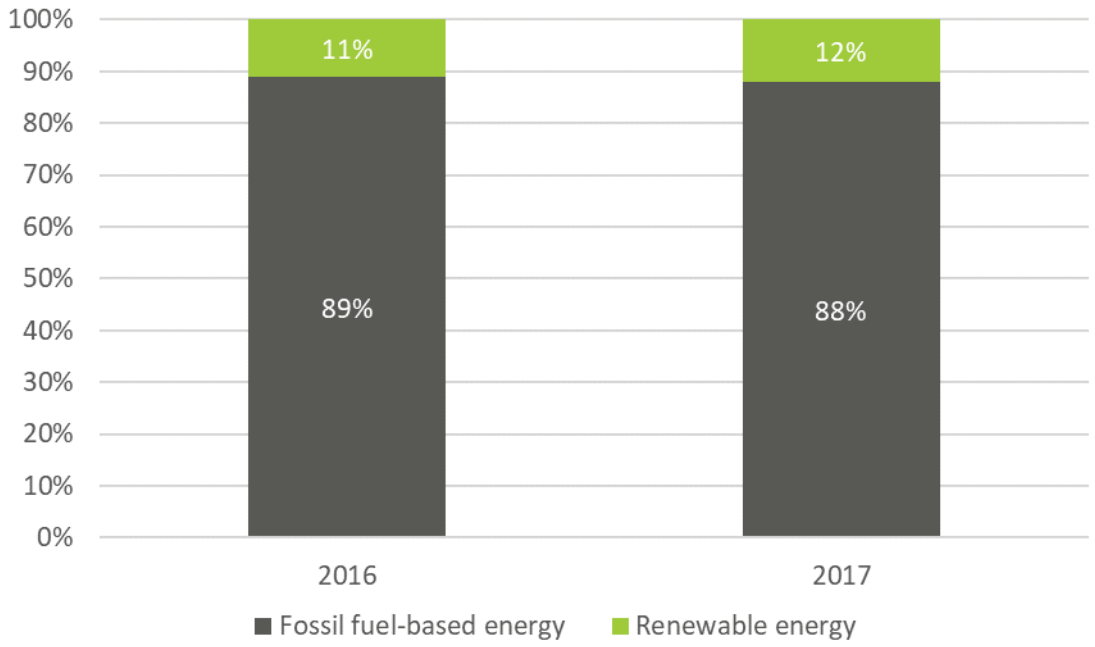
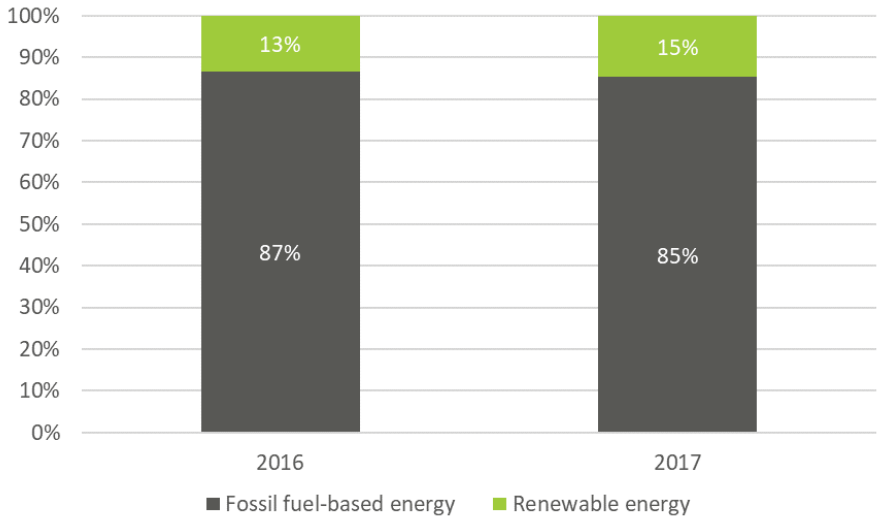


Figure 38 provides an overview of the changes in portfolio composition of the four power generation companies active in the Netherlands. Similar in distribution to the installed capacity portfolio of the global power generation companies, it shows small additions to renewable energy (solar, wind, geothermal and ocean) between 2016 and 2017, while fossil fuels remain the primary source for electricity generation from the selected power generation companies active in the Netherlands.

Within this selection of companies, renewable energy plays a slightly bigger role than for the global power generation companies shown in Figure 37, amounting to 15% of the companies' total energy generating portfolio. It should be noted that there are significant disparities between the nationally-selected companies that are active globally and the ones that only have power generation capacity in the Netherlands. Power generation companies in the selection that are only active in the Netherlands have more than 50% of their installed capacity based on renewable energy, whereas less than 10% of the portfolio of the companies active globally originates from renewable energy. However, globally active companies in the selection have a significantly larger power generation portfolio.

Figure 38 Installed capacity by energy sector of Dutch power generation companies



5.2 Loans and underwriting

This section provides an analysis of how the loans and underwriting provided by Dutch financial institutions to the selected companies and renewable energy projects are attributable to fossil fuels and to renewable energy. Section 5.2.1 ranks the financial institutions active in the Netherlands on the basis of their financing (loans and underwriting together) of fossil fuels. Section 5.2.2 analyses the development of loans by all Dutch financial institutions together, looking at the proportions of financing going to fossil fuels and to renewable energy. Section 5.2.3 makes the same analysis for underwriting.

5.2.1 Ranking of Dutch banks

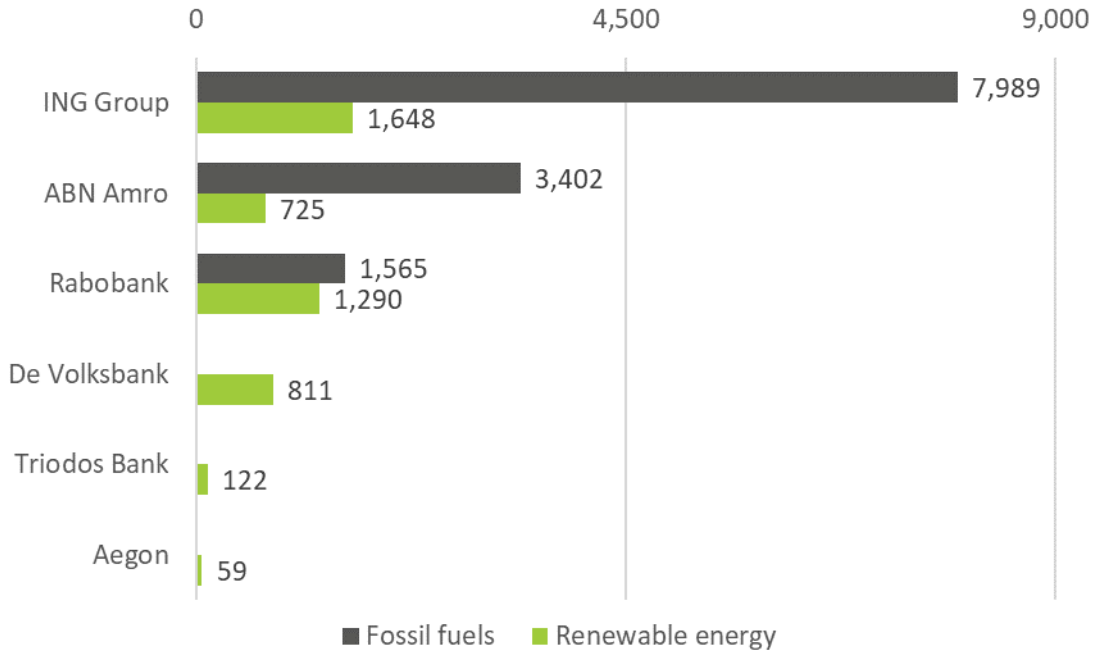
Figure 39 provides a ranking of Dutch banks in terms of their financing (loans and underwriting services combined) attributable to fossil fuels in the two-year period 2016-2017. Of all loans and underwritings, 94% was provided by the three big banks ING Bank, ABN Amro and Rabobank. ING Bank accounts for USD 8.0 billion of fossil fuel financing, accounting for 83% of its total energy financing. This percentage is only slightly lower than the findings for the 2013-2014 period in the previous study, when fossil fuels accounted for 87% of all financing by ING Bank.

ABN Amro was responsible for USD 3.4 billion of fossil fuel financing, which accounts for 82% of its total energy financing. This is a considerable step back compared to the period 2013-2014 analysed in the previous study, when 68% of ABN Amro's loans and underwriting was attributable to fossil fuels.

With USD 1.6 billion of fossil fuel financing, Rabobank ranks third. But different from the two other top-3 banks, Rabobank has an almost even distribution between the energy sectors with 45% of all financing attributable to renewable energy. However, this percentage has gone down slightly in comparison to the period 2013-2014 researched in the previous study, when 49% of all Rabobank's financing was attributable to renewable energy.

De Volksbank, Triodos Bank and Aegon have also provided loans to the energy sector in the research period, but all of their financing was attributable to renewable energy. For De Volksbank and Triodos Bank this is similar to the findings in the previous study on the 2013-2014 period. For Aegon no energy financing was found in the previous study.

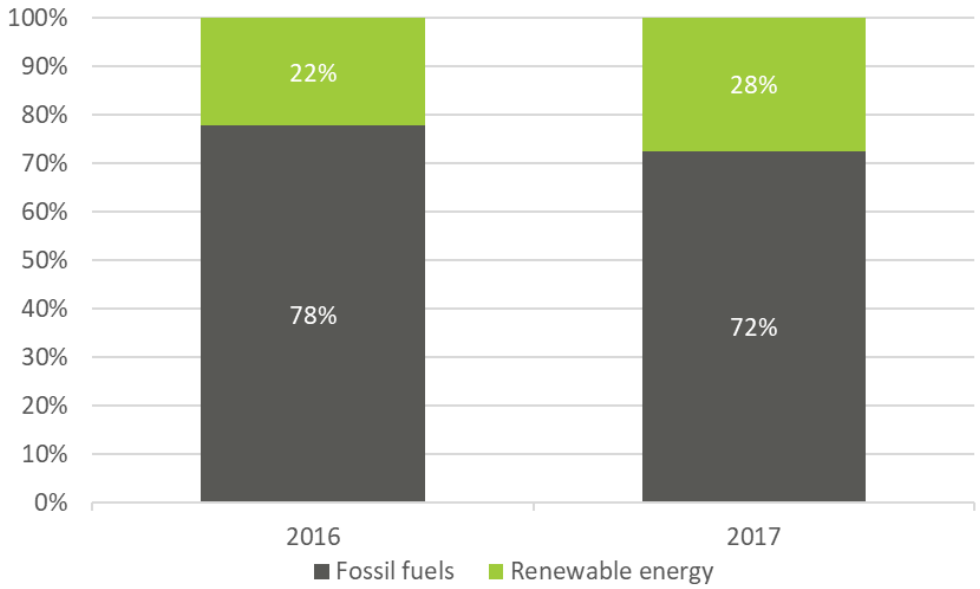
Figure 39 Ranking Dutch financial institutions on loans and underwriting to different energy sectors (2016-2017, USD million)



5.2.2 Development of loans by Dutch banks

Figure 40 compares the loans and renewable energy project financing by Dutch banks by energy sector, for 2016 and 2017. The graph demonstrates that Dutch financial institutions have increased their financing of renewable energy, from USD 1.6 billion in 2016 to USD 2.4 billion in 2017, representing a 51% increase. Simultaneously, financing attributable to fossil fuels increased as well, but less significantly, from USD 5.5 billion in 2016 to USD 6.3 billion in 2017, representing a 14% increase over the previous year. These two developments result in an increase in the proportion of all energy loans attributable to renewable energy from 22% to 28%. Correspondingly, from 2016 to 2017, the proportion of all loans attributable to fossil fuels has decreased from 78% in 2016 to 72% in 2017.

Figure 40 Loans by Dutch banks by energy sector, 2016-2017

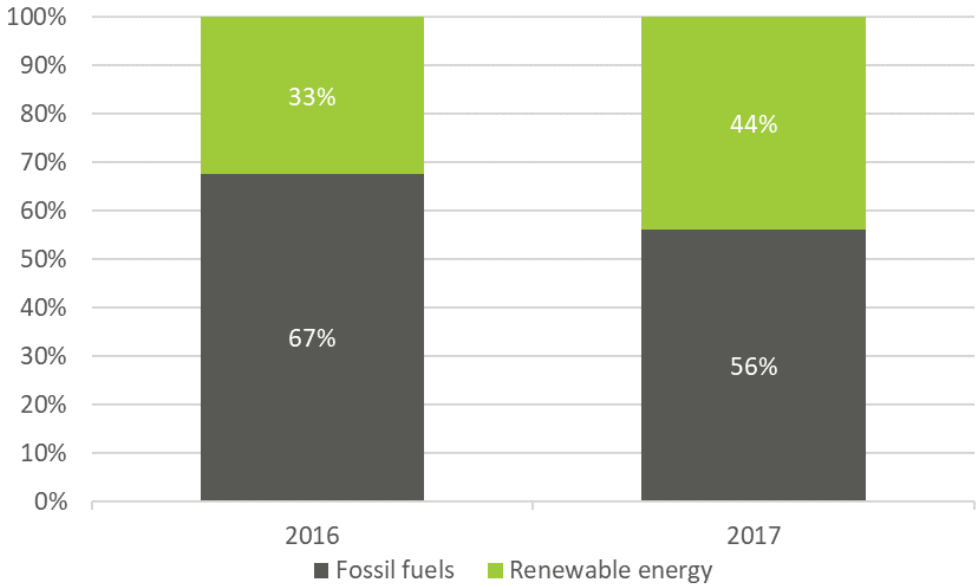


In the previous *Undermining our Future* study, we found that in the period 2013-2014 78% of the identified loans of Dutch banks to the energy sector were attributable to fossil fuels, and 22% to renewable energy. In the period 2016-2017, these figures have slightly improved as on average 75% of the identified loans to the energy sector were attributable to fossil fuels, and 25% to renewable energy.

5.2.3 Development of underwriting by Dutch banks

Figure 41 shows the trend in underwriting services attributable to renewable energy and fossil fuels by Dutch banks during the 2016-2017 period. Underwriting services attributable to fossil fuels decreased by 30% in 2017, from USD 638 million in 2016 to USD 447 million in 2017. In contrast, underwriting services attributable to renewable energy increased by 15%, from USD 307 million in 2016 to USD 352 million in 2017. As a result the proportion of all underwriting services by Dutch banks which is attributable to renewable energy increased from 33% in 2016 to 44% in 2017.

Figure 41 Underwriting services provided by Dutch banks by energy sector

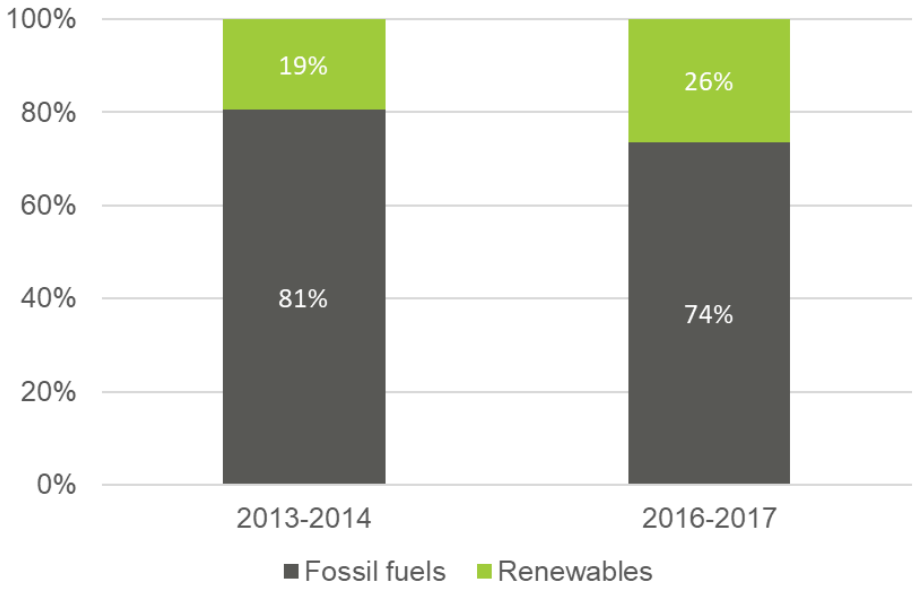


In the previous *Undermining our Future* study, we found that in the period 2013-2014 90% of the underwriting by Dutch banks for the energy sector was attributable to fossil fuels, and 10% to renewable energy. In the period 2016-2017 this has clearly improved, on average 62% of the underwriting for the energy sector was attributable to fossil fuels, and 38% to renewable energy.

5.2.4 Comparison between 2013-2014 and 2016-2017

Figure 42 compares fossil fuels and renewable energy proportions of loans and underwriting by Dutch banks in the period 2013-2014, comparing the findings of the previous *Undermining our Future* study with the results in the present research period (2016-2017). It shows that the proportion of loans and underwriting to companies engaged in fossil fuels has decreased. While in the period 2013-2014 81% of loans and underwriting was attributable to fossil fuels, in the current study 74% of loans and underwriting is attributable to fossil fuels.

Figure 42 Loans and underwriting by Dutch banks by energy sector, 2013-2014 and 2016-2017



5.3 Shareholdings

This section provides an analysis of how the value of shareholdings owned and managed by Dutch insurance companies and banks is attributable to fossil fuels and to renewable energy. Section 5.3.1 ranks the financial institutions active in the Netherlands according to the total value of their shareholdings attributable to fossil fuels. Section 5.3.2 shows the development trends in the values of the shareholdings attributable to fossil fuels and renewable energy.

5.3.1 Ranking of insurance companies and banks

0 ranks the Dutch banks and insurance companies according to the average value of their shareholdings attributable to fossil fuels, in the period 2016-2017. APG Group, Allianz and NN Group held the largest investments in shares. APG held on average over USD 6 billion in shares attributable to fossil fuels, Allianz approximately USD 5 billion, and NN Group slightly over USD 2 billion. In total the selected financial institutions held on average more than USD 15 billion in shares attributable to fossil fuels compared with USD 1.2 billion attributable to renewable energy.

Figure 43 Dutch insurance companies and banks ranked on average value of shareholdings attributable to fossil fuels (2016-2017, in USD million)

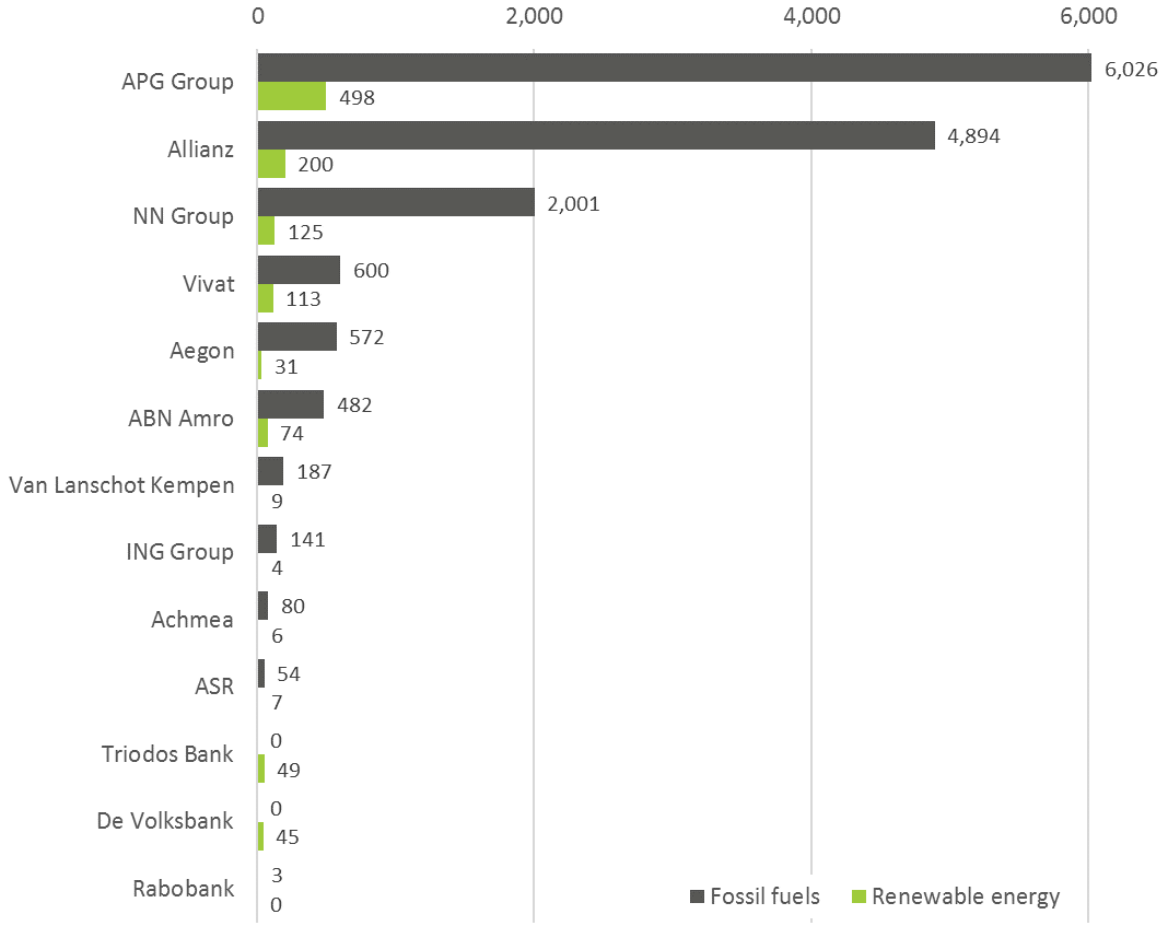
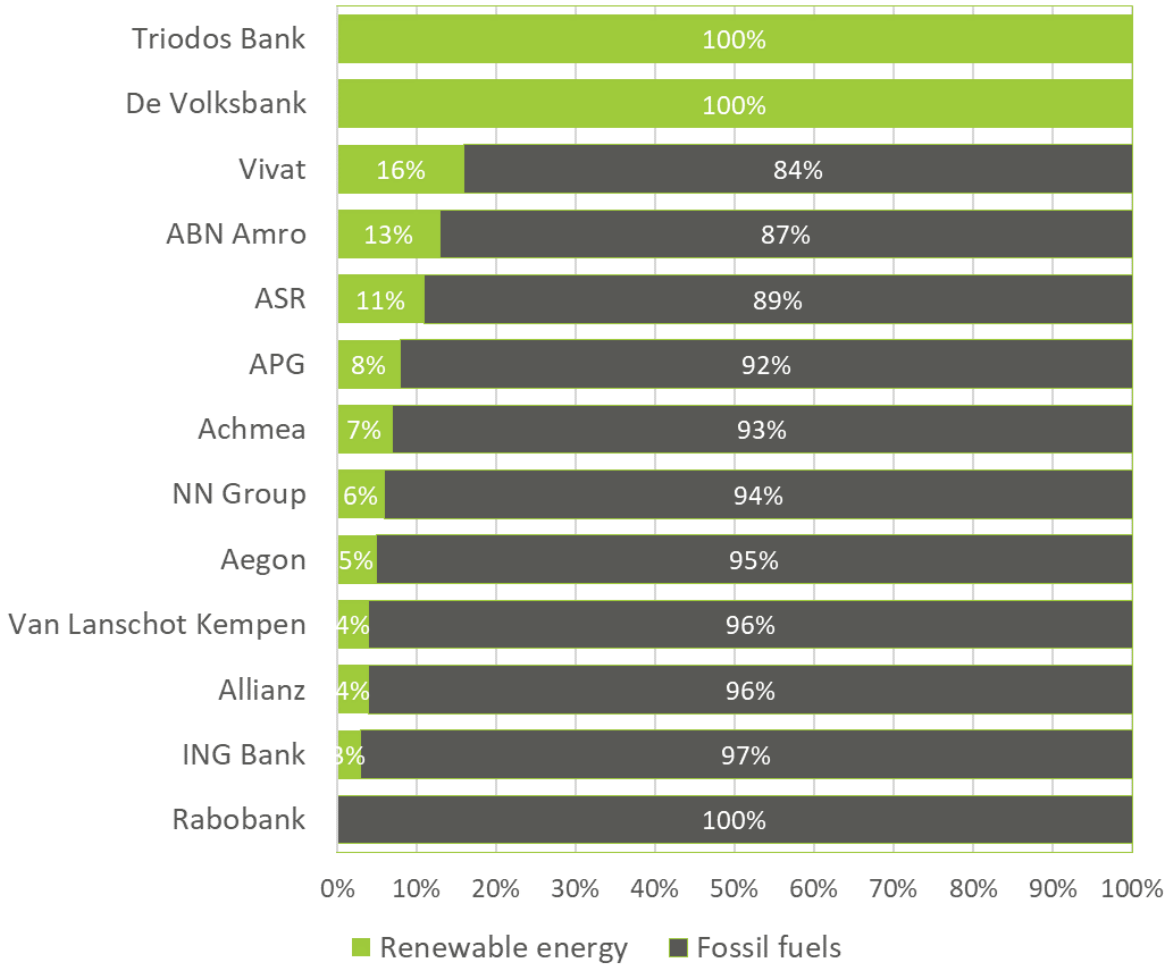


Figure 44 provides an overview of the value of the shareholdings attributable to fossil fuels and to renewable energy for the different Dutch banks and insurance companies. It shows that for all financial institutions, except for Triodos Bank and De Volksbank, the proportion of fossil fuels in the total value of their energy shareholdings was more than 80% throughout the period. For more than half of the selected financial institutions, this proportion exceeded 90%. For Triodos Bank and De Volksbank, on the other hand, the proportion of renewable energy was 100%. This indicates significant differences between the banks and insurance companies when it comes to their investments in renewable energy and fossil fuels.

Figure 44 **Average proportion of shareholding values attributable fossil fuels and renewable energy (2016-2017, in USD million)**



The percentages shown in Figure 44 are averages for the full 2016-2017 period. Among the 10 financial institutions for which trend data are available, there were three which actually increased their investments in shares attributable to fossil fuels during this period: ABN Amro, Van Lanschot Kempen and Vivat. The proportion of the value of the shareholdings of ABN Amro and Vivat attributable to fossil fuels therefore increased as well, for Van Lanschot Kempen this percentage stayed equal.

Two banks - Triodos Bank and De Volksbank - stayed stable at 100% of the value of their shareholdings attributable to renewable energy. Three financial institutions (Allianz, ING Bank and NN Group) improved the proportion of the value of their shareholdings attributable to renewable energy during the research period, mainly by making net divestments in their shareholdings attributable to fossil fuels. The renewable energy percentages of Aegon and APG stayed more or less equal.

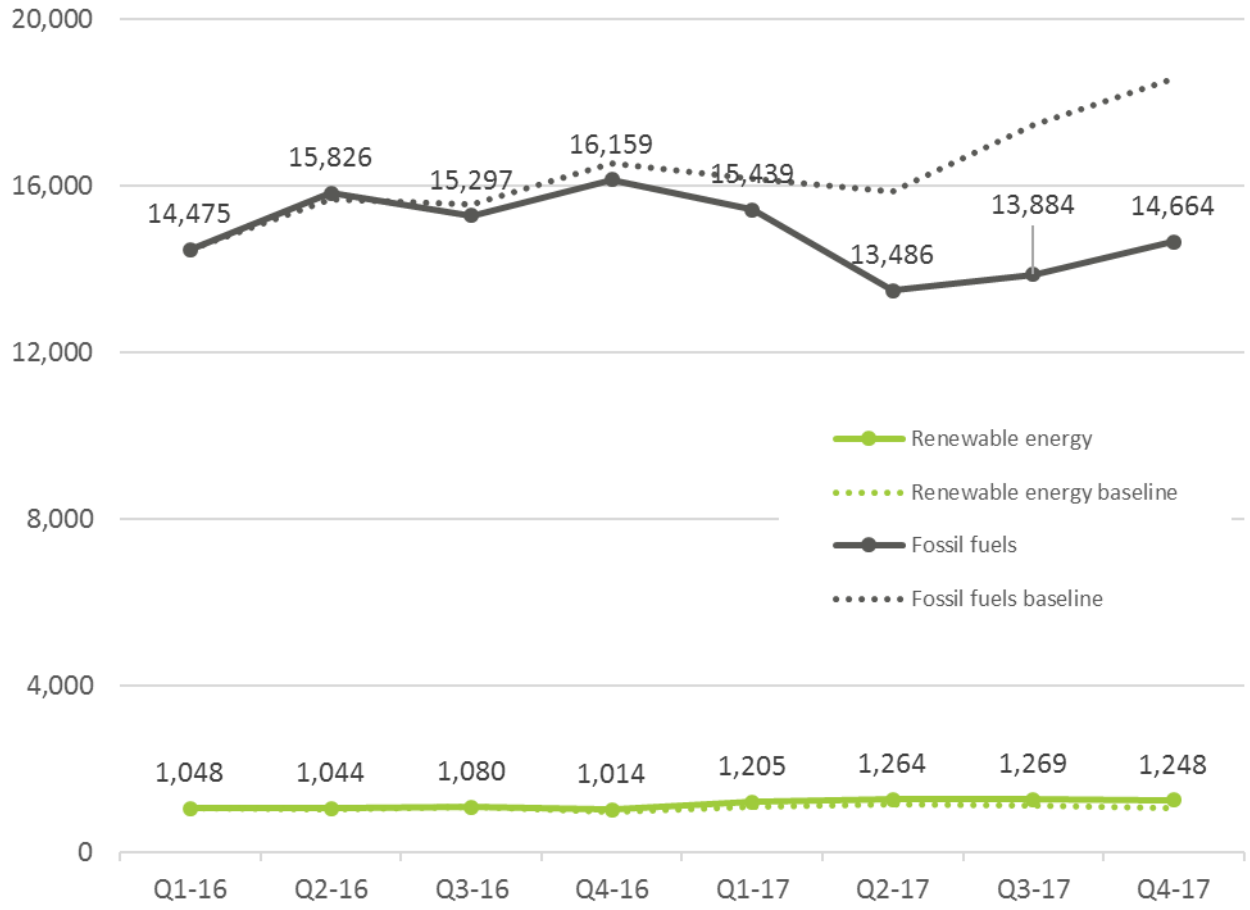
5.3.2 Quarterly trend in shareholding values

Figure 45 shows that as of the third quarter of 2016 the value of shareholdings attributable to fossil fuels owned or managed by all Dutch financial institutions together fell below the baseline. This indicates a divestment trend away from shares attributable to fossil fuels.

The value of shareholdings attributable to renewable energy during the two-year period have increased slightly stronger than the baseline, indicating that Dutch financial institutions have been investing more in the shares of companies attributable to renewable energy throughout this period.

As a result, the value of shareholdings attributable to renewable energy has increased 19% from USD 1.0 billion in the first quarter of 2016 to USD 1.2 billion in the fourth quarter of 2017. In the same period the value of shareholdings attributable to fossil fuels decreased with 1% from USD 14.5 billion to USD 14.7 billion.

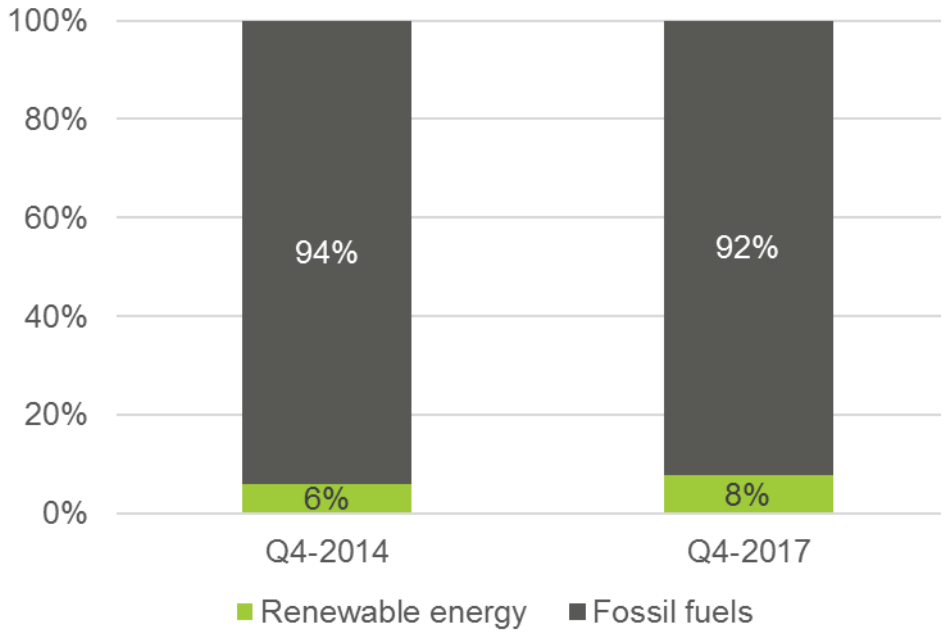
Figure 45 Quarterly value of shareholdings of 10 Dutch financial institutions by energy sector (2016-2017, in USD million)*



** Achmea, ASR and Rabobank have been excluded from this figure due to data availability only at specific quarters rather than throughout the research period. For NIBC no shareholdings were found.*

Comparing with our previous study, *Undermining our Future,* Figure 46 presents an overview of the fossil fuels and renewable energy proportions of the value of shareholdings owned and managed by Dutch financial institutions at the end of the years 2014 (only banks) and 2017 (banks and insurance companies combined). The share of renewable energy in shareholding values has increased from 6% to 8% in this three-year period.

Figure 46 **Energy sector proportions in total energy shareholdings of Dutch financial institutions at year end 2014 and 2017**



5.4 Bondholdings

This section provides an analysis of the investments in bondholdings by financial institutions active in the Netherlands in the selected companies It first provides an overview of identified investments in bonds attributable to fossil fuels and renewable energy of the selected companies. Second, it ranks the financial institutions active in the Netherlands according to the total bondholdings identified in selected companies attributable to fossil fuels and renewable energy.

Value of bondholdings by the financial institutions active in the Netherlands in the selected companies attributable to fossil fuels and renewable energy amounted to USD 19.3 billion, as of the end of 2017 date. Figure 47 provides an overview of the distribution between fossil fuels and renewable energy for the total bondholdings identified. Value of bondholdings attributable to fossil fuels amounted to USD 18.2 billion, or 94% of total bondholdings identified, whereas value of bondholdings attributable to renewable energy amounted USD 1.1 billion, or 6% of total bondholdings identified.

Figure 47 Distribution of bondholdings by Dutch financial institutions (end of 2017)

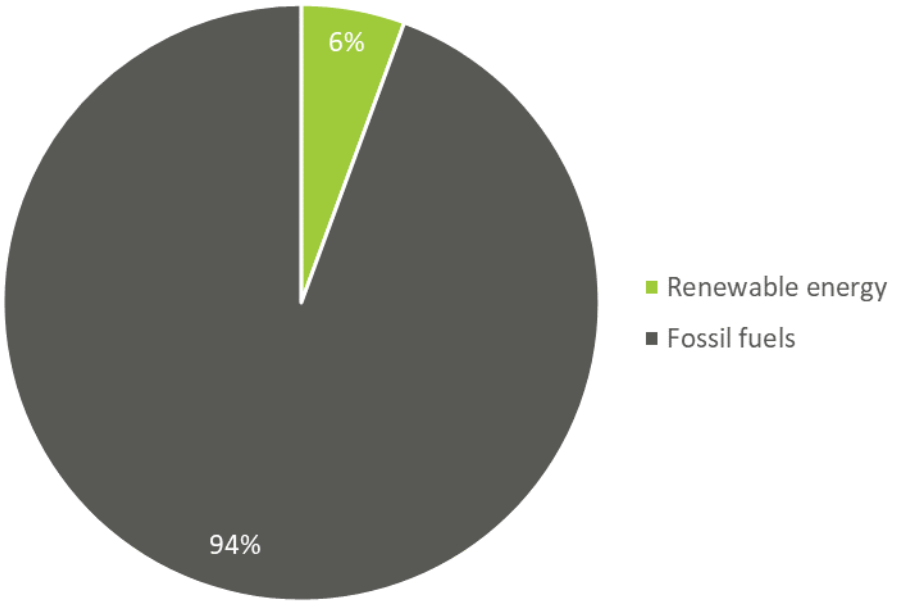
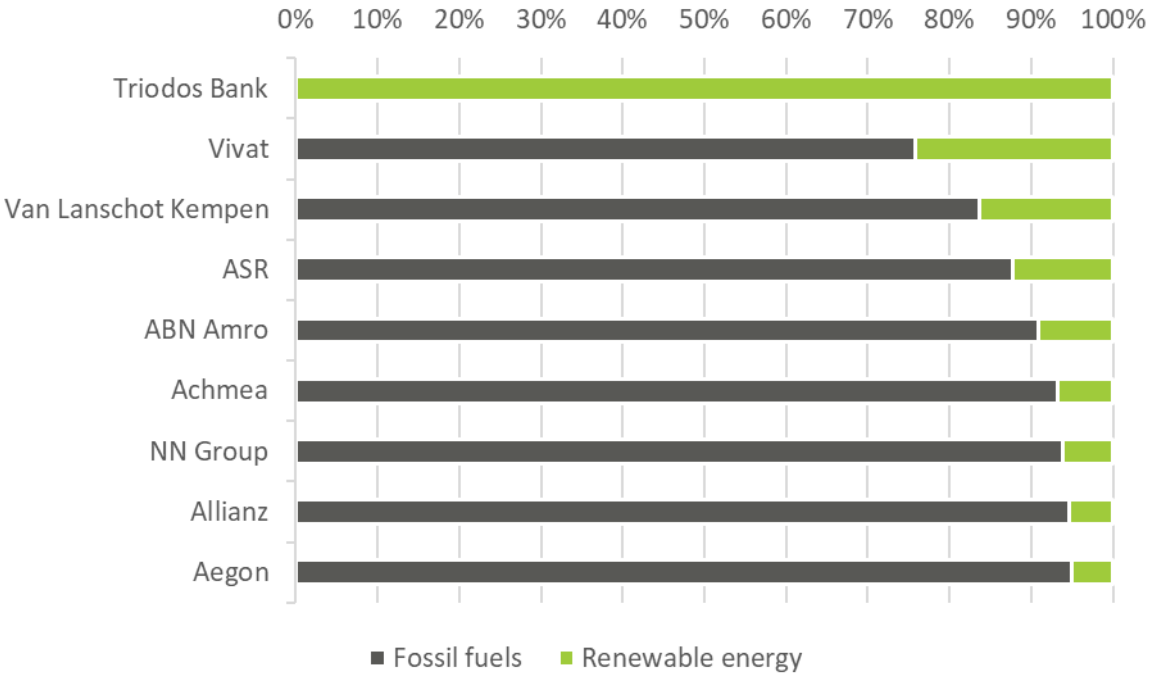


Figure 48 shows for all Dutch financial institutions the proportions attributable to fossil fuels and to renewable energy of the values of the bondholdings they owned or managed.

Figure 48 Ranking of Dutch financial institutions based on proportion of the value of their bondholdings attributable to renewable energy (end of 2017)



5.5 Commitments

All of the researched financial institutions have signed at least one statement expressing the need to reduce greenhouse gas emissions in order to halt climate change. The Spitsbergen Ambition 2018-2020 (mainly banks: ABN Amro, Aegon, ASR, ING, Rabobank, Triodos Bank, Vivat) and Paris Pledge for Action (only insurance companies: Aegon, Achmea, Allianz, ASR, Vivat) are most common.

Except for Achmea, APG, NN Group and Van Lanschot Kempen, all selected financial institutions have announced divestment or phase-out strategies for certain energy sources. These strategies can refer to either coal-fired power generation, coal mining, shale gas, shale oil or tar sands, or to a combination of different energy sources.

Some financial institutions also disclose the climate impact of part of their portfolios. In October 2016, the Dutch banking sector concluded the "Dutch Banking Sector Agreement on international responsible business conduct regarding human rights" with NGOs, trade unions and the government. Although this agreement is about human rights, it is also relevant for the topic of this study as it includes various commitments on improving the transparency on loans and investments.[58]

Often these divestment policies as well as the disclosure of emissions of financed and investee companies are limited to a selection of companies according to size or sector or type of finance. Only a few financial institutions (Vivat, De Volksbank) have actually set reduction targets for their entire portfolio.

5.6 Conclusions

Overall, this study points to a trend among Dutch banks and insurance companies towards more financing for renewable energy, both in the values of loans and investments and in the proportions of energy loans and investments going to renewable energy. But although the trends are positive towards renewable energy, the proportions of energy sector financing attributable to fossil fuels are dominant for all types of loans and investments by Dutch banks and insurance companies.

5.6.1 Bank loans and underwriting

Loans by Dutch banks to renewable energy increased by 51% in the research period, from USD 1.6 billion in 2016 to USD 2.4 billion in 2017. The proportion of all energy loans attributable to renewable energy increased from 22% in 2016 to 28% in 2017. Compared to the average 22% share of renewable energy in energy loans by Dutch banks in 2013-2014, we now found an average 25% share for 2016-2017.

Underwriting by Dutch banks for renewable energy increased by 15% in the research period, from USD 307 million in 2016 to USD 352 million in 2017. The proportion of all energy underwriting attributable to renewable energy increased from 33% in 2016 to 44% in 2017. Compared to the average 10% share of renewable energy in energy underwriting by Dutch banks in 2013-2014, we now found an average 38% share for 2016-2017.

With regard to the proportion of their financing (loans and underwriting services combined) attributable to fossil fuels in the two-year period 2016-2017, especially ING Bank and ABN Amro rank disappointingly. ING Bank accounts for USD 8.0 billion of fossil fuel financing, accounting for 83% of its total energy financing (down from 87% in 2013-2014). ABN Amro was responsible for USD 3.4 billion of fossil fuel financing, representing 82% of its total energy financing - up from 68% in the 2013-2014 period!

5.6.2 Investments by insurance companies and banks

On average over the 2016-2017 period, Dutch insurance companies and banks owned or managed more than USD 15 billion in shares attributable to fossil fuels compared with USD 1.2 billion attributable to renewable energy. As of the third quarter of 2016 the value of shareholdings attributable to fossil fuels owned or managed by Dutch insurance companies and banks has fallen below the baseline. This indicates a divestment trend away from fossil fuels. The value of shareholdings attributable to renewable energy increased slightly stronger than the baseline during the research period, indicating that Dutch insurance companies and banks have been investing more in the shares of companies attributable to renewable energy. The share of renewable energy in shareholding values has increased from 6% in the last quarter of 2014 to 8% in the last quarter of 2017.

For all insurance companies and banks, except for Triodos Bank and De Volksbank, the proportion of fossil fuels in the value of their energy shareholdings was more than 80% on average throughout the research period. Three insurance companies and banks actually increased their investments in shares attributable to fossil fuels during this period: ABN Amro, Van Lanschot Kempen and Vivat. In contrast, three insurance companies and banks (Allianz, ING Bank and NN Group) improved the proportion of the value of their shareholdings attributable to renewable energy during the research period, mainly by making net divestments in their shareholdings attributable to fossil fuels.

With regards to bondholdings, no trend could be identified during the research period, due to data availability. For nine insurance companies and banks we identified bondholdings in energy companies. At the end of 2017, the value of bondholdings attributable to renewable energy amounted to USD 1.1 billion, or 6% of all energy bondholdings owned or managed by Dutch insurance companies and banks. except for Triodos Bank, the proportion of bondholdings attributable to fossil fuels averaged between 76% and 95%.

5.6.3 Climate change commitments

All of the researched 14 banks and insurance companies have signed at least one statement expressing the need to reduce greenhouse gas emissions in order to halt climate change. Overall, the results of this study indicate that the Dutch financial sector as a whole is inclined to live up to these commitments and move their financing towards renewable energy. But given the dominant proportions of all loans and investments still financing fossil fuels, much more needs to be done by the Dutch financial sector to take its responsibility in contributing to the mitigation of climate change.

This study also points to individual banks and insurance companies staying far behind in the average trend towards increasing renewable energy financing. 83% of ING Bank's loans to the energy sector still goes to fossil fuels, while ABN Amro even increased the fossil fuel share in its energy loans from 68% to 82%. Also, several insurance companies made significant net investments in fossil fuel shareholdings during the research period. As climate change is already impacting the lives of people severely, especially of the poorest people in developing countries, all Dutch banks and insurance companies should urgently shift all forms of energy loans and investments towards renewable energy.

References

1 IPCC (2014): *Climate Change 2014: Synthesis Report: Summary for Policymakers.*, Geneva, Switserland: Intergovernmental Panel on Climate Change, p. 2.

2 IPCC (2014): *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* Geneva, Switserland: Intergovernmental Panel on Climate Change, p. 20.

3 IEA (2015), *Energy and climate change. World energy outlook special report,* Paris, France: IEA, p. 29.

4 McGlade, C. and P. Ekins (2015, January 7), "The geographical distribution of fossil fuels unused when limiting global warming to 2 °C", in *Nature,* volume 517, pages 187–190

5 IPCC (n.d.), "Scenario Process for AR5. Representative Concentration Pathways (RCPs)", online: http://sedac.ipcc-data.org/ddc/ar5_scenario_process/RCPs.html, viewed in September 2018.

6 K. Anderson and D. Calverley op. cit.; Prof Kevin Anderson, Dr John Broderick and Dr Maria Sharmina (2014) „Climate Change under Fossil Intensive Development", *Research Briefing,* Oxford, United Kingdom: Oxfam Great Britain, p. 12;

G.C. Nelson, M.W. Rosegrant, J. Koo, R. Robertson, T. Sulser, T. Zhu, C. Ringler, S. Msangi, A. Palazzo, M. Batka, M. Magalhaes, R. Valmonte-Santos, M. Ewing and D. Lee (2009) „Climate Change: Impact on Agriculture and Costs of Adaptation", Washington DC: International Food Policy Research Institute;

Unicef (n.d.), "Data for under-five populations of USA and Canada", online: http://www.unicef.org/statistics/index_24183.html, viewed in September 2018.

7 FAO, IFAD, UNICEF, WFP and WHO (2018), *The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition*, Rome, Italy: FAO.

8 UNFCCC (2015): *Synthesis report on the aggregate effect of the intended nationally determined contributions,* Report of the Ad Hoc Working Group on the Durban Platform for Enhanced Action to the Conference of the Parties 21, Paris, France: United Nations Framework Convention on Climate Change.

9 UNEP Inquiry (2015), *The Financial System We Need*, Geneva, Switzerland: UNEP Inquiry.

10 FSB (2015, January 16), *FSB announces membership of Task Force on Climate-related Financial Disclosures.*

11 United Nations Framework Convention on Climate Change (n.d.), "GHG Profiles – Annex I", online: http://di.unfccc.int/ghg_profile_annex1, viewed in September 2018.

12 United Nations Framework Convention on Climate Change (n.d.), "GHG Profiles – Annex I", online: http://di.unfccc.int/ghg_profile_annex1, viewed in September 2018.

13 United Nations Framework Convention on Climate Change (n.d.), "GHG Profiles – Annex I", online: http://di.unfccc.int/ghg_profile_annex1, viewed in September 2018

14 United Nations Framework Convention on Climate Change (n.d.), "GHG Profiles – Annex I", online: http://di.unfccc.int/ghg_profile_annex1, viewed in September 2018.

15 Intergovernmental Panel on Climate Change (2015, February), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, New York: Cambridge University Press, p. 539-540; Lewis, S. Estefen, et al. (2011). "Ocean Energy," in: *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation*. Prepared by Working Group III of the Intergovernmental Panel on Climate Change [O. Edenhofer, R. Pichs-Madruga, et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, p. 518.

16 Fearnside, P.M. (2016, April), "Greenhouse gas emissions from hydroelectric dams in tropical forests". in: *Alternative Energy and Shale Gas Encyclopedia,* [J. Lehr & J. Keeley (eds.)], John Wiley & Sons Publishers, New York, USA, pp. 428-438.

17 ABN Amro (2018), *Exclusion list January 2018.*

18 ABN Amro (n.d.), "ABN AMRO boosts circular economy", online: www.abnamro.com/nl/en/about-abnamro/in-society/sustainability/our-focal-points/circular-economy/index.html, viewed October 2018.

19 2degrees (2018), *De Spitsbergen Ambitie 2018-2020;*

ABN Amro (2014), Climate Change Statement 2014.

20 ABN Amro (2017, December 12), *Financiële instellingen ontwikkelen methodiek om hun CO2-impact te meten.*

21 2degrees (2018), *De Spitsbergen ambitie 2018-2020.*

22 ING (2015, November 27), *ING ends new coal financing, continues to reduce coal portfolio.*

23 ING (2018, September 14), *ING will steer portfolio towards two-degree goal to help combat climate change.*

24 NIBC (2018), *Sustainability Report 2017,* p. 7.

25 2degrees (2018), *Spitsbergen Ambition 2018-2020;* Paris Pledge for Action (2015), "Who's joined", online: www.parispledgeforaction.org/whos-joined/, viewed October 2018.

26 Rabobank (2018), *Sustainability Policy Framework,* p. 66.

27 UNEP FI (2017, September 5), *Rabobank joins 12 leading banks to pilot recommendations of Task Force on Climate-related Financial Disclosures.*

28 Rabobank (2018), *Annual Report 2017,* p. 122-123.

29 2degrees (2018), *Spitsbergen Ambition 2018-2020;*

Paris Pledge for Action (2015), "Who's joined", online: www.parispledgeforaction.org/whos-joined/, viewed October 2018.

30 Triodos (2016), *Triodos bank's minimum standards,* p. 7.

31 BankTrack (n.d.), "From the Paris Pledge to the Paris Agreement", online: www.banktrack.org/news/from_the_paris_pledge_to_the_paris_agreement, viewed in October 2018; 2degrees (2018), *Spitsbergen Ambition 2018-2020.*

32 Van Lanschot Kempen (n.d.), "Van Lanschot Kempen's bijdrage aan de Sustainable Development Goals", online: https://www.vanlanschotkempen.com/verantwoord, viewed in October 2018.

33 Van Lanschot Kempen (2018), *Our contribution to the Sustainable Development Goals,* Van Lanschot Kempen, p. 2.

34 Follow This (2018), "Climate Resolution Shell", online: follow-this.org/investors/support-nl/, viewed October 2018.

35 2degrees (2018), *Spitsbergen Ambition 2018-2020;*

Paris Pledge for Action (2015), "Who's joined", online: www.parispledgeforaction.org/whos-joined/, viewed October 2018.

36 ASN Bank (2018), *Climate Policy,* p. 9-10; De Volksbank (n.d.), "De Volksbank carbon neutral", online: www.devolksbank.nl/corporate-responsibility/banking-with-a-human-touch/de-volksbank-carbon-neutral.html, viewed in October 2018.

37 BankTrack (n.d.), "From the Paris Pledge to the Paris Agreement", online: www.banktrack.org/news/from_the_paris_pledge_to_the_paris_agreement, viewed in October 2018; 2degrees (2018), *Spitsbergen Ambition 2018-2020.*

38 Achmea (n.d.), "CO2", online: www.achmea.nl/duurzaam-ondernemen/co2/paginas/default.aspx, viewed in October 2018.

39 Achmea (n.d.), "CO2", online: www.achmea.nl/duurzaam-ondernemen/co2/paginas/default.aspx, viewed in October 2018.

40 Follow This (2018), "Climate Resolution Shell", online: follow-this.org/investors/support-nl/, viewed October 2018.

41 Aegon (2016, May 25), *Aegon strikes coal mining off investment list.*

42 Aegon (2018, April 17), *Aegon will vote in favor of resolution Follow This.*

43 Aegon (n.d.), "International commitments", online: www.aegon.com/sustainability/international-commitments/, viewed in October 2018.

2degrees (2018), *De Spitsbergen Ambitie 2018-2020.*

44 Allianz (2018, May 4), *Allianz is driving change toward a low-carbon economy with an ambitious climate protection package.*

45 Achmea (n.d.), "CO2", online: www.achmea.nl/duurzaam-ondernemen/co2/paginas/default.aspx, viewed in October 2018.

46 Allianz (2018, May 4), *Allianz is driving change toward a low-carbon economy with an ambitious climate protection package.*

47 Royal Dutch Shell (2018), "Shell climate ambition snubbed by seven out of eight largest Dutch insurance firms", online: www.royaldutchshellgroup.com/2018/06/02/shell-climate-ambition-snubbed-by-seven-out-of-eight-largest-dutch-insurance-firms/, viewed October 2018.

48 APG (2018), *Verslag Verantwoord Beleggen 2017,* p. 31.

49 Follow This (2018), "Climate Resolution Shell", online: follow-this.org/investors/support-nl/, viewed October 2018.

50 Paris Pledge for Action (2015), "Who's joined", online: www.parispledgeforaction.org/whos-joined/, viewed October 2018; ASR (2018, June 26), *a.s.r. signs the Spitsbergen Ambition for Climate Agreement.*

51 ASR (2017), *a.s.r. Positioning Paper on Climate Change and Energy Transition,* p. 4.

52 NN Group (2017), "Five things to know about NN's recent climate change projects", online: www.nn-group.com/Media/Article/Five-things-to-know-about-NNs-recent-climate-change-projects.htm, viewed October 2018.

53 Follow This (2018), "Climate Resolution Shell", online: follow-this.org/investors/support-nl/, viewed October 2018.

54 Paris Pledge for Action (2015), "Who's joined", online: www.parispledgeforaction.org/whos-joined/, viewed October 2018; 2degrees (2018), *De Spitsbergen Ambitie 2018-2020.*

55 Actiam (2015), *Focusthema klimaat Strategie,* pp. 2-3.

56 Paris Pledge for Action (2015), "Who's joined", online: www.parispledgeforaction.org/whos-joined/, viewed October 2018; Actiam (2015), *Focusthema klimaat Strategie,* p. 2.

57 Follow This (2018), "Climate Resolution Shell", online: follow-this.org/investors/support-nl/, viewed October 2018.

58 SER (2016, October), "Dutch Banking Sector Agreement on international responsible business conduct regarding human rights", online: https://www.ser.nl/~/media/files/internet/publicaties/overige/2010_2019/2016/dutch-banking-sector-agreement.ashx

Appendix 1 Selections of financial institutions, companies and projects

Table 9 provides an overview of the selected financial institutions for all three national Fair Finance Guide coalitions participating in this research project

Table 9 Selected financial institutions

Financial institution	Coalition country
ABN Amro	Netherlands
Achmea	Netherlands
Aegon	Netherlands
Allianz	Netherlands
APG	Netherlands
ASR	Netherlands
Banque Postale	France
BNP Paribas	France
BPCE Group	France
Crédit Agricole	France
Crédit Coopératif	France
Crédit Mutuel – CIC Group	France
Danske Bank	Sweden
De Volksbank	Netherlands
Ekobanken	Sweden
Handelsbanken	Sweden
ING Bank	Netherlands
JAK Medlemsbank	Sweden
La Nef	France
Länsförsäkringar	Sweden
NIBC	Netherlands
NN Group	Netherlands
Nordea	Sweden
Rabobank	Netherlands
SEB	Sweden
Skandia	Sweden
Société Générale	France
Swedbank	Sweden
Triodos Bank	Netherlands
Van Lanschot Kempen	Netherlands
Vivat	Netherlands

Table 10 lists per energy sector the 292 companies selected for this research project.

Table 10 Selected companies for each energy sector

Energy sector	Company name	Country
Coal mining	Adani	India
Coal mining	Adaro Energy	Indonesia
Coal mining	African Rainbow Minerals	South Africa
Coal mining	Agritrade International	Singapore
Coal mining	Alliance Resource	United States
Coal mining	Alpha Natural Resources	United States
Coal mining	Anglo American	United States
Coal mining	Arch Coal	United States
Coal mining	Banpu	Thailand
Coal mining	Baotailong New Materials	China
Coal mining	Bayan Resources	Indonesia
Coal mining	Beijing Energy Investment Group	China
Coal mining	BHP Billiton	Australia
Coal mining	Bukit Asam	Indonesia
Coal mining	Bumi Resources	Indonesia
Coal mining	China Energy Investment Corporation*	China
Coal mining	China Huadian Corporation	China
Coal mining	China Huaneng Group	China
Coal mining	China Kingho Energy Group	China
Coal mining	China National Coal Group (ChinaCoal)	China
Coal mining	China Pingmei Shenma Energy	China
Coal mining	Cloud Peak Energy	United States
Coal mining	Coal India	India
Coal mining	Consol Energy	United States
Coal mining	Contura Energy	United States
Coal mining	Datong Coal Mine Group	China
Coal mining	Drummond	United States
Coal mining	Energetický a Průmyslový Holding (EPH)	Czech Republic
Coal mining	Energy Earth	Thailand
Coal mining	Essar Energy	India
Coal mining	Eurasian Natural Resources	Luxembourg
Coal mining	Exxaro Resources	South Africa
Coal mining	Foresight Energy	United States
Coal mining	Fujian Energy Group	China
Coal mining	Fuxin Mining Industry	China

Energy sector	Company name	Country
Coal mining	Gansu Jingyuan Coal Industry and Electricity Power	China
Coal mining	Glencore	Switzerland
Coal mining	Guizhou Panjiang Investment Holding	China
Coal mining	Heilongjiang Longmei Mining Holding Group	China
Coal mining	Henan Energy and Chemical Industry Group	China
Coal mining	Henan Shenhuo Group	China
Coal mining	Huaibei Mining Group	China
Coal mining	Huainan Mining Industry Group	China
Coal mining	Hunan Coal Industry Group	China
Coal mining	Indika Energy	Indonesia
Coal mining	Inner Mongolia Yitai Group	China
Coal mining	Jardine Matheson	Indonesia
Coal mining	Jastrzebska Spolka Weglowa (JSW)	Poland
Coal mining	Jiangxi Energy Group	China
Coal mining	Jiangxi Provincial Investment Group	China
Coal mining	Jilin Provincial Coal Industry Group	China
Coal mining	Jindal Steel & Power	India
Coal mining	Jining Mining Group	China
Coal mining	Jizhong Energy Group	China
Coal mining	Kailuan Group	China
Coal mining	LuAn Mining Industry Group	China
Coal mining	Mechel	Russia
Coal mining	Meijin Energy Group	China
Coal mining	Mongolian Mining Corporation	Mongolia
Coal mining	Murray Energy	United States
Coal mining	Natural Resource Partners	United States
Coal mining	New Wei	United States
Coal mining	NLC India	India
Coal mining	Ordos Wulan Coal Group	China
Coal mining	Peabody Energy Corporation	United States
Coal mining	Polska Grupa Energetyczna (PGE)	Poland
Coal mining	RAG	Germany
Coal mining	Reliance Power	India
Coal mining	Rio Tinto	United Kingdom
Coal mining	RWE	Germany
Coal mining	Samruk-Energo	Kazakhstan
Coal mining	Sasol	South Africa

Energy sector	Company name	Country
Coal mining	Shaanxi Coal & Chemical Industry Group	China
Coal mining	Shandong Energy Group	China
Coal mining	Shandong Taifeng Mining Group	China
Coal mining	Shanxi Coal Import & Export Group	China
Coal mining	Shanxi Coking Coal Group	China
Coal mining	Shanxi Jincheng Anthracite Mining Group	China
Coal mining	Shanxi Lanhua Coal Industry Group	China
Coal mining	Shenyang Coal Trade Group	China
Coal mining	Shougang Fushan Resources Group	China
Coal mining	Sichuan Coal Industry Group	China
Coal mining	Singareni Collieries Company (SCC)	India
Coal mining	State Development Investment Corporation (SDIC)	China
Coal mining	State Power Investment Corporation (SPIC)	China
Coal mining	Suek	Russia
Coal mining	Up Energy Development Group	China
Coal mining	Ural Mining Metallurgical Company (UMMC)	Russia
Coal mining	Vale	Brazil
Coal mining	Wanbei Coal-Electricity Group	China
Coal mining	Weishanhu Mining Group	China
Coal mining	Westmoreland Coal	United States
Coal mining	Whitehaven Coal	Australia
Coal mining	Wintime Holding Group	China
Coal mining	Xuzhou Coal Mining Group	China
Coal mining	Yankuang Group	China
Coal mining	Yanquan Coal Industry Group	China
Coal mining	Yunnan Coal Chemical Industry Group	China
Coal mining	Zespol Elektrowni Patnow Adamow Konin (Ze Pak)	Poland
Coal mining	Zhengzhou Coal Industry Group	China
CSP	Abengoa	Spain
CSP	Acciona	Spain
CSP	ACS Cobra	Spain
CSP	ACWA Power	Saudi Arabia
CSP	BrightSource	United States
CSP	General Electric	United States
CSP	Rioglass Solar	Belgium
CSP	Sener	Spain
CSP	Solar Reserve	United States

Energy sector	Company name	Country
CSP	Supcon	China
CSP	TSK	Spain
Power generation - France	Direct Energie	France
Power generation - France	Électricité de France (EDF)	France
Power generation - France	Engie	France
Power generation - France	EOn France Power	France
Power generation - Global	Centrais Eletricas Brasileiras	Brazil
Power generation - Global	China Datang Corporation	China
Power generation - Global	China Energy Investment Corporation*	China
Power generation - Global	China Huadian Corporation	China
Power generation - Global	China Huaneng Group	China
Power generation - Global	Duke Energy	United States
Power generation - Global	Électricité de France (EDF)	France
Power generation - Global	Enel	Italy
Power generation - Global	Engie	France
Power generation - Global	Eskom Holdings	South Africa
Power generation - Global	Federal Electricity Commission (CFE)	Mexico
Power generation - Global	Gazprom	Russia
Power generation - Global	Iberdrola	Spain
Power generation - Global	Korea Electric Power Company (KEPCO)	South Korea
Power generation - Global	Nextera Energy	United States
Power generation - Global	NRG Energy	United States
Power generation - Global	NTPC	India
Power generation - Global	Perusahaan Listrik Negara (PLN Persero)	Indonesia
Power generation - Global	RWE	Germany
Power generation - Global	Saudi Electricity Company	Saudi Arabia
Power generation - Global	Southern Company	United States
Power generation - Global	State Power Investment Corporation (SPIC)	China
Power generation - Global	Tennessee Valley Authority	United States
Power generation - Global	Tokyo Electric Power Company (TEPCO)	Japan
Power generation - Global	Uniper	Germany
Power generation - Global	Vistra Energy	United States
Power generation - Netherlands	Eneco	Netherlands
Power generation - Netherlands	Essent	Netherlands
Power generation - Netherlands	Greenchoice	Netherlands

Energy sector	Company name	Country
Power generation - Netherlands	Nuon	Netherlands
Power generation - Norway	Agder Energi	Norway
Power generation - Norway	BKK	Norway
Power generation - Norway	Eidsiva Energi	Norway
Power generation - Norway	Fjordkraft	Norway
Power generation - Norway	Statkraft	Norway
Power generation - Sweden	Fortum Power and Heat	Sweden
Power generation - Sweden	Statkraft	Norway
Power generation - Sweden	Sydkraft	Sweden
Power generation - Sweden	Vattenfall	Sweden
Geothermal power	Alterra Power Corporation	Canada
Geothermal power	Ansaldo-Tosi	Italy
Geothermal power	Atlas Copco	Sweden
Geothermal power	Ayala Corporation	Philippines
Geothermal power	Calpine	United States
Geothermal power	Chevron	United States
Geothermal power	Enel	Italy
Geothermal power	Exergy	Italy
Geothermal power	Fuji Energy	Japan
Geothermal power	Mitsubishi Corporation	Japan
Geothermal power	Orkuveita Reykjavikur	Iceland
Geothermal power	Ormat Technologies	United States
Geothermal power	Ram Power Corporation	Canada
Geothermal power	Reykjavik Geothermal	Iceland
Geothermal power	Toshiba Corporation	Japan
Ocean energy	Columbia Power Technologies	United States
Ocean energy	Eco Wave Power	Israel
Ocean energy	Électricité de France (EDF)	France
Ocean energy	ELSA	Belgium
Ocean energy	Emera	Canada
Ocean energy	Fred Olsen Energy	Norway
Ocean energy	K-Water	South Korea
Ocean energy	Northwest Energy Innovations	United States
Ocean energy	Nova Innovation	United Kingdom
Ocean energy	Oceantec	Spain
Ocean energy	OpenHydro	France
Ocean energy	Sabella	France

Energy sector	Company name	Country
Ocean energy	Scotrenewables Tidal Power	United Kingdom
Ocean energy	Seabased	Norway
Ocean energy	Tidal Power Scotland	United Kingdom
Ocean energy	Waves4Power	Sweden
Oil & gas	Anadarko Petroleum	United States
Oil & gas	Apache Corporation	United States
Oil & gas	Bashneft	Russia
Oil & gas	Bharat Petroleum Corporation	India
Oil & gas	BP	United Kingdom
Oil & gas	California Resources	United States
Oil & gas	Canadian Natural Resources	Canada
Oil & gas	Cenovus Energy	Canada
Oil & gas	Chevron	United States
Oil & gas	China National Offshore Oil Corporation (CNOOC)	China
Oil & gas	China National Petroleum Corporation (CNPC)	China
Oil & gas	China Petroleum & Chemical Corporation (Sinopec)	China
Oil & gas	ConocoPhillips	United States
Oil & gas	Cosmo Energy Holdings	Japan
Oil & gas	CPC Corporation	Taiwan
Oil & gas	Delek Group	Israel
Oil & gas	Devon Energy	United States
Oil & gas	Ecopetrol	Colombia
Oil & gas	Eni	Italy
Oil & gas	EOG Resources	United States
Oil & gas	EQT Corporation	United States
Oil & gas	ExxonMobil	United States
Oil & gas	Galp Energia	Portugal
Oil & gas	Gazprom	Russia
Oil & gas	Hellenic Petroleum	Greece
Oil & gas	Hess Corp	United States
Oil & gas	Hindustan Petroleum	India
Oil & gas	Husky Energy	Canada
Oil & gas	Idemitsu Kosan	Japan
Oil & gas	Imperial Oil	Canada
Oil & gas	Indian Oil	India
Oil & gas	Inpex Corp	Japan
Oil & gas	International Petroleum Investment	UAE

Energy sector	Company name	Country
Oil & gas	JXTG Holdings	Japan
Oil & gas	KazMunayGaz	Kazakhstan
Oil & gas	Kuwait Petroleum	Kuwait
Oil & gas	Lukoil	Russia
Oil & gas	Marathon Oil Corporation	United States
Oil & gas	MOL	Hungary
Oil & gas	Novatek PAO	Russia
Oil & gas	Occidental Petroleum	United States
Oil & gas	Oil and Gas Development	Pakistan
Oil & gas	Oil and Natural Gas Corporation (ONGC)	India
Oil & gas	Oil India	India
Oil & gas	OMV	Austria
Oil & gas	Origin Energy	Australia
Oil & gas	Petroleo Brasileiro (Petrobras)	Brazil
Oil & gas	Polskie Gornictwo Naftowe i Gazownictwo	Poland
Oil & gas	PTT PCL	Thailand
Oil & gas	Qatar Petroleum	Qatar
Oil & gas	Reliance Industries	India
Oil & gas	Repsol	Spain
Oil & gas	Rosneft	Russia
Oil & gas	Royal Dutch Shell	Netherlands
Oil & gas	Sasol	South Africa
Oil & gas	Shaanxi Yanchang Petroleum Group	China
Oil & gas	SK Holdings	South Korea
Oil & gas	S-Oil Corp	South Korea
Oil & gas	Sonatrach SPA	Algeria
Oil & gas	Statoil	Norway
Oil & gas	Suncor Energy	Canada
Oil & gas	Surgutneftegaz	Russia
Oil & gas	Tatneft	Russia
Oil & gas	Total SA	France
Oil & gas	Trafigura	Netherlands
Oil & gas	Vitol	Netherlands
Oil & gas	Williams Partners	United States
Oil & gas	Woodside Petroleum	Australia
Oil & gas	YPF	Argentina
PV module manufacturing	BYD	China

Energy sector	Company name	Country
PV module manufacturing	Canadian Solar	Canada
PV module manufacturing	China Singyes Solar Technologies Holdings	Bermuda
PV module manufacturing	EGing Photovoltaic Technology	China
PV module manufacturing	ET Solar	China
PV module manufacturing	First Solar	United States
PV module manufacturing	GCL	China
PV module manufacturing	Hanwha Q CELLS	South Korea
PV module manufacturing	JA Solar	China
PV module manufacturing	JinkoSolar	China
PV module manufacturing	Kyocera	Japan
PV module manufacturing	Motech	China
PV module manufacturing	Phono Solar	China
PV module manufacturing	REC Solar	United States
PV module manufacturing	ReneSola	China
PV module manufacturing	Risen Energy	China
PV module manufacturing	Shanghai Aerospace Automobile Electromechanical	China
PV module manufacturing	SHARP	Japan
PV module manufacturing	Shinsung E&G	South Korea
PV module manufacturing	Shunfeng	China
PV module manufacturing	Solar Frontier KK	Japan
PV module manufacturing	SolarWorld	Germany
PV module manufacturing	Sungrow Power Supply	China
PV module manufacturing	SunPower Corporation	United States
PV module manufacturing	Tongwei Solar	China
PV module manufacturing	Trina Solar	China
PV module manufacturing	Vikram Solar	India
PV module manufacturing	Xinyi Solar	China
PV module manufacturing	Yingli Green	China
Wind turbine manufacturing	Enercon	Germany
Wind turbine manufacturing	Envision	China
Wind turbine manufacturing	Gamesa	Spain
Wind turbine manufacturing	GE Wind	United States
Wind turbine manufacturing	Goldwind	China
Wind turbine manufacturing	Ming Yang	China
Wind turbine manufacturing	Nordex Acciona	Germany
Wind turbine manufacturing	Siemens	Germany
Wind turbine manufacturing	United Power	China

* At the end of 2017, China Guodian Corporation and China Shenhua Group merged into China Energy Investment Group. The selection of the new group for the coal mining sector is based on both groups' activities, and for Power generation, on China Guodian Corporation's total installed capacity.

Table 11 lists the 85 renewable energy projects which are selected for this research project.

Table 11 Selected renewable energy projects

Project name	Project country	Year
Acquisition of Markbygden ETT Wind Farm (650MW) 2017	Sweden	2017
Africana Energia Thermal Solar Plant (50MW) Refinancing	Spain	2017
Agriport Geohermie Plant (20MW)	Netherlands	2017
Balko Wind Farm (300MW) Refinancing 2017	United States	2017
Belwind Offshore Wind Farm II (165MW) Refinancing	Belgium	2017
Boralex French Wind Portfolio (111.5MW)	France	2017
Boralex Niaga Region Wind Farm (230MW) Refinancing	Canada	2017
Borkum West II Offshore Wind Farm (Phase 1) (200MW) Refinancing	Germany	2017
Brotorp Wind Farm (46.2MW) Refinancing	Sweden	2017
Butendiek Offshore Wind Farm (288MW) Refinancing	Germany	2017
Cestas Solar Park (300MW) Refinancing	France	2017
Chemin de Gres Wind Farm (29.7MW)	France	2017
Coopers Gap Wind Farm (453MW)	Australia	2017
Decouverte Solar PV Plant (12MW)	France	2017
Deutsche Bucht Offshore Wind Farm (252MW)	Germany	2017
Durance Solar PV Portfolio (34MW) Refinancing	France	2017
Epine Marie Madeleine Wind Farm (36MW)	France	2017
Grimsas Wind Farm (46.8MW)	Sweden	2017
Imperial Solar Energy Center West (ISE West) (150MW) Refinancing 2017	United States	2017
Innovent Wind Portfolio (33MW) Financing	France	2017
Krammer Wind Farm (102MW)	Netherlands	2017
Mohammed bin Rashid Al Maktoum Solar PV Phase III (800MW) PPP	United Arab Emirates	2017
Mount Signal 3 Solar Facility (328MW) Additional Facility 2 2017	United States	2017
Obton French Solar PV Portfolio (30.3MW) Refinancing	France	2017
Orejana (158MW) and Santa Maria PV Solar Parks (179MW)	Mexico	2017
Oudcamp Geothermal Plant (18MW)	Netherlands	2017
Ras Ghareb Wind Farm (262.5MW)	Egypt	2017
Refinancing of Macquarie's Stake in Lincs Offshore Wind Farm (270MW)	United Kingdom	2017
Renvico's French Wind Portfolio (187MW) Refinancing	France	2017
Reynosa Wind Farm (424MW)	Mexico	2017
Santa Vitoria do Palmar Wind Complex (207MW)	Brazil	2017
Serra da Babilonia Wind Complex (223.25MW)	Brazil	2017

Project name	Project country	Year
Silverton Wind Farm (200MW)	Australia	2017
Solarpark de Kie (10.15MW)	Netherlands	2017
Solem Solar PV Complex (290MW)	Mexico	2017
sPower US Wind & Solar Portfolio (567.3MW) Refinancing 2017	United States	2017
Stockyard Hill Wind Farm (530MW)	Australia	2017
Sunrun Scorpio Residential Solar Portfolio Financing 2017	United States	2017
Sweihan Solar PV Plant (1177MW) PPP	United Arab Emirates	2017
Trias Westland Geothermal Plant (25MW)	Netherlands	2017
Vasco Energies French Wind Portfolio (145MW) Refinancing	France	2017
Ventient Energy's UK Wind Portfolio (711MW) Refinancing	United Kingdom	2017
Walney Extension Offshore Wind Farm (659MW)	United Kingdom	2017
Zon op Ymere Social Housing Solar PV (20MW) and LED Lighting	Netherlands	2017
Aardwarmte Vogelaer Geothermal Doublet System (16MW)	Netherlands	2016
Andasol 1&2 Thermal Solar Plants Refinancing 2016	Spain	2016
Beacon Solar Portfolio (183.4MW)	United States	2016
Beatrice Offshore Wind Farm (588MW)	United Kingdom	2016
Blythe Solar PV Complex (235MW)	United States	2016
Boralex French Wind Portfolio (57.1MW)	France	2016
Cedar Creek II Wind Farm (250.8MW) Refinancing	United States	2016
Dermott Wind Farm (253MW)	United States	2016
Dominion US Solar PV Portfolio (423MW)	United States	2016
Dudgeon Offshore Wind Farm (402MW)	United Kingdom	2016
Electra Wind Farm (230MW)	United States	2016
Eurowatt Wind Portfolio (97MW) Financing	France	2016
Grand Renewable Solar (GRS) Plant (100MW) Refinancing	Canada	2016
Grande Prairie Wind Farm (400MW) Bond Facility	United States	2016
Imperial Solar Energy Center West (ISE West) (150MW) Refinancing 2016	United States	2016
Kathu CSP Power Plant (100MW)	South Africa	2016
Langa's French PV Portfolio (49MW) Refinancing	France	2016
Luchterduinen Offshore Wind Farm (130MW) Refinancing	Netherlands	2016
Magnetar Solar PV Portfolio (344MW) Refinancing	United Kingdom	2016
Merkur Offshore Wind Farm (396MW)	Germany	2016
Neoen's KfW Facility 2016	France	2016
Niagara Region Wind Farm (230MW)	Canada	2016
Photosol PV Solar Plants Refinancing	France	2016
Project Skywalker Onshore Wind Farm (1GW) 40% Investment Facility	Norway	2016
Rentel Offshore Wind Farm (309MW)	Belgium	2016

Project name	Project country	Year
Seigneurie de Beaupre Wind Farms II and III (272MW) Refinancing	Canada	2016
Solar Star I and II PV Solar Plants (579MW) Refinancing 2016	United States	2016
Sol-Luce Kingston PV Solar Farm Refinancing (100MW)	Canada	2016
Sonnedix's French Solar PV Portfolio (23.6MW) Refinancing	France	2016
Southern France Rooftop Solar Portfolio (31.2MW) Refinancing 2016	France	2016
SPower Solar PV Portfolio (339.4MW)	United States	2016
SunPort Delfzijl Solar Park (30.8MW)	Netherlands	2016
Tellenes Wind Farm (160MW)	Norway	2016
Tenergie Solar PV Portfolio (41.4MW) Financing 2016	France	2016
Thor Wind Farm (147.6MW)	Sweden	2016
Toul-Rosières 2 PV Solar Plant (36MW) Refinancing 2016	France	2016
Valeco Solar PV and Wind Portfolio (180MW) Financing	France	2016
Vela Energy Solar PV Portfolio (98.5MW) Refinancing	Spain	2016
Vivint Solar PV Solar Portfolio Financing (307MW)	United States	2016
Wake Wind Farm (257MW)	United States	2016
Western Interconnect Transmission Line and Broadview Wind Farms (324.3MW)	United States	2016

About this report

This report has been commissioned by The Fair Bank Guide (Eerlijke Bankwijzer) which is a coalition of the following organisations: Amnesty International, FNV, Milieudefensie, Oxfam Novib, PAX and World Animal Protection. In November 2015, to coincide with the COP21 climate summit in Paris, the FFGI published *Undermining Our Future*, a study analysing the financing trends in renewable energy and fossil fuels of financial institutions assessed by the FFGI. In the lead up to and immediately after COP21 many financial institutions expressed their commitments to mitigate climate, and to fulfil their role in achieving the global goal of keeping global warming below 1.5 degrees above pre-industrial levels.

Against this backdrop, and in preparation for the COP24 climate summit in Katowice, this report examines the changes in financial flows to renewable energy and fossil fuels since COP21.

The aim of the Fair Bank Guide is to encourage corporate social responsibility by bank groups.

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With profound research and advice, Profundo aims to make a practical contribution to a sustainable world and social justice. Quality comes first, aiming at the needs of our clients. Thematically we focus on commodity chains, the financial sector and corporate social responsibility. More information on Profundo can be found at www.profundo.nl.

Authorship

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